



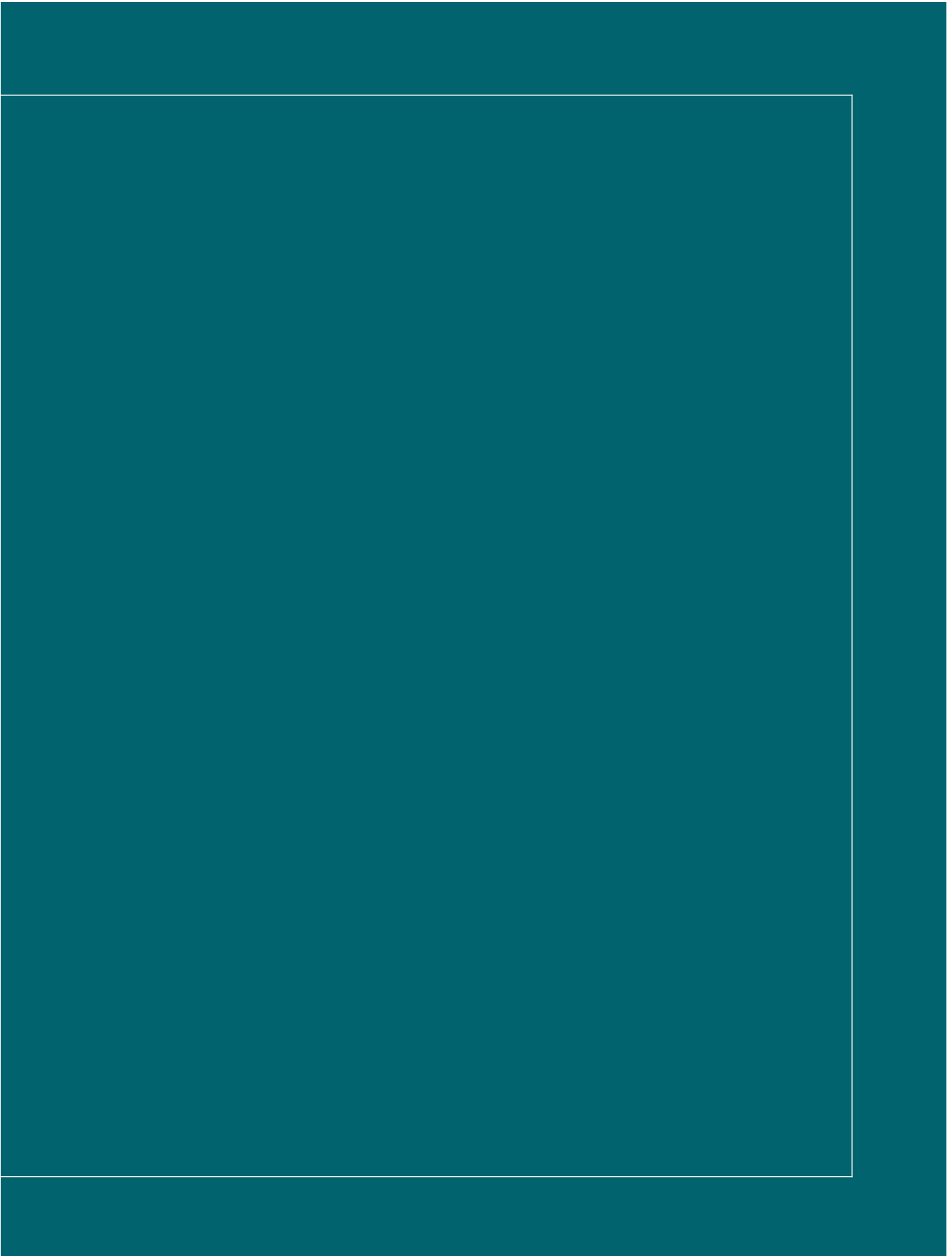
ANNUAL REPORT

वार्षिक प्रतिवेदन
2020-2021



भारतीय प्रौद्योगिकी संस्थान पटना

English
Version



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Incubation Centre of IIT Patna is set up to promote innovation and entrepreneurship in the broad area of Electronic System Design and Manufacturing and Medical Electronics.

DIRECTOR'S REPORT

Annual report of an institute chronicles its progress over a year. This contains valuable information and contributes in maintaining a historical record of the institute. IIT Patna- one of the members of the group of 2G IITs- was established in 2008 as an institute of higher learning to cater its academic, socio-cultural, economic and moral responsibilities. IIT Patna continues its commitment in nation – building through its academics and extra-curricular activities.

Despite pandemic induced hindrances, we have made significant progress in expanding infrastructure creation during 2020-2021 through construction of new residential buildings, hostels, workshops, academic buildings, among others. Medical team of the institute organized number of Covid-19 vaccination drives for our employees as well as their family members.

Incubation Centre of IIT Patna is set up to promote innovation and entrepreneurship in the broad area of Electronic System Design and Manufacturing and Medical Electronics.

This year, IIT Patna is initiating three more 4-year programmes, namely, B.Tech. in AI and Data Science, B.Tech. in Engineering Physics, and BS in Mathematics and Computing. We have few more courses in pipeline and expected to get launched in near future. Our parent ministry's- MoE's- continued support in this progress is gratefully acknowledged.

We expect return of normalcy soon and praying for everybody's safety and prosperity.

Jai Hind!

Prof. Pramod Kumar Jain

Director

Indian Institute of Technology Patna

ORGANIZATION STRUCTURE

Board of Governors

Dr. Anand Deshpande

Chairman

Prof. Pramod Kumar Jain

Member (ex-officio)

Director, IIT Patna

Shri. Rakesh Ranjan

Additional Secretary/ Joint Secretary

Member

MoE, Government of India

Shri Lokesh Kumar Singh

Principal Secretary, Department of Science & Technology,

Member

Government of Bihar

Shri. Shailesh Kumar Singh

Principal Secretary, Department of Science & Technology,

Member

Government of Jharkhand

Prof. Kailash Chandra Sharma

Member

Vice-Chancellor, Kurukshetra University

Prof. Yogesh Singh

Member

Vice-Chancellor, Delhi Technological University (Formerly Delhi College of Engineering)

Dr. Mangesh V. Joshi

Member

Managing Director,

Sanrachna Structural Stenthening Pvt. Ltd

Dr. Naveen K. Nishchal

Member

Associate Professor,

Department of Physics, IIT Patna

Dr. Sudhan Majhi

Member

Associate Professor,

Department of Electrical Engineering,

IIT Patna

Mr. Vishwa Ranjan

Secretary

Registrar, IIT Patna

Finance Committee

Dr. Anand Deshpande

Chairman

IIT Patna

Prof. Pramod Kumar Jain

Member (Ex-officio)

Director, IIT Patna

Shri. Rakesh Ranjan

Member

Additional Secretary (GoI)

Ministry of Education

Smt. Darshana M Dabral

Member JS & FA

Ministry of Education

Dr. Naveen K. Nishchal

Member

Associate Professor,

Department of Physics,

IIT Patna

Dr. Sudhan Majhi

Member

Associate Professor,

Department of Electrical Engineering,

IIT Patna

Mr. Vishwa Ranjan

Secretary

Registrar,

IIT Patna

Administrative Heads

Prof. Pramod Kumar Jain

Director

Indian Institute of Technology Patna

Sh. Vishwa Ranjan

Registrar, Indian Institute of Technology Patna

Dr. Subrata Kumar

Associate Dean (Academic)

Dr. Kailash Chandra Ray

Associate Dean (Administration)

Dr. Karali Patra

Associate Dean (Faculty Affairs)

Dr. Sriparna Saha

Associate Dean (Research and Development)

Dr. Sumanta Gupta

Associate Dean (Resource)

Dr. Manoranjan Kar

Associate Dean (Student Affairs)

Senate

Prof. Pramod Kumar Jain

Director

Mr. Vishwa Ranjan

Registrar

Prof. S.D. Sharma

External

Prof. Pankaj Kumar

External

Dr. Lipika Dey

External

Dr. Subrata Kumar

Associate Dean

Dr. Kailash Chandra Ray

Associate Dean

Dr. Karali Patra

Associate Dean

Dr. Sriparna Saha

Associate Dean

Dr. Sumanta Gupta

Associate Dean

Dr. Manoranjan Kar

Associate Dean

Dr. Jimson Mathew

HoD

Dr. Md. Kaleem Khan

HoD

Dr. Om Prakash

HoD

Dr. Ahmad Ali

HoD

Dr. R.K. Bag

HoD

Dr. Sahid Hussain

HoD

Dr. Nalin Bharti

HoD

Dr. Anup Kumar Keshri

HoD

Dr. V.R. Dantham

HoD

Dr. Nitin Dutt Chaturvedi

HoD

Dr. Koushik Roy

PIC, PG

Dr. Sushant Kumar

PIC, UG

Dr. P.K. Srivastava

Chairperson, JEE

Dr. Pradipta Chakraborty

Chairperson, GATE

Dr. Snehasis Daschakraborty

PIC, JAM

Dr. Neeladri Das

PIC, Library

Dr. Ajay D. Thakur

Warden

Dr. S.K. Parida

Associate Prof.

Dr. Ranganathan Subramanian

Associate Prof.

Dr. A. K. Upadhyay

Associate Prof.

Dr. Asif Ekbal

Associate Prof.

Dr. Akhilendra Singh

Associate Prof.

Dr. Probir Saha

Associate Prof.

Dr. Ranjan Kumar Behera

Associate Prof.

Dr. Sudhan Majhi

Associate Prof.

Dr. Y. M. Tripathi

Associate

Prof. Dr. Utpal Roy

Associate Prof.

Dr. Manabendra Pathak

Associate Prof.

Dr. Atul Thakur

Associate

Prof. Dr. Somanath Tripathy

Associate Prof.

Dr. Mahesh Kumar H. Kolekar

Associate Prof.

Dr. Shovan Bhaumik

Associate Prof.

Dr. Debabrata Seth

Associate Prof.

Dr. Prolay Das

Associate Prof.

Dr. Naveen K. Nishchal

Associate Prof.

Dr. Somnath Sarangi

Associate Prof.

Dr. Preetam Kumar

Associate Prof.

Dr. Rajiv Misra

Associate Prof.

Dr. S.S. Panda

Associate Prof.

Dr. N. K. Tomar

Associate Prof.

Dr. Md. L. H. Choudhary

Associate Prof.

Dr. Jawar Singh

Associate Prof.

Dr. Rajib Kumar Jha

Associate Prof.

Dr. Yatendra Kumar Singh

Associate Prof.

Dr. Smriti Singh

Associate Prof.

Dr. Ajay Thakur

Associate Prof.

Dr. Subrata Hait

Associate Prof.

Dr. Rishi Raj

Associate Prof.

Dr. S Sivasubramani

Associate Prof.

Dr. Papia Raj

Associate Prof.

Dr. Priyanka Tripathi

Associate Prof.

Dr. Mayank Tiwari

Associate Prof.

Dr. Anirban Chowdhury

Associate Prof.

Dr. Amit Kumar

Associate Prof.

Dr. P.K. Tiwari

Associate Prof.

PGR Gymkhana

Vacant

VP Gymkhana

Vacant

Building Works Committee

Prof. Pramod Kumar Jain

Director,

IIT Patna

Chairman (Ex-Officio)

Mr. Sushant Baliga

(Retd.) Additional Director General,

CPWD Training Institute, New Delhi and Advisor, Civil Works,

IIT Patna

Member

Mr. S. Ramanujam

Consultant, Ex-Director, DCSEM, Dept. of Atomic Energy

Member

Mr. Biswajit Kumar

President & Chief Project Officer,

Raheja Universal Private Ltd, Mumbai

Member

Mr. Rajiv Garg

Superintending Engineer, IIT Kanpur

Member

Mr. B.K Sahoo

Superintending Engineer (Electrical), IIT Kharagpur

Member

Mr. Vishwa Ranjan

Registrar, IIT Patna

Secretary

All India Rank [2020-21] of IIT Patna

IIT Patna participated in the NIRF 2020 ranking under two categories – Overall and Engineering. This year IIT Patna obtained more scores under both the categories compared to the last year leading to improvement in the Overall ranking to 54 from last year's 58. In the Engineering category, however, the ranking has slipped to 26 from the last year's 22 rank despite the slight gain in the overall score.

In Atal Ranking of Institutions on Innovation Achievements (ARIIA) - 2020, IIT Patna has been ranked in Band A (i.e., ranked between 11 and 25).

In THE ranking 2021, IIT Patna is ranked in the range of 1001+ in World University, 301-350 in Asia university, 301-350 in Young University, 601-800 in Engineering & Technology and 301-350 in Emerging Economics categories.

In the QS 2021 ranking, IIT Patna was judged at Asia level where it got ranked in the range of 301 to 350 like last year.

EVENTS OF SIGNIFICANT IMPORTANCE

Recruitment of Employees at IIT Patna during 2020-2021

Teaching Staff Members(Joined)

Sl. No.	Name	Department	Designation
1	Dr. Atanu Kumar Metya	Chemical & Biochemical Engineering	Assistant Professor-Grade-II

Teaching Staff Members (Relieved-On lien)

Sl. No.	Name	Department	Designation	Remarks
1	Dr. Ashish Kumar Upadhyay	Mathematics	Associate Professor	On lien

Non-Teaching Staff Members (Joined)

Sl. No.	Employee Name	Designation	Date of Joining
1	Mr. Amit Kumar Chaudhary	Cook cum Caretaker	23.04.2020 (FN)

Non-Teaching Staff Members (Relieved)

Sl. No.	Employee Name	Department	Designation	Remarks
1	Mr. Narendra Babu Sanka	Academic Section	Senior Suprintendant	On Lien
2	Mr. B P Sibasankar	Administration	Junior Suprintendant	
3	Mr. Rakesh Kushwaha	Sports Cell	Physical Training Instructor	
4	Mr. Ashok Gupta	Administration	Junior Superintendent	
5	Mr. Praveen Kumar Tripathi	Boy's Hostel	Junior Assistant	

Foreign Students at IIT Patna

Sr. No.	Student Name	Country	Academic Program	Date of Joining	Department	Funding
1.	Thy Truc Doan	Vietnam	Ph.D.	18 Aug 2020	Civil and Environmental Engineering	ASEAN
2.	Smegnew Asemie	Ethiopia	Ph.D.	Requested extension in fee payment (Aug 2020)	Computer Science & Engineering	Embassy of Ethiopia, New Delhi
3.	Shubhechchu Khanal	Nepal	M-Tech.	12 Aug 2020	Computer Science & Engineering	Self-financed
4.	Asres Temam Abagissa	Ethiopia	Ph.D.	Jan 2021	Computer Science & Engineering	Embassy of Ethiopia, New Delhi
5.	Minyechil Alehegn Tefera	Ethiopia	Ph.D.	Jan 2021	Computer Science & Engineering	Embassy of Ethiopia, New Delhi
6.	Tibebu Bekel Shana	Ethiopia	Ph.D.	Jan 2021	Computer Science & Engineering	Embassy of Ethiopia, New Delhi

DEPARTMENT-WISE ACHIEVEMENTS

Chemical and Biochemical Engineering

HEAD: DR. NITIN DUTT CHATURVEDI



DR. ANOOP K GUPTA

Assistant Professor

Computational fluid dynamics, Non-Newtonian flow rheology.
Motion of bubble/drops. Particle dynamics in multiphase flows.
CFD-DEM coupled simulations, Heat transfer in Nanofluids Modelling of Phase change materials



DR. ATANU KUMAR METYA

Assistant Professor

Thermodynamics and statistical mechanics, Phase equilibria and nucleation, Wetting phenomena, Structure, dynamics, and interfacial properties of solutions in bulk and confined systems, Design of anti-icing surfaces and force field development using density functional theory



DR. JOSE V PARAMBIL

Assistant Professor

Separation Processes, Crystallization, Carbon Footprinting



DR. NITIN DUTT CHATURVEDI

Assistant Professor

Modeling and Simulation of Chemical processes, Process system engineering, Process Integration Pinch Analysis, Industrial Energy Conservation, Scheduling and optimization of batch processes



DR. SANDIP KHAN

Assistant Professor

Molecular Modelling and Simulation, Statistical Thermodynamics, Equilibrium, Dynamic and Interfacial Properties of Complex fluids



DR. SUJOY KUMAR SAMANTA

Assistant Professor

Advanced Oxidation Processes, Wastewater Treatment, Photocatalysis, Microwave-Assisted Material Processing



DR. SUSHANT KUMAR

Assistant Professor

Clean Hydrogen Production Methods, Hydrogen Storage using metal hydrides, CO₂ Utilization and Capture, Catalysts for clean energy applications

Fellow - Professional Bodies

1. Sujoy Kumar Samanta (2021) The Institution of Engineers (India)
2. Sujoy Kumar Samanta (2021) Nikhil Bharat Shiksha Parisad

Member - Professional Bodies

1. Sujoy Kumar Samanta (2021) IWA (The International Water Association)
2. Sujoy Kumar Samanta (2020) ACS (American Chemical Society)

Sponsored Research Projects

1. Continuous Polymorphic Crystallisation of Active Pharmaceutical Ingredients in a Slug-Flow Cooling-Crystalliser (SERB, Rs.32.00 Lakhs) (PI : Dr. Jose V Parambil)
2. Design and optimization of systems containing microencapsulated phase change materials (MPCMs) for efficient thermal energy storage and heat transfer (DST, Rs.35.00 Lakhs) (PI : Dr. Anoop Kumar Gupta)
3. Multiscale Modeling of Deep Eutectic Solvent Promoted Enhanced Oil Recovery (NSM, Rs.34.50 Lakhs) (Dr Sandip Khan).
4. Planning of process industries production to minimize carbon emission and energy consumption (SERB-DST, Rs.22.36 Lakhs) (PI : Dr. Nitin Dutt Chaturvedi)
5. Recycling of reverse osmosis reject water for co production of high value metabolites and biofuel precursors using high density algal cultivation (SERB-Imprint, Rs.40.00 Lakhs) (PI : Dr. Sanjeev Kumar)
6. Solution co-crystallization of nutraceutical: Process design and development with scale-up (SERB, Rs.20.25 Lakhs) (Dr Jose V Parambil, Mentor)
7. Wetting behavior of Ionic Liquids on different surfaces: Insight from Molecular Dynamic Simulation (SERB, Rs.33.00 Lakhs) (PI : Dr. Sandip Khan)

Invited Lectures by Faculty Members

1. Process Development Towards Continuous Manufacturing by Jose Varghese Parambil (Sree Chitira Tirunal College of Engineering, Trivandrum) (2020)
2. Quantifying Greenhouse Gas Emissions: Prospects in India by Jose Varghese Parambil (Amal Jyothi College of Engineering) (2020)
3. Relevant Guidance on Problems Faced by Today's Budding Engineers by Sujoy Kumar Samanta (IIT Patna) (2020)
4. Process Integration for Process System Engineering by Nitin Dutt Chaturvedi (IIT Madras) (2019)

Journal Publications (Scopus – Indexed)

1. Mishra S., Kumar P., Samanta S.K. (2020). Microwave Catalytic Degradation of Antibiotic Molecules by 2D Sheets of Spinel Nickel Ferrite. Industrial and Engineering Chemistry Research, 59(36), 15839-15847. DOI: 10.1021/acs.iecr.0c02352
2. Sinha R.K., Chaturvedi N.D. (2020). A goal programming approach to reduce plastic waste for sustainable packaging design. Chemical Engineering Transactions, 81, 1009-1014. DOI: 10.3303/CET2081169
3. Shukla G., Chaturvedi N.D. (2021). A Pinch Analysis approach for minimizing compression energy and capital investment in gas allocation network. Clean Technologies and Environmental Policy, 23(02), 639-652. DOI: 10.1007/s10098-020-01992-y
4. Memon A., Mishra G., Gupta A.K. (2020). Buoyancy-driven melting and heat transfer around a horizontal cylinder in square enclosure filled with phase change material. Applied Thermal Engineering, 181. DOI: 10.1016/j.applthermaleng.2020.115990
5. Chaturvedi N.D. (2020). Cost optimal sizing of hybrid power systems: A pinch analysis approach. Chemical Engineering Transactions, 81, 973-978. DOI: 10.3303/CET2081163
6. Trivedi M., Nirmalkar N., Gupta A.K., Chhabra R.P. (2020). Effect of Non-Newtonian Fluid Behavior on Forced Convection from a Cluster of Four Circular Cylinders in a Duct, Part I: Power-Law Fluids. Heat Transfer Engineering. DOI: 10.1080/01457632.2020.1844431
7. Mandal S.S., Singh S.K., Bhattacharjee S., Khan S. (2021). Phase behaviour of confined associating fluid in a functionalized slit pore: A Monte Carlo study. Fluid Phase Equilibria, 631. DOI: 10.1016/j.fluid.2020.112909

8. Verma P., Samanta S.K., Mishra S. (2020). Photon-independent NaOH/H₂O₂ based degradation of rhodamine-B dye in aqueous medium: Kinetics, and impacts of various inorganic salts, antioxidants, and urea. *Journal of Environmental Chemical Engineering*, 8(04). DOI: 10.1016/j.jece.2020.103851
9. Mamta, Rana M.S., Sharma A.K., Parambil J.V., Prajapati S.K. (2021). Potential of reverse osmosis reject water as a growth medium for the production of algal metabolites—A state-of-the-art review. *Journal of Water Process Engineering*, 40. DOI: 10.1016/j.jwpe.2020.101849
10. Kumawat P.K., Chaturvedi N.D. (2020). Robust targeting of resource requirement in a continuous water network. *Chemical Engineering Transactions*, 81, 1003-1008. DOI: 10.3303/CET2081168
11. Shukla G., Chaturvedi N.D. (2020). Simultaneous minimization of cost and energy in gas allocation network. *Chemical Engineering Transactions*, 81, 1093-1098. DOI: 10.3303/CET2081183
12. Pawar N., Saha A., Nandan N., Parambil J.V. (2021). Solution cocrystallization: A scalable approach for cocrystal production. *Crystals*, 11(03). DOI: 10.3390/cryst11030303
13. Nirmalkar N., Alam M.J., Gupta A.K. (2021). Stability criteria and convective mass transfer from the falling spherical drops, part I: Bingham plastic fluids. *Canadian Journal of Chemical Engineering*. DOI: 10.1002/cjce.24218
14. Bhattacharjee S., Chakraborty D., Khan S. (2020). Wetting behavior of aqueous 1-alkyl-3-methylimidazolium tetrafluoroborate {[C_n MIM][BF₄] (n = 2, 4, 6)} on graphite surface. *Chemical Engineering Science*, 229. DOI: 10.1016/j.ces.2020.116078

Conference Papers/Book Chapters

1. Memon, A., Gupta, A.K. (2020). Melting and Thermal behavior of Phase Change Materials Around an Asymmetrically Confined Circular Cylinder. International conference on “Advances in Chemical Engineering”, UPES, Dehradun.

Chemistry

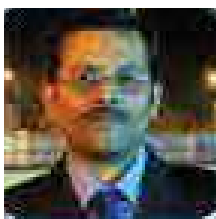
HEAD: DR. SAHID HUSSAIN



DR. AMIT KUMAR

Associate Professor

Synthesis of modified sugar, glycosyltransferase inhibitors, Oligosaccharides and Chiral catalyst; Application of Metal catalysis in the synthesis of natural products and Medicinal useful Pharmacophores



DR. DEBABRATA SETH

Associate Professor

Photophysics, Chemical Dynamics, Ionic liquids



DR. DEBAJIT SARMA

Assistant Professor

Coordination polymer, solid state chemistry, Chalcogenide and chalcogel based materials, oxide materials, energy conversion and catalysis.



DR. MD. LOKMAN HAKIM CHOUDHURY

Associate Professor

Diversity Oriented Synthesis (DOS) using multicomponent reactions (MCRs), the discovery and development of new synthetic methods with particular interest in heterocyclic chemistry and total synthesis of various biologically active natural products and structural analogues



DR. NEELADRI DAS

Associate Professor

Self-assembly and Supramolecular Chemistry, Organic Synthesis, Inorganicorganic hybrid material synthesis, Coordination polymers / Metal organic framework (MOF), Polymer Chemistry - syntheses/characterization/applications



DR. PROLAY DAS

Associate Professor

DNA Nanotechnology, Carbon Dot based functional nanostructures, Biomaterials



DR. RANGANATHAN SUBRAMANIAN

Associate Professor

Spectroscopy, Computational, Instrumentation development, Physical Chemistry



DR. SAHID HUSSAIN

Associate Professor

Nano-scale Materials, Green Chemistry and Synthetic Organic Methodologies



DR. SNEHASIS DASCHAKRABORTY

Assistant Professor

Studies of reaction and relaxation processes in complex chemical and biological systems using theory and computer simulation technique



DR. SUBRATA CHATTOPADHYAY

Assistant Professor

Assistant Professor Polymer chemistry (sustainable/Green synthesis), nanomaterials and surface engineering



DR. T. RAJAGOPALA RAO

Assistant Professor

Quantum reactive scattering of gas phase bi-molecular reactions, non-adiabatic coupling effects, geometric phase effects, nuclear spin symmetry effects, isotopic effects, spectral attributes of quasi-bound states, construction of potential energy surfaces

Member - Professional Bodies

- | | |
|---|--|
| 1. Amit Kumar (2015) Chemical Research Society of India | 6. Neeladri Das (2018) American Chemical Society |
| 2. Amit Kumar (2015) Association of Carbohydrate Chemist and Technologist India | 7. Neeladri Das (2021) Royal Society of Chemistry |
| 3. Debajit Sarma (2020) American Chemical Society | 8. Ranganathan Subramanian (2018) American Chemical Society |
| 4. Md. Lokman Hakim Choudhury (2015) Chemical Research Society of India | 9. Ranganathan Subramanian (2015) Chemical Research Society of India |
| 5. Md. Lokman Hakim Choudhury (2020) American Chemical Society | 10. Sahid Hussain (2021) Chemical Research Society of India |

Member - Editorial Board

- | | |
|---|--|
| 1. Md. Lokman Hakim Choudhury (2021) Editorial Board Member - American Journal of Organic Chemistry | 3. Snehasis Daschakraborty (2021) Review Editor - Frontiers in Chemistry |
| 2. Ranganathan Subramanian (2020) Associate Editor - Analytical Chemistry Letters | |

Awards & Honours

1. Snehasis Daschakraborty (2020) INSA Medal for Young Scientists by Indian National Science Academy

Sponsored Research Projects

1. Exploration of Multicomponent Reactions (MCRs) Towards Green Synthesis of Novel Functionalized & Sequence Regulated Macromolecules (SERB, DST, Govt. of India, Rs.40.95 Lakhs) (PI : Dr. Md. Lokman Hakim Choudhury)
2. Quantum dynamical studies on bimolecular reactions of practical and fundamental interest. (DST Inspire, Rs.30.00 Lakhs) (PI : Dr. Tammineni Rajagopala Rao)
3. Reinforcement of Cast Elastomeric Polyurethane by Novel Carbonaceous Nanofillers like Carbon Dots (Manali Petrochemicals, Rs.25.00 Lakhs) (PI : Dr. Dinesh Kumar Kotness, Co-PI: Dr Prolay Das)
4. Functional Polymers and Materials from Chitosan Using Green Click Inspired Reactions (CSIR, Rs.14.50 Lakhs) (PI : Dr. Subrata Chattopadhyay)
5. Mechanism of Hydroxide Ion Transfer through Anion Exchange Membrane in Anion Exchange Membrane Fuel Cell: Investigation using Molecular Dynamics Simul (SERB Early Career Research Award, Rs.23.65 Lakhs) (PI : Dr. Snehasis Daschakraborty)
6. Permanent dropwise condensation via amphiphilic additives in vapor phase (DST Indo-Korean joint project , Rs.30.33 Lakhs) (PI : Dr. Rishi Raj, Co-PI: Dr Snehasis Daschakraborty)
7. Rational Design and Synthesis of Functionalized Metal-organic Frameworks/gels for Biomimetic Heterogeneous Catalysis [Science & Engineering Research Board (SERB), Rs.24.31 Lakhs] (PI : Dr. Debajit Sarma)
8. Supramolecular Chemistry having Phosphine backbones (CSIR, Rs.14.00 Lakhs) (PI : Dr. Neeladri Das)
9. Theoretical Investigation of intermolecular forces and optical properties of atmospheric aerosols (CSIR Finished on 30.4.2020, Rs.4.00 Lakhs) (PI : Dr. Ranganathan Subramanian)
10. Design and synthesis of Biologically Important conformationally constrained non classical bicyclic sugar via activation of C(sp³)-H bonds (CRG-SERB, Govt. of India, Rs.43.08 Lakhs) (PI : Dr. Amit Kumar)
11. Dynamics of Water near Biomolecules (DST Inspired, Rs. 23,15,408.00) (PI: Dr. Snehasis Daschakraborty; Fellow: Ms. Shakkira E.)
12. Capturing Volatile Organic Compounds by Room Temperature Ionic Liquids: A Molecular Perspective (DST Women Scientist A: Rs, 26,90,000) (PI: Dr. Sandipa Indra; Mentor: Dr. Ranganathan Subramanian)

Invited Lectures by Faculty Members

1. Self-healing and Shape Memory DNA-Carbon Dot-Polyvinylpyrrolidone Hydrogel for wound healing applications by Prolay Das (The First DNA Nanotechnology India Virtual Symposium) (2020)
2. Carbon Dot: An emerging Nanoparticle with tremendous potential in Biomedical Research and Environment by Prolay Das (Department of Chemical Engineering, Veer Surendra Sai University of Technology (VSSUT), Burla, Odisha) (2020)
3. DNA-Carbon Dot Hybrid Nano arrays with Watson Crick, G-Quadruplex and I-Motif Structures by Prolay Das (IISC Bangalore) (2020)
4. Low Molecular Weight Gelator based Metallogels for Environmental Remediation by Debajit Sarma (Science for Sustainable Development (SSD-2020), B Borroah College and Assam Science Technology & Environment Council (ASTEC))
5. A Promising Synthetic Route for O-Glycosidic Bond Formation and Glycodiversification by Amit Kumar (Webinar@ICaE) (2020)
6. Importance of Complex to Small Organic Molecules in Pharmaceutical Industry by Amit Kumar (Webinar@NIT, Manipur) (2020)
7. Importance of Complex to Small Organic Molecules in Pharmaceutical Industry by Amit Kumar (Webinar@Salidha College) (2020)
8. Education and Learning in Pandemic Times by Snehasis Daschakraborty (TWAS) (2020)
9. Homeoviscous Adaptation of Cell Membrane: Defying Cold Stress by Snehasis Daschakraborty (Statistical Mechanics in Chemistry and Biology (SMCB - 2021))
10. Nanoscale Materials for Photocatalytic and Adsorption Applications: A Greener Prospective by Sahid Hussain (Nowgong College, Nowgong, Assam) (2020)
11. Process Optimization by Spectroscopy and Spectrometry by Ranganathan Subramanian (Webinar in International Conference on Molecular Structure and Instrumental Approaches (ICMSI-2020))

Journal Publications (Scopus – Indexed)

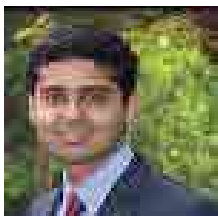
- Bomzon B., Khunger Y., Subramanian R. (2020). A dielectric and spectrophotometric study of the tautomerization of 2-hydroxypyridine and 2-mercaptopyridine in water. *RSC Advances*, 10(04), 2389-2395. DOI: 10.1039/c9ra08392h
- Alam N., Sarma D. (2020). A thixotropic supramolecular metallo gel with a 2D sheet morphology: Iodine sequestration and column based dye separation. *Soft Matter*, 16(47), 10620-10627 DOI: 10.1039/d0sm00959h
- Chowdhury A., Kumari S., Khan A.A., Chandra M.R., Hussain S. (2021). Activated carbon loaded with Ni-Co-S nanoparticle for superior adsorption capacity of antibiotics and dye from wastewater: Kinetics and isotherms. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 611. DOI: 10.1016/j.colsurfa.2020.125868
- Kumar N., Raza Q., Sinha K.N.R., Seth D., Raj R. (2020). Amphiphilic additives to enhance pool boiling heat transfer in confined spaces. *Journal of Enhanced Heat Transfer*, 27(06), 545-560. DOI: 10.1615/JENHHEATTRANSF.2020034432
- Mandal S., Pal J., Subramanian R., Das P. (2020). Amplified fluorescence of Mg²⁺ selective red-light emitting carbon dot in water and direct evaluation of creatine kinase activity. *Nano Research*, 13(10), 2770-2776. DOI: 10.1007/s12274-020-2927-1
- Mohan B., Choudhary M., Kumar G., Muhammad S., Das N., Singh K., Al-Sehemi A.G., Kumar S. (2020). An experimental and computational study of pyrimidine based bis-uracil derivatives as efficient candidates for optical, nonlinear optical, and drug discovery applications. *Synthetic Communications*, 50(14), 2199-2225. DOI: 10.1080/00397911.2020.1771369
- Kumar A., Rao T.R., Sarkar R. (2021). An unbiased confirmation of the participating isomers of C2B5— in the formation of its photo-detachment spectra: a theoretical study. *Physical Chemistry Chemical Physics*, 23(04), 3160-3175. DOI: 10.1039/d0cp04619a
- Dubey V., Daschakraborty S. (2020). Breakdown of the Stokes–Einstein relation in supercooled water/ methanol binary mixtures: Explanation using the translational jump-diffusion approach. *Journal of Physical Chemistry B*, 124(46), 10398-10408. DOI: 10.1021/acs.jpcc.0c07318
- Hsan N., Dutta P.K., Kumar S., Das N., Koh J. (2020). Capture and chemical fixation of carbon dioxide by chitosan grafted multi-walled carbon nanotubes. *Journal of CO2 Utilization*, 41. DOI: 10.1016/j.jcou.2020.101237
- Nayak S., Prasad S.R., Mandal D., Das P. (2020). Carbon dot cross-linked polyvinylpyrrolidone hybrid hydrogel for simultaneous dye adsorption, photodegradation and bacterial elimination from waste water. *Journal of Hazardous Materials*, 392. DOI: 10.1016/j.jhazmat.2020.122287
- Sreenath P.R., Mandal S., Panigrahi H., Das P., Dinesh Kumar K., (2020). Carbon dots: Fluorescence active, covalently conjugated and strong reinforcing nanofiller for polymer latex. *Nano-Structures and Nano-Objects*, 23. DOI: 10.1016/j.nanoso.2020.100477
- Noorussabah N., Choudhary M., Das N., Mohan B., Singh K., Singh R.K., Ahmad K., Muhammad S., Kumar S. (2020). Copper(II) and Nickel(II) Complexes of Tridentate Hydrazide and Schiff Base Ligands Containing Phenyl and Naphthalyl Groups: Synthesis, Structural, Molecular Docking and Density Functional Study. *Journal of Inorganic and Organometallic Polymers and Materials*, 30(11), 4426-4430. DOI: 10.1007/s10904-020-01610-w
- Erimban S., Daschakraborty S. (2020). Cryostabilization of the Cell Membrane of a Psychrotolerant Bacteria via Homeoviscous Adaptation. *Journal of Physical Chemistry Letters*, 11(18), 7709-7716. DOI: 10.1021/acs.jpclett.0c01675
- Molla M.R., Das P., Guleria K., Subramanian R., Kumar A., Thakur R. (2020). Cyanomethyl Ether as an Orthogonal Participating Group for Stereoselective Synthesis of 1,2-trans- β -O-Glycosides. *Journal of Organic Chemistry*, 85(15), 9955-9968. DOI: 10.1021/acs.joc.0c01249
- Maiti A., Daschakraborty S. (2021). Effect of TMAO on the Structure and Phase Transition of Lipid Membranes: Potential Role of TMAO in Stabilizing Cell Membranes under Osmotic Stress. *Journal of Physical Chemistry B*, 125(04), 1167-1180. DOI: 10.1021/acs.jpcc.0c08335
- Dubey K.A., Srikanth K., Rajagopala Rao T., Jose J. (2020). Effects of anisotropy on the resonant scattering of hydrogen atom from the fullerene C60. *Journal of Physics Communications*, 4(07), 1-7. DOI: 10.1088/2399-6528/ABA476

17. Sharma P., Sarma P., Frontera A., Hussain S., Verma A.K., Bhattacharyya M.K. (2021). Energetically significant anti-parallel π -stacking and unconventional anion- π interactions in phenanthroline based Ni(II) and Cu(II) coordination compounds: Antiproliferative evaluation and theoretical studies. *Inorganica Chimica Acta*, 516. DOI: 10.1016/j.ica.2020.120082
18. Das A., Sharma P., Frontera A., Verma A.K., Barcelo-Oliver M., Hussain S., Bhattacharyya M.K. (2021). Energetically significant nitrile- π and unconventional C-H \cdots π (nitrile) interactions in pyridine based Ni(II) and Zn(II) coordination compounds: Antiproliferative evaluation and theoretical studies. *Journal of Molecular Structure*, 1223. DOI: 10.1016/j.molstruc.2020.129246
19. Avais M., Chattopadhyay S. (2021). Hierarchical Porous Polymers via a Microgel Intermediate: Green Synthesis and Applications toward the Removal of Pollutants. *ACS Applied Polymer Materials*, 3(02), 789-800. DOI: 10.1021/acsapm.0c01086
20. Nayak S., Prasad S.R., Mandal D., Das P. (2020). Hybrid DNA-Carbon Dot-Poly(vinylpyrrolidone) Hydrogel with Self-Healing and Shape Memory Properties for Simultaneous Trackable Drug Delivery and Visible-Light-Induced Antimicrobial Photodynamic Inactivation. *ACS Applied Bio Materials*, 3(11), 7865-7875. DOI: 10.1021/acsabm.0c01022
21. Ali D., Panday A.K., Choudhury L.H. (2020). Hydrogen Peroxide-Mediated Rapid Room Temperature Metal-Free C(sp²)-H Thiocyanation of Amino Pyrazoles, Amino Uracils, and Enamines. *Journal of Organic Chemistry*, 85(21), 13610-13620. DOI: 10.1021/acs.joc.0c01738
22. Bapli A., Jana R., Pandit S., Seth D. (2021). Selective prototropism of lumichrome in the liposome/graphene oxide interface: A detailed spectroscopic study. *Journal of Molecular Liquids*, 339. DOI: 10.1016/j.molliq.2021.116738
23. Indra S., Subramanian R., Daschakraborty S. (2021). Interaction of volatile organic compounds acetone and toluene with room temperature ionic liquid at the bulk and the liquid-vacuum interface. *Journal of Molecular Liquids*, 331. DOI: 10.1016/j.molliq.2021.115608
24. Jana A., Bhaumick P., Choudhury L.H. (2020). Microwave assisted synthesis of β -keto thioethers and furan derivatives by thiol directed multicomponent reactions. *New Journal of Chemistry*, 44(20), 8442-8453. DOI: 10.1039/d0nj00587h
25. Bapli A., Chatterjee A., Gautam R.K., Jana R., Seth D. (2021). Modulation of the Protein-Ligand Interaction in the Presence of Graphene Oxide: A Detailed Spectroscopic Study. *Langmuir*, 37(16), 5034-5048. DOI: 10.1021/acs.langmuir.1c00534
26. Panday A.K., Ali D., Choudhury L.H. (2020). One-pot synthesis of pyrimidine linked naphthoquinone-fused pyrroles by iodine-mediated multicomponent reactions. *Organic and Biomolecular Chemistry*, 18(26), 4997-5007. DOI: 10.1039/d0ob00591f
27. Jaiswal Y., Mandal S., Das P., Kumar A. (2020). One-Pot Synthesis of Orange-Red Fluorescent Dimeric 2 H-Pyrrolo[2,3- c]isoquinoline-2,5(3 H)-diones from Benzamides and Maleimides via Ru(II)-Catalyzed Sequential C-C/C-N/C-C Bond Formation. *Organic Letters*, 22(04), 1605-1610. DOI: 10.1021/acs.orglett.0c00194
28. Gautam R.K., Bapli A., Jana R., Seth D. (2020). Photophysics and rotational dynamics of Nile red in room temperature ionic liquid (RTIL) and RTIL-cosolvents binary mixtures. *Journal of Photochemistry and Photobiology A: Chemistry*, 339. DOI: 10.1016/j.jphotochem.2020.112550
29. Jana R., Bapli A., Gautam R.K., Pandit S., Bahadur P., Seth D. (2020). Photophysics of a red emitting dye in the presence of pluronic block copolymers. *Journal of Photochemistry and Photobiology A: Chemistry*, 407. DOI: 10.1016/j.jphotochem.2020.113051
30. Dubey V., Maiti A., Daschakraborty S. (2020). Predicting the solvation structure and vehicular diffusion of hydroxide ion in an anion exchange membrane using nonreactive molecular dynamics simulation. *Chemical Physics Letters*, 755. DOI: 10.1016/j.cplett.2020.137802
31. Parvin T., Yadav R., Choudhury L.H. (2020). Recent applications of thiourea-based organocatalysts in asymmetric multicomponent reactions (AMCRs). *Organic and Biomolecular Chemistry*, 18(29), 5513-5532. DOI: 10.1039/d0ob00595a

32. Patel D., Jana R., Lin M.-H., Kuperkar K., Seth D., Chen L.-J., Bahadur P. (2021). Revisiting the salt-triggered self-assembly in very hydrophilic triblock copolymer Pluronic® F88 using multitechnique approach. *Colloid and Polymer Science*, 299(07), 1113-1126. DOI: 10.1007/s00396-021-04833-6
33. Pal J., Teja P.S., Subramanian R. (2020). Sodium and lithium ions in aerosol: thermodynamic and rayleigh light scattering properties. *Theoretical Chemistry Accounts*, 139(11) DOI: 10.1007/s00214-020-02683-z
34. Kumar B., Sugunakara Rao M., Kumar P., Hussain S., Das S. (2020). Spectrophotometric investigation of 5-nitroso-6-aminouracil and its methyl derivative in methanol by selective complexation with bivalent metal ions. *Journal of Molecular Structure*, 1221. DOI: 10.1016/j.molstruc.2020.128827
35. Pandit S., Bapli A., Gautam R.K., Jana R., Seth D. (2021). Spectroscopic investigation of a red emitting dye in the companionship of serum albumins and cucurbit [7] uril. *Journal of Molecular Liquids*, 332. DOI: 10.1016/j.molliq.2021.115885
36. Yadav R., Parvin T., Panday A.K., Choudhury L.H. (2021). Synthesis of styryl-linked fused dihydropyridines by catalyst-free multicomponent reactions. *Molecular Diversity*. DOI: 10.1007/s11030-021-10216-4
37. Bhaumick P., Jana A., Choudhury L.H. (2021). Synthesis of novel coumarin containing conjugated fluorescent polymers by Suzuki cross-coupling reactions and their chemosensing studies for iron and mercury ions. *Polymer*, 218. DOI: 10.1016/j.polymer.2021.123415
38. Pal J., Patla A., Subramanian R. (2021). Thermodynamic properties of forming methanol-water and ethanol-water clusters at various temperatures and pressures and implications for atmospheric chemistry: A DFT study. *Chemosphere*, 272. DOI: 10.1016/j.chemosphere.2021.129846
39. Hassan A., Goswami S., Alam A., Bera R., Das N. (2021). Triptycene based and nitrogen rich hyper cross linked polymers (TNHCPs) as efficient CO₂ and iodine adsorbent. *Separation and Purification Technology*, 257. DOI: 10.1016/j.seppur.2020.117923
40. Alam N., Sarma D. (2020). Tunable Metallogels Based on Bifunctional Ligands: Precursor Metallogels, Spinel Oxides, Dye and CO₂ Adsorption. *ACS Omega*, 5(28), 17356-17366. DOI: 10.1021/acsomega.0c01710
41. Mandal S., Das P. (2020). Ultrasensitive visual detection of mycotoxin citrinin with yellow-light emitting carbon dot and Congo red. *Food Chemistry*, 312. DOI: 10.1016/j.foodchem.2019.126076
42. Sreenath P.R., Mandal S., Singh S., Panigrahi H., Das P., Bhowmick A.K., Dinesh Kumar K. (2020). Unique approach to debundle carbon nanotubes in polymer matrix using carbon dots for enhanced properties. *European Polymer Journal*, 123. DOI: 10.1016/j.eurpolymj.2019.109454
43. Baghel A. S., Jaiswal Y., Kumar A (2020). Pd(II)-Catalyzed One-pot Multiple C-C bond Formation: En route Synthesis of Succinimide-fused-unsymmetrical-9,10-Dihydrophenanthrenes from Aryl Iodides and Maleimides. *Org. Letter*, 22(5), 1908. DOI: 10.1021/acs.orglett.0c00255
44. Alam, A., Hassan, A., Bera, R. and Das, N. (2020). Silsesquioxane-based and triptycene-linked nanoporous polymers (STNPs) with a high surface area for CO₂ uptake and efficient dye removal applications. *Materials Advances*, 1 (09), 3406. DOI: 10.1039/D0MA00672F.
45. Goswami, S., Sahoo, J., Paul, S.K. Rao, T.R., and Mahapatra, S. (2020). Effect of Reagent Vibration and Rotation on the State-to-State Dynamics of the Hydrogen Exchange Reaction, H + H₂ ⇌ H₂ + H. *Journal of Physical Chemistry A*, 124(45), 9343-9359. DOI: 10.1021/acs.jpca.0c06707

Civil and Environmental Engineering

HEAD: DR. RAMAKRISHNA BAG



DR. AMARNATH HEGDE

Assistant Professor

Geotechnical Engineering



DR. ARVIND KUMAR JHA

Assistant Professor

Geotechnical Engineering



DR. AVIK SAMANTA

Assistant Professor

Structural Engineering



DR. BACHU ANILKUMAR

Assistant Professor

Transportation Engineering



DR. KOUSHIK ROY

Assistant Professor

Structural Engineering



DR. OM PRAKASH

Assistant Professor

Water Resources Engineering



DR. PRADIPTA CHAKRABORTY

Assistant Professor

Geotechnical Engineering

**DR. RAMAKRISHNA BAG****Assistant Professor**

Geotechnical Engineering

**DR. SOURAV GUR****Assistant Professor**

Structural Engineering

**DR. SUBRATA HAIT****Associate Professor**

Environmental Engineering

**DR. SUDHIR VARMA****Assistant Professor**

Transportation Engineering

**DR. SYED K K HUSSAINI****Assistant Professor**

Transportation Engineering

**DR. TRISHIKHI RAYCHOUDHURY****Assistant Professor**

Environmental Engineering

**DR. VAIBHAV SINGHAL****Assistant Professor**

Structural Engineering



DR. VISHAL DESHPANDE

Assistant Professor

Water Resources Engineering

Member - Professional Bodies

1. Amarnath Hegde (2017) The Institution of Engineers(India)
2. Amarnath Hegde (2017) Indian Science Congress Association
3. Amarnath Hegde (2019) American Society of Civil Engineers (ASCE)
4. Amarnath Hegde (2020) Indian Society of Earthquake Technology (ISET)
5. Amarnath Hegde (2017) International Society for Soil Mechanics and Geotechnical Engineering(ISSMGE)
6. Amarnath Hegde (2014) Indian Geotechnical Society (IGS)
7. Amarnath Hegde (2013) International Geosynthetics Society (IGS)
8. Avik Samanta (2021) ASCE
9. Avik Samanta (2021) EERI
10. Avik Samanta (2014) Indian Society of Earthquake Technology
11. Dr. Arvind Kumar Jha (2008) Nepal Engineers Association
12. Dr. Arvind Kumar Jha (2020) Indian Society of Earthquake Technology
13. Dr. Arvind Kumar Jha (2020) Nepal Geotechnical Society
14. Dr. Arvind Kumar Jha (2019) ASCE Geo-Institute Soil Improvement Committee
15. Dr. Arvind Kumar Jha (2016) Indian Geotechnical Society
16. Dr. Arvind Kumar Jha (2016) American Society of Civil Engineers (ASCE)
17. Dr. Arvind Kumar Jha (2008) Nepal Engineering Council
18. Dr. Bachu Anilkumar (2019) Institute of Electrical and Electronics Engineers
19. Dr. Bachu Anilkumar (2020) Indian Roads Congress
20. Dr. Bachu Anilkumar (2020) Transportation Research Group of India
21. Dr. Sourav Gur (2021) The Institution of Engineers (India)
22. Om Prakash (2020) International Association of Hydrogeologists
23. Om Prakash (2020) American Society of Civil Engineers ASCE
24. Pradipta Chakraborty (2003) Indian Society of Earthquake Technology
25. Pradipta Chakraborty Indian Geotechnical Society
26. Subrata Hait (2012) Institution of Engineers (India)
27. Subrata Hait (2020) International Association for Water, Environment, Energy, And Society (IAWEES)
28. Subrata Hait (2020) International Solid Waste Association (ISWA)
29. Subrata Hait (2014) International Water Association (IWA)
30. Subrata Hait (2014) American Society of Civil Engineers (ASCE)
31. Sudhir Varma (2020) State Technical Agency, PMGSY-Bihar
32. Sudhir Varma (2018) Indian Road Congress
33. Syed Khaja Karimullah Hussaini (2021) International Society for Soil Mechanics and Geotechnical Engineering
34. Syed Khaja Karimullah Hussaini (2021) American Association of Civil Engineers
35. Syed Khaja Karimullah Hussaini (2019) Indian Geotechnical Society
36. Vaibhav Singhal (2020) CED-39, Bureau of Indian Standards
37. Vaibhav Singhal (2020) American Society of Civil Engineers
38. Vaibhav Singhal National Information Centre of Earthquake Engineering

Member - Editorial Board

1. Amarnath Hegde (2019) Member - Transportation and Transit Systems, *Frontiers in Built Environment*
2. Dr. Arvind Kumar Jha (2020) Editorial Board Member - *Trends in Transport Engineering and Applications (TTEA)*
3. Dr. Arvind Kumar Jha (2018) Editorial Board Member - *International Journal of Structural Engineering and Analysis*
4. Dr. Arvind Kumar Jha (2018) Editorial Board Member - *International Journal of Geological and Geotechnical Engineering*
5. Dr. Arvind Kumar Jha (2018) Editorial Board Member - *International Journal of Concrete Technology*
6. Dr. Arvind Kumar Jha (2020) Editorial Board Member - *Recent Trends in Civil Engineering & Technology (RTCET)*
7. Dr. Arvind Kumar Jha (2020) Editorial Board Member - *Journal of Geotechnical Engineering (JoGE)*
8. Subrata Hait (2020) Academic Editor - *PLOS ONE*
9. Subrata Hait (2020) Member, Editorial Board - *SN Applied Sciences*
10. Syed Khaja Karimullah Hussaini (2021) Review Editor - *Frontiers in Built Environment-Transportation and Transit System*

Awards & Honours

1. Amarnath Hegde (2020) Reviewer of the year 2019 (non EBM), *Indian Geotechnical Journal*

Sponsored Research Projects

1. Bio-electrochemical Analysis and Systematic Enhancements in Microbial Fuel Cells for Bioelectricity Generation (Department of Biotechnology, Govt. of India, Rs.14.20 Lakhs) (PI : Dr. Subrata Hait)
2. Designing Disaster Preparedness Training Modules using Indigenous Knowledge and Increasing Community Awareness through Contextualized Techniques in Bi (ICSSR-IMPRESS, Rs.5.25 Lakhs) (PI : Dr. Sweta Sinha, Co-PI : Dr Smriti Singh, Dr Vaibhav Singhal)
3. Experimental and Numerical Investigation of Interlocking Details for Stone Masonry under Quasi-Static Cyclic Loading (Building Construction Department, Patna, Rs.9.58 Lakhs) (PI : Dr. Vaibhav Singhal)
4. Experimental evaluation of THM processes in smectite clay and their impact on key barrier functions (BRNS, Rs.35.47 Lakhs) (PI : Dr. Ramakrishna Bag)
5. In-situ remediation of arsenic by ferrous sulfide under heterogeneous porous media: Upscaling effect and evaluation of long-term fate (DST-WTI, Rs.55.40 Lakhs) (PI : Dr. Trishikhi Raychoudhury)
6. Performance Assessment of Roads Constructed using waste plastics (NRIDA, Rs.20.50 Lakhs) (PI : Dr. Sudhir Varma)
7. Robust and Reliability Based Design Optimization and Performance Assessment of Superelastic Shape Memory Alloy (SMA) Damper for Seismic Vibration Cont (SERB, Rs.16.72 Lakhs) (PI : Dr. Sourav Gur)
8. Seismic design and performance verification of confined masonry walls for medium-rise buildings (Science and Engineering Research Board (SERB-DST), Rs.26.40 Lakhs) (PI : Dr. Vaibhav Singhal)
9. Seismic Strengthening of Unreinforced Masonry Buildings using Ferrocement Bands (Council of Scientific & Industrial Research (CSIR), Rs.28.90 Lakhs) (PI : Dr. Vaibhav Singhal)

Consultancy Projects

- Balance work of starter Ash Dyke Stage - II NTPC Barh (NTPC Barh, Rs.1.92 Lakhs) Consultant Name: Dr. Arvind Kumar Jha, Dr. Amarnath Hegde, Dr. Ramakrishna Bag, Dr. Pradipta Chakraborty.
- Confirmation of Structural Soundness of Pre-cast CC Plate Boundary Walls (Food Corporation of India, Patna, Rs.1.46 Lakhs) Consultant Name: Dr. Vaibhav Singhal
- Consultancy services for ANAS S.p.A Qatar Branch for Quality Assurance/Quality Control Pavement Consultancy Services Project from The State of Qatar (ANAS S.p.A. Qatar Branch, Rs.36.75 Lakhs) Consultant Name: Dr. Sudhir Varma
- Design checking and recommendation of raft and pile foundation for Sai Kripa Apartment (Aura Construction, Rs.3.54 Lakhs) Consultant Name: Dr. Sourav Gur, Dr. Ramakrishna Bag
- Design of Coarse Filters for Ash Dyke Package of NTPC Barh (NTPC – Barh, Rs.1.15 Lakhs) Consultant Name: Dr. Arvind Kumar Jha, Dr. Amarnath Hegde, Dr. Ramakrishna Bag, Dr. Pradipta Chakraborty.
- Design of Filter for Ash Dyke Package of NTPC Barh (NTPC – Barh, Rs.2.30 Lakhs) Consultant Name: Dr. Arvind Kumar Jha, Dr. Amarnath Hegde, Dr. Ramakrishna Bag, Dr. Pradipta Chakraborty.
- Design Vetting of Sewer network & Allied Structures, STP and I & D Allied Works for Chhapra Town under Namami Gange Program (Chevrox Constructions Private Limited, 201, Lalita Nikunj Aptment, Bengali Road, Mithapur Phulwari,, Rs.6.64 Lakhs) Consultant Name: Dr. Arvind Kumar Jha; Dr. Subrata Hait; Dr. Vaibhav Singhal
- Design Vetting of Sewerage Network and Allied Structures at Chhapra, Bihar (Chevrox Construction Pvt. Ltd., Rs.14.75 Lakhs) Consultant Name: Dr. Arvind Jha, Dr. Subrata Hait and Dr. Vaibhav Singhal
- Liquefaction Analysis for Elevated Corridor from Mithapur to Kankarbagh via Karbigahiya-Chiraiyatand including Mithapur Rotary in Patna (Bihar Rajya Pul Nirman Nigam Ltd, Patna, Rs.4.60 Lakhs) Consultant Name: Dr. Amarnath Hegde, Dr. Arvind Jha, Dr. Ramakrishna Bag, Dr. Pradipta Chakraborty
- One time Visit and Visual Inspection for a building at NIPER, Hajipur (NIPER-Hajipur, Rs.1.11 Lakhs) Consultant Name: Dr. Koushik Roy, Dr. Sourav Gur and Dr. Arvind Kumar Jha
- Proof Checking of Structural Design for Construction of constable barrack at New Police Line, Patna (Bihar Police Building Construction Corporation, Government of Bihar, Patna, Rs.6.00 Lakhs) Consultant Name: Dr. Pradipta Chakraborty, Dr. Ramakrishna Bag, Dr. Amarnath Hegde, Dr. Koushik Roy, Dr. Avik Samanta
- Review of Pavement design for NHAI road Project Simaria to Khagaria section of NH-31 (Punj Lloyd Ltd, Rs.4.30 Lakhs) Consultant Name: Dr. Syed K. K. Hussaini, Dr. Sudhir Varma
- Review of Structural Design of Pre-stressed Precast Concrete Element (Shapoorji Palonji and Company Private Limited, Rs.1.62 Lakhs) Consultant Name: Dr. Vaibhav Singhal
- Seismic Strengthening and Retrofitting of Bihar State Chief Minister's residence at 1-Anne Marg, Patna (Building Construction Department, Rs.5.16 Lakhs) Consultant Name: Dr. Vaibhav Singhal
- State specific Action Plan for water sector in Bihar (Water and Land Management institute (WALMI) Patna, Rs.38.64 Lakhs) Consultant Name: Dr. Vishal Deshpande, Co-consultant: Dr. Ramakrishna Bag, Dr. Sudhir Varma
- State Technical Agency Consultancy services for PMGSY Roads (National Rural Infrastructure Development Agency, Ministry of Rural Development, Rs.0.00 Lakhs) Consultant Name: Dr. Sudhir Varma, Co-consultant: Dr. Ramakrishna Bag, Dr. Koushik Roy, Dr. Subrata Hait
- Structural design and drawing of civil structures of Ganga River Front Development (Urban Development and Housing Department, GoB, Bihar, Rs.5.50 Lakhs) Consultant Name: Dr. Syed K. K. Hussaini and Dr. Avik Samanta
- Structural Design Review of Budha Smriti Stupa and Museum at Vaishali, Bihar (Building Construction Department, Rs.17.25 Lakhs) Consultant Name: Dr. Vaibhav Singhal and Dr. Koushik Roy
- Technical Vetting of Detailed Project Report of Budhanath Ghat Development Project of Bhagalpur Smart City (Bhagalpur Smart City Limited, Bhagalpur Municipal Corporation, Bihar, Rs.1.62 Lakhs) Consultant Name: Dr. Sudhir Varma & Dr. Subrata Hait

20. Technical Vetting of Redevelopment of Townhall, E-Toilet, Night Shelter Projects of Bhagalpur Smart City Limited (Bhagalpur Smart City Limited, Nagar Nigam Campus, Bhagalpur- 812001, Rs.5.07 Lakhs) Consultant Name: Dr. Sudhir Varma
21. Third Party Inspection of Ongoing Projects Related to National Mission for Clean Ganga (Urban Development and Housing Department, Govt. of Bihar, Rs.180.00 Lakhs) Consultant Name: Dr. Amarnath Hegde, Dr. Sudhir Varma, Dr. Syed K.K. Hussaini, Dr. Avik Samanta & Dr. Subrata Hait
22. Third Party Quality Assurance (TPQA) in Up-gradation of Patna Medical College & Hospital, Patna under PMSSY (Phase-IV) (Central Public Works Department (CPWD) PATNA, Rs.25.97 Lakhs) Consultant Name: Dr. Arvind Kumar Jha; Dr. Ramakrishna Bag, Dr. Koushik Roy, Dr. Sourav Gur, Dr. Vishal Deshpande, Dr. Bachu Anilkumar
23. Vetting of structural design and drawing of civil structures for Ganga river front development (BUIDCO, Rs.5.50 Lakhs) Consultant Name: Dr. Avik Samanta, Dr. Syed K.K. Hussaini
24. Vetting of structural drawing (Singhal Enterprises, Rs.2.10 Lakhs) Consultant Name: Dr. Avik Samanta, Dr. Sudhir Varma
25. Vetting the Structural and Geotechnical Design of ISBT Patna (Part 2) (Shapoorji Pallonji & Company Pvt, Mumbai, Rs.2.50 Lakhs) Consultant Name: Dr. Vaibhav Singhal

Invited Lectures by Faculty Members

1. Advances and Applications Geocells by Amarnath Hegde (Sardar Vallabhbhai National Institute of Technology Surat)
2. Advances and Applications of Geosynthetics in Sustainable Infrastructure by Amarnath Hegde (College of Engineering Pune)
3. Different Application of Geosynthetics by Amarnath Hegde (Dr Sudhir Chandra Sur Degree Engineering College, Kolkata)
4. Finite Element Modelling of Geo-structures by Amarnath Hegde (National Institute of Technology Uttarakhand)
5. Public Transit and Its Role in Urban Mobility by Dr. Bachu Anilkumar (TKM College of Engineering, Kollam, Kerala)
6. Deep Learning – Just Data or Domain Knowledge adds Value? by Dr. Bachu Anilkumar (Webinar Series of Transportation Research Group of India)
7. Vibration Isolation using Geosynthetics by Amarnath Hegde (National Institute of Technology Surathkal)
8. Seawater Intrusion in Coastal Aquifers by Om Prakash (Dr. Sudhir Chandra Sur Degree Engineering College)
9. Groundwater Modelling by Om Prakash (Dr. Sudhir Chandra Sur Degree Engineering College)
10. Transport Behavior of Nanoparticles in the Porous Media: Possibility of Risk of Groundwater Contamin by Trishikhi Raychoudhury (IIT Delhi and IIT Madras)
11. Advances, Challenges and Scope in Soil Stabilization using Chemical and Waste Geomaterials by Arvind Kumar Jha (NIT Hamirpur, one-week E-Short Term Course (e-STC), on “Recent Advances in Geotechnical Engineering (RAGE-2021))
12. Behaviour of Chemically Stabilized Problematic Soils by Arvind Kumar Jha (Expert Lecture on 5-day webinar “Recent Advances and Challenges in Geotechnical Engineering” an Industry Academia Interaction Initiative by Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, India)
13. Radioactive Waste Disposal – Scope and Opportunities of Civil Engineers by Ramakrishna Bag (Abacus Institute of Engineering and Management, Magra, Hoogly, West Bengal)
14. Confinement of Radioactive Waste - Deep Geological Repository by Ramakrishna Bag (NIT Warangal (Short Term Course : Sustainable Engineered Waste Barrier Systems (SEWBS))
15. Sustainability of Metallurgical Recovery of Metals from E-Waste: A Circular Economy Perspective by Subrata Hait (Dr. N.G.P. Institute of Technology, Coimbatore, Tamil Nadu)
16. Sustainability of Metal Recovery from E-waste for Circular Economy: Challenges and Opportunities by Subrata Hait (Brainware Group of Institutions, Kolkata, West Bengal)
17. Towards Circular Economy in E-waste Recycling via Metal Recovery by Subrata Hait (SVNIT Surat, Gujarat)

18. Metal Recycling from E-waste for Circular Economy by Subrata Hait (Dr. Sudhir Chandra Sur Degree Engineering College, Kolkata, West Bengal)
19. High-growth Membrane Bioreactor for Wastewater Treatment for Resource Recovery by Subrata Hait (Dr. Sudhir Chandra Sur Degree Engineering College, Kolkata, West Bengal)
20. Metallurgical Recovery of Metals from E-waste by Subrata Hait (Dr. Sudhir Chandra Sur Degree Engineering College, Kolkata, West Bengal)
21. Forgotten Art: Indigenous/Traditional Construction Techniques for Earthquake Resistant Structures by Vaibhav Singhal
22. Confined Masonry: An Alternative Earthquake Resistant Housing by Vaibhav Singhal (Faculty Development Program 2020)
23. Learning from the Performance of Structures in Past Earthquakes by Vaibhav Singhal (Faculty Development Program 2020)
24. Seismic Evaluation and Retrofitting of Reinforced Concrete and Masonry Buildings by Vaibhav Singhal (Faculty Development Program 2020)
25. Seismic Evaluation and Retrofitting of Reinforced Concrete by Vaibhav Singhal (Short Term Training Programme)
26. Seismic Evaluation and Retrofitting of Reinforced Concrete Structures by Vaibhav Singhal (Recent Advances in Infrastructure Technology (RAIT-2021), NIT Sikkim)
27. Recent Advancement in Structural Health Monitoring by Koushik Roy (CBIT, Hyderabad)
28. Vibration-based Monitoring of Heritage Structures by Koushik Roy (NIT, Sikkim (Ravangla-737139))
29. Soil Liquefaction in Heterogeneous Soil: Mechanism and Assessment by Pradipta Chakraborty (Webinar organized by Indian Geotechnical Society Kolkata Chapter)
30. Structural Condition Evaluation of Pavements using Falling Weight Deflectometer by Sudhir Varma (NIT Surathkal, (AICTE Training And Learning (ATAL Academy))
31. Structural Condition Evaluation of Pavements using Falling Weight Deflectometer by Sudhir Varma (IIT Madras)
32. Maintenance Practice in USA by Sudhir Varma (Delhi, Indian Road Congress)

Journal Publications (Scopus – Indexed)

1. Agarwal M., Deshpande V., Katoshevski D., Kumar B. (2021). A novel Python module for statistical analysis of turbulence (P-SAT) in geophysical flows. Scientific Reports, 11(01), DOI: 10.1038/s41598-021-83212-1
2. Kumar H., Varma S. (2021). A review on utilization of steel slag in hot mix asphalt. International Journal of Pavement Research and Technology, 14(02), 332-342. DOI: 10.1007/s42947-020-0025-0
3. Khadhir A., Anil Kumar B., Vanajakshi L.D. (2021). Analysis of global positioning system based bus travel time data and its use for advanced public transportation system applications. Journal of Intelligent Transportation Systems: Technology, Planning, and Operations, 25(01), 58-76. DOI: 10.1080/15472450.2020.1754818
4. Das A., Chakraborty P., Popescu R. (2021). Assessment of lumped particles effect on dynamic behaviour of fine and medium grained sands. Bulletin of Earthquake Engineering, 19(02), 745-766. DOI: 10.1007/s10518-020-01012-w
5. Chakraborty P., Nilay N., Das A. (2021). Effect of Silt Content on Liquefaction Susceptibility of Fine Saturated River Bed Sands. International Journal of Civil Engineering, 19(05), 549-561. DOI: 10.1007/s40999-020-00574-9
6. Gundavaram D., Hussaini S.K.K. (2021). Influence of Coal Fouling on the Shear Behavior of Elastan-Treated Railroad Ballast. Journal of Materials in Civil Engineering, 33(09). DOI: 10.1061/(ASCE)MT.1943-5533.0003895
7. Hussaini S.K.K., Sweta K. (2021). Investigation of deformation and degradation response of geogrid-reinforced ballast based on model track tests. Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, 235(04), 505-517. DOI: 10.1177/0954409720944687

8. Gupta N., Trivedi A., Hait S. (2021). Material composition and associated toxicological impact assessment of mobile phones. *Journal of Environmental Chemical Engineering*, 9(01). DOI: 10.1016/j.jece.2020.104603
9. Kumar B.A., Mothukuri S., Vanajakshi L. (2021). Numerical Stability of Conservation Equation for Bus Travel Time Prediction Using Automatic Vehicle Location Data. *International Journal of Intelligent Transportation Systems Research*, 19(01), 141-154. DOI: 10.1007/s13177-020-00230-5
10. Saawarn B., Hait S. (2021). Occurrence, fate and removal of SARS-CoV-2 in wastewater: Current knowledge and future perspectives. *Journal of Environmental Chemical Engineering*, 9(01). DOI: 10.1016/j.jece.2020.104870
11. Gundupalli S.P., Shukla R., Gupta R., Hait S., Thakur A. (2021). Optimal Sequence Planning for Robotic Sorting of Recyclables from Source-Segregated Municipal Solid Waste. *Journal of Computing and Information Science in Engineering*, 21(01). DOI: 10.1115/1.4047485
12. Parashar N., Hait S. (2021). Plastics in the time of COVID-19 pandemic: Protector or polluter? *Science of the Total Environment*, 759. DOI: 10.1016/j.scitotenv.2020.144274
13. Bag R., Mandal M., Singhal V. (2021). Rectification of the Tilt and Shift of Well Foundation: A Numerical and Analytical Solution. *Indian Geotechnical Journal*. DOI: 10.1007/s40098-020-00477-5
14. Anjneya K., Roy K. (2021). Response surface-based structural damage identification using dynamic responses. *Structures*, 29, 1047-1058. DOI: 10.1016/j.jstruc.2020.11.033
15. Tripathy D., Singhal V. (2021). Strengthening of weak masonry assemblages using wire reinforced cementitious matrix (WRCM) for shear and flexure loads. *Construction and Building Materials*, 277. DOI: 10.1016/j.conbuildmat.2020.122223
16. Gracious, R., Kumar, B.A. and Vanajakshi, L. (2021). Characterizing Bus Travel Time using Advanced Data Visualization Techniques. *Transportation in Developing Economies: A Journal of the Transportation Research Group of India (TRG)*, 7(01). DOI: 10.1007/s40890-020-00109-w
17. Borah, B., Kaushik, H.B., and Singhal, V. (2021). Development of a Novel V-D Strut Model for Seismic Analysis of Confined Masonry Buildings. *Journal of Structural Engineering*, 147(03). DOI: 10.1061/(ASCE)ST.1943-541X.0002941
18. Kant L., Samanta A. (2020). A review and comparative study of boundary conditions used for wave transmission in soil with application in free field response. *Jordan Journal of Civil Engineering*, 14(04), 548-561.
19. Hussaini S.K.K., Sweta K. (2020). Application of Geogrids in Stabilizing Rail Track Substructure. *Frontiers in Built Environment*, 6. DOI: 10.3389/fbuil.2020.00020
20. Priya A., Hait S. (2020). Biometallurgical recovery of metals from waste printed circuit boards using pure and mixed strains of *Acidithiobacillus ferrooxidans* and *Acidiphilium acidophilum*. *Process Safety and Environmental Protection*, 143, 262-272. DOI: 10.1016/j.psep.2020.06.042
21. Anil Kumar B., Gracious R., Gangrade C., Vanajakshi L. (2020). City-level route planning with time-dependent networks. *Current Science*, 119(04), 680-690. DOI: 10.18520/cs/v119/i4/680-690
22. Gur S., Frantziskonis G.N. (2020). Design of porous and graded NiTi smart energy absorbers considering synthetic uncertainty in parameters. *Journal of Intelligent Material Systems and Structures*. DOI: 10.1177/1045389X20977908
23. Sweta K., Hussaini S.K.K. (2020). Effect of geogrid on deformation response and resilient modulus of railroad ballast under cyclic loading. *Construction and Building Materials*, 264. DOI: 10.1016/j.conbuildmat.2020.120690
24. Venkateswarlu H., Hegde A. (2020). Effect of infill materials on vibration isolation efficacy of geocell-reinforced soil beds. *Canadian Geotechnical Journal*, 57(09), 1304-1319. DOI: 10.1139/cgj-2019-0135
25. Venkateswarlu H., Hegde A. (2020). Effect of Influencing Parameters on the Vibration Isolation Efficacy of Geocell Reinforced Soil Beds. *International Journal of Geosynthetics and Ground Engineering*, 6(02). DOI: 10.1007/s40891-020-00205-2

26. Jadda K., Bag R. (2020). Effect of initial compaction pressure and elevated temperature on swelling pressure of two Indian bentonites. *Environmental Earth Sciences*, 79(09). DOI: 10.1007/s12665-020-08937-01
27. Chakraborty P., Roshan A.R., Das A. (2020). Evaluation of Dynamic Properties of Partially Saturated Sands Using Cyclic Triaxial Tests. *Indian Geotechnical Journal*, 50(06), 948-962. DOI: 10.1007/s40098-020-00433-3
28. Puri V., Chakraborty P., Anand S. (2020). Flexural behaviour of bamboo-reinforced wall panels with varying fly ash content. *Magazine of Concrete Research*, 72(09), 434-446. DOI: 10.1680/jmacr.18.00253
29. Jain A.K., Jha A.K., Shivanshi (2020). Geotechnical behaviour and micro-analyses of expansive soil amended with marble dust. *Soils and Foundations*, 60(04), 737-751. DOI: 10.1016/j.sandf.2020.02.013
30. Chakraborty A., Prakash O. (2020). Identification of clandestine groundwater pollution sources using heuristics optimization algorithms: a comparison between simulated annealing and particle swarm optimization. *Environmental Monitoring and Assessment*, 192(12), DOI: 10.1007/s10661-020-08691-7
31. Jain A.K., Jha A.K., Shivanshi (2020). Improvement in Subgrade Soils with Marble Dust for Highway Construction: A Comparative Study. *Indian Geotechnical Journal*, 50(02), 307-317. DOI: 10.1007/s40098-020-00423-5
32. Jha A.K., Kumar D., Sivapullaiah P.V. (2020). Influence of Fly Ash on Geotechnical Behaviour of Red Mud: A Micro-mechanistic Study. *Geotechnical and Geological Engineering*, 38(06), 6157-6176. DOI: 10.1007/s10706-020-01425-z
33. Das A., Chakraborty P. (2020). Influence of Motion Energy and Soil Characteristics on Seismic Ground Response of Layered Soil. *International Journal of Civil Engineering*, 18(07), 763-782. DOI: 10.1007/s40999-020-00496-6
34. Venkateswarlu H., Hegde A. (2020). Isolation Prospects of Geosynthetics Reinforced Soil Beds Subjected to Vibration Loading: Experimental and Analytical Studies. *Geotechnical and Geological Engineering*, 38(06), 6447-6465. DOI: 10.1007/s10706-020-01447-7
35. Dey S., Prakash O. (2020). Managing saltwater intrusion using conjugate sharp interface and density dependent models linked with pumping optimization. *Groundwater for Sustainable Development*, 11. DOI: 10.1016/j.gsd.2020.100446
36. Gundavaram D., Hussaini S.K.K. (2020). Performance evaluation of polyurethane-stabilized railroad ballast under direct shear conditions. *Construction and Building Materials*, 255. DOI: 10.1016/j.conbuildmat.2020.119304
37. Kumar P., Samanta A. (2020). Seismic fragility assessment of existing reinforced concrete buildings in Patna, India. *Structures*, 27, 54-69. DOI: 10.1016/j.jstruc.2020.05.036
38. Pasi J., Samanta A. (2020). Seismic Retrofitting Strategies for Soft-Ground-Storeyed Building. *Journal of The Institution of Engineers (India): Series A*, 101(04), 771-785. DOI: 10.1007/s40030-020-00473-1
39. Tripathy D., Meghwal P., Singhal V. (2020). Strengthening of Lime Mortar Masonry Wall Joints Using Fiber-Reinforced Cementitious Matrix. *Journal of Composites for Construction*, 24(06). DOI: 10.1061/(ASCE)CC.1943-5614.0001086
40. Lade A.D., Deshpande V., Kumar B. (2020). Study of flow turbulence around a circular bridge pier in sand-mined stream channel. *Proceedings of the Institution of Civil Engineers: Water Management*, 173(05), 217-237. DOI: 10.1680/jwama.19.00041
41. Jadda K., Bag R. (2020). Variation of swelling pressure, consolidation characteristics and hydraulic conductivity of two Indian bentonites due to electrolyte concentration. *Engineering Geology*, 272. DOI: 10.1016/j.enggeo.2020.105637
42. Mawdkhap, L.L., Kumari, R., Kumar, M., Sinha, S., Singh, S. and Singhal, V. (2020). Importance of Contextualized Communication for Better Disaster Preparedness and Disaster Risk Reduction: A Case Study from Bihar. *International Journal of Interdisciplinary and Multidisciplinary Studies*, 7(02), 03-122.
43. Sebaaly, H., Riviera, P.P., Varma, S., Maina, J.W., and Santagata, E. (2020). Performance-based assessment of rutting resistance of asphalt mixes designed for hot climate regions. *International Journal of Pavement Engineering*. DOI: 10.1080/10298436.2020.1858484

Conference Papers/Book Chapters

1. Chakraborty, A., Prakash, O., (2020). Characterization of Groundwater Pollution Sources By Kriging Based Linked Simulation Optimization. 6th Int. Conference on Structure, Engineering & Environment (SEE). ISBN: 978-4-909106056 C3051.
2. Gundavaram, D. and Syed K. K. Hussaini, S.K.K. (2020). Effect of coal fouling on railroad ballast under direct shear loading conditions. Proceedings of the 2020 Joint Rail Conference, St. Louis, MO, USA.
3. Jain, A.K., Jha, A.K. and Akhtar, M.P. (2021). Effect of electrolyte concentrations on swelling behaviour of sand- and marble dust-bentonite mixes. International Conference on Community based Research and Innovations in Civil Engineering (CBRICE-2021), Manipal University Jaipur, Rajasthan.
4. Borah, B., Kaushik, H.B. and Singhal, V. (2021). Effectiveness of Code Approaches in Seismic Design of Confined Masonry Walls. 17th World Conference on Earthquake Engineering, Sendai, Japan.
5. Chakraborty, P. and Das, A. (2020). Free field ground vibration due to ground improvement induced vibration. Computer Methods and Advances in Geomechanics (IACMAG-2020), Torino, Italy.
6. Chakraborty, A. and Prakash, O. (2021). Identification of clandestine groundwater pollution source locations and their release flux history. IOP Conference Series: Earth and Environmental Science, 626(01), DOI: 10.1088/1755-1315/626/1/012003.
7. Upadhyaya, S., Gogineni, N. and Gur, S. (2021). Performance assessment of SMA-LRB isolated building structure due to underground blast induced ground motion. Advances in Construction Technology and Management – 2021 (ACTM-2021), Maharashtra, India.
8. Shivanshi, Jha, A.K. and Akhtar, M.P. (2021). Physical and Geotechnical Perspectives of Gypsum on Lime Stabilized Expansive Soil: A Critical Appraisal, International Conference on Community based Research and Innovations in Civil Engineering (CBRICE-2021), Manipal University Jaipur, Rajasthan.
9. Kumar, P. and Samanta, A. (2021). Seismic Fragility Assessment of Existing 9 Storey Reinforced Concrete (RC) Buildings in Patna, India. The 7th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, (ICRAGEE-2020), IISc Bangalore.
10. Gur, S., Singh, P. and Roy, K. (2020). Seismic Response of Adjacent Building Structure Connected with Superelastic Damper: Comparison With Yield Damper. XI International Conference on Structural Dynamics (EASD Procedia EURO DYN 2020), Athens, Greece.
11. Singhal, V., Tripathy, D. and Kaushik, H.B. (2021). Seismic Strengthening of Heritage Masonry Building: A Case Study. 17th World Conference on Earthquake Engineering, Sendai, Japan.
12. Bandyopadhyay, T.S., Chakraborty, P. and Hegde, A. (2020). Shake Table Studies to Assess the Effect of Reinforced Backfill Parameters on Dynamic Response of MSE Walls. 7th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics (ICRAGEE 2020). IISc Bangalore.
13. Singhal, V., Tripathy, D. and Meghwal, P. (2021). Shear and Flexure Behaviour of Historical Lime Masonry Strengthened with Fibre Reinforced Cementitious Matrix. 17th World Conference on Earthquake Engineering. Sendai, Japan.
14. Das, A., and Chakraborty, P. (2020). Simple statistical models to predict the cyclic behaviour of cohesionless soil in quaternary alluvium. 3rd Conference of the Arabian Journal of Geosciences (CAJG 2020). Tunisia.
15. Chaudhary, P.K., Anjneya, K. and Roy, K. (2020). Spectral Element Method for Damage Localization in Non-Uniform Structures with Parametric Uncertainty. 5th International Conference on Civil Structural and Transportation Engineering (ICCSTE 2020), Ottawa, Canada.
16. Gundavaram, D. and Hussaini, S.K.K. (2021). Stabilization of Railroad Ballast using Polyurethane under various

- Coal Fouling Conditions. Proceedings of the 2021 Joint Rail Conference, JRC 2021, St. Louis, MO, USA. DOI: 10.1115/JRC2021-58396
17. Banik, S., Kumar, B.A. and Vanajakshi, L. (2021). Stream Travel Time Reliability using GPS Equipped Probe Vehicles. 100th Annual Meeting of the Transportation Research Board, Washington D.C., USA.
18. Tripathy, D. and Singhal, V. (2021). Strengthening of Mud Masonry Assemblages using Wire Reinforced Cementitious Matrix (WRCM). 17th World Conference on Earthquake Engineering. Sendai, Japan.
19. Das, S. and Roy, K. (2020). Structural Damage Quantification Using Flexibility Matrix Based Approach. International Conference on Recent Advances in Computational and Experimental Mechanics (ICRACEM 2020), IIT Kharagpur, India – 721302.
20. Reddy, S., and Kumar, B.A. (2020). Travel Time Variability Analysis of Public Transit Buses using GPS Data. 13th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries, IIT Bombay, Mumbai.

Computer Science and Engineering

HEAD: DR. JIMSON MATHEW



DR. ABYAYANANDA MATTI

Assistant Professor

Online Algorithms, Complex Networks, Social Networks



DR. ARIJIT MONDAL

Assistant Professor

CAD for VLSI, Analog EDA



DR. ASIF EKBAL

Associate Professor

Natural Language Processing, Data Mining and Machine Learning Applications, Information Extraction, Text Mining



DR. JIMSON MATHEW

Associate Professor

Fault Tolerant Computing, VLSI Design and Methodologies, Deep learning Architectures and Applied Time series Analysis



DR. JOYDEEP CHANDRA

Assistant Professor

Online Social Networks, Complex Networks, Machine Learning



DR. MAYANK AGARWAL

Assistant Professor

Wireless Network, Wi-Fi Security, Discrete Event Modeling



DR. RAJIV MISRA

Associate Professor

Distributed Systems, Cloud Computing, Big Data Computing, Consensus in Blockchain, Cloud IoT Edge Computing, Adhoc Networks and Sensor Networks



DR. RAJU HALDER

Assistant Professor

Formal Methods for Analysis and Verification, Blockchain and Smart Contract, Programming Languages, Information Systems Security



DR. SAMRAT MONDAL

Assistant Professor

Security & Privacy, Database & Data Mining Applications, and Energy management & intelligent transportation systems



DR. SOMANATH TRIPATHY

Associate Professor

Blockchain, Cloud security, IoT Security, Machine Learning security



DR. SOURAV KUMAR DANDAPAT

Assistant Professor

Wireless Networking, Mobile Social Computing, Human Computer Interaction



DR. SRIPARNA SAHA

Associate Professor

Machine Learning, Text Mining, Pattern Recognition, Multiobjective Optimization, Bio-Text Mining, Bioinformatics, Soft Computing



DR. SUMAN KUMAR MAJI

Assistant Professor

Image Processing, Machine Learning & AI, Computer Vision, Biomedical Imaging, Bioinformatics

Member - Professional Bodies

1. Asif Ekbal (2006) ACL
2. Asif Ekbal (2014) IEEE
3. Asif Ekbal (2015) ACM
4. Asif Ekbal (2019) Artificial Intelligence Standardization, Govt. of India
5. Jimson Mathew (2015) IEEE
6. Joydeep Chandra (2015) IEEE,ACM
7. Rajiv Misra (2009) IEEE
8. Raju Halder (2021) IEEE
9. Samrat Mondal (2019) IEEE
10. Somanath Tripathy (2010) IEEE
11. Somanath Tripathy (2006) Cryptology Research Society of India
12. Sriparna Saha (2017) Indian Unit for Pattern Recognition and Artificial Intelligence (IUPRAI).
13. Sriparna Saha (2016) IEEE
14. Sriparna Saha (2015) The Association of Computer, Electronics and Electrical Engineers (ACEEE),
15. Sriparna Saha (2016) Bioclues Organization (An affiliate of International Society for Computational Biology and Asia-Pacific Bioinformatics Network).
16. Sriparna Saha (2016) International Association of Computer Science and Information Technology (IACSIT)
17. Sriparna Saha (2016) International Association of Engineers (IAENG),
18. Suman Kumar Maji (2017) Indian Science Congress Association
19. Suman Kumar Maji (2020) Institution of Engineers (India)

Member - Editorial Board

1. Asif Ekbal (2019) Editorial Board Member - Machine Translation
2. Asif Ekbal (2020) Associate Editor - Springer CS
3. Asif Ekbal (2017) Associate Editor - Sadhana
4. Jimson Mathew (2021) Guest editor- Jimson Mathew - Emerging AI-enabled Techniques on Green Industrial Internet of Things
5. Jimson Mathew (2021) Guest editor- Jimson Mathew - Special issue title: Sustainable Solutions for the Internet of Things using B5G/6G-aware Edge/Fog
6. Somanath Tripathy (2019) Associate Editor - Sadhana-Academy Proceedings in Engineering Science
7. Somanath Tripathy (2019) Editor - IETE Technical review
8. Sriparna Saha (2021) Associate Editor - IEEE Internet Computing
9. Sriparna Saha (2020) Associate Editor - IETE Technical Review
10. Sriparna Saha (2017) Associate Editor - ACM Transactions on Asian and Low-Resource Language Information Processing

Awards & Honours

1. Asif Ekbal (2020) Accenture Faculty (Unrestricted gift)
2. Asif Ekbal (2020) Flipkart Faculty Gift
3. Sriparna Saha (2021) My name is included in the list of eight leading women scientists in the area of AI in India published by INDIAai which is the National AI Portal of India
4. Sriparna Saha (2020) My name is included in the list of top 2% of scientists of their main subfield discipline (Artificial Intelligence and Image Processing), across those that have published at least five papers (a survey conducted by Stanford University)
5. Rajiv Misra (2020) Session Best Paper in 5th International Conference on Internet of Things and Connected Technologies (ICIoTCT) 2020

Sponsored Research Projects

1. AI-based Tools for Women and Child Safety (Designing an APP to identify malware apps and alert user) (MHA, Rs.284.69 Lakhs) (PI : Prof. Pushpak Bhattacharyya)
2. "Microsoft AI for Health COVID-19 grant" (Microsoft, \$30,000 USD of Azure sponsorship credits for 12 month) (PI : Dr. Sriparna Saha)
3. A Computational Model for 3D Fluorescence Microscopy Super Resolution (SERB, Rs.15.09 Lakhs) (PI : Dr. Suman Kumar Maji)
4. A Platform for Cross-lingual and Multilingual Event Monitoring in Indian Languages (Imprint-1, MHRD, Rs.85.00 Lakhs) (PI : Dr. Asif Ekbal)
5. AI Based 6G Network Slicing for Multi-UAV Prototype (MeitY, Rs.63.02 Lakhs) (PI : Dr. Rajiv Misra)
6. AI based Covid-19 Binder: Discover Molecule-Structure for binding Covid-19 using Generative Adversarial Network (GAN) (Microsoft AI for Health COVID-19 grant Azure Credits of, Rs.93.00 Lakhs) (PI : Dr. Rajiv Misra and Mr. Amit Ranjan)
7. AI Driven Intelligent Tool for Personalised Risk Stratification and Early detection of Stroke (DBT, Rs.18.00 Lakhs) (PI : Dr. Jimson Mathew)
8. AI enabled dashboard to track Key Performance Indicators of State Plan of Action for children of Bihar (UNICEF, Rs.8.07 Lakhs) (PI : Dr. Mayank Agarwal,)
9. Application of Blockchain and Machine Learning for financial Transactions and end user fintech applications (Immergro Tech, Rs.7.20 Lakhs) (PI : Dr. Jimson Mathew)
10. ATL IIT AI Lab (Accenture , Rs.65.00 Lakhs) (PI : Prof. Pushpak Bhattacharyya (lead), Dr. Asif Ekbal, Dr. Sriparna Saha)
11. Autonomous Goal-Oriented and Knowledge-Driven Neural Conversational Agents (Accenture Solutions Pvt Ltd, Rs.21.00 Lakhs) (PI : Dr. Sriparna Saha and Dr. Asif Ekbal)
12. CDAC-IIT Patna Digital Forensic Center with Artificial Intelligence based Knowledge Support Tools (Meity and Govt of Bihar , Rs.91.02 Lakhs) (PI : Prof Pushpak Bhattacharyya, Co-PI: Dr Asif Ekbal, Dr Sriparna Saha, Dr Jimson Mathew, Dr Joydeep Chandra, Dr Abhayananda Maity, Dr Sourav Dandpat)
13. Centre of Excellence for Natural Language Processing-IITP (Elsevier, Rs.215.35 Lakhs) (PI : Prof. Pushpak Bhattacharyya, Co-PI: Dr. Asif Ekbal, Dr. Sriparna Saha)
14. Clandestine Malware detection for securing critical infrastructure. TIH Vertical (Speech, Video & Text Analytics) (SERB & DST, Rs.960.00 Lakhs) (PI : Prof. Pushpak Bhattacharyya)
15. Development and Implementation of AI Driven Adaptive Microgrid Control and Protection Schemes (SPARC-Scheme for Promotion of Academic and Research, Rs.33.83 Lakhs) (PI : Dr. Sanjoy Kumar Parida, Co-PI : Dr. Jimson Mathew)
16. Development of Adaptive Algorithms for Solving Many-Objective Optimization Problems: Application in Machine Learning", (Department of Science and Technology, Rs.15.00 Lakhs) (PI : Dr. Sriparna Saha)
17. Development of Lizard-like Robotic Spy Surveillance System (IMPRINT-II, Science & Engineering Research Board (SERB), DST, Govt. of India, Rs.101.50 Lakhs) (PI : Dr. Raju Halder)
18. Development of Planning and Designing Tool for Smartly Adopting Electric Vehicles in Indian Cities (DST SERB, Rs.57.42 Lakhs) (PI : Dr. Samrat Mondal)
19. Distributed EV Charge Scheduling and Consensus based control for EV Charging Network (DST-DAAD, Rs.8.82 Lakhs) (PI : Dr. Rajiv Misra)
20. Dynamic Natural Language Generation (Samsung, Bangalore, Rs.14.50 Lakhs) [PI : Asif Ekbal (lead), Sriparna Saha, Prof. Pushpak Bhattacharyya]
21. Energy efficient Cyber Security implementations for Internet of Things (DST, Rs.9.92 Lakhs) (PI : Dr. Jimson Mathew)
22. HELIOS - Hate, Hyperpartisan, and Hyperpluralism Elicitation and Observer System, (Wipro , Rs.42.00 Lakhs) (PI : Dr. Asif Ekbal)
23. Hindi to English Machine Aided Translation in Judicial Domain (Meity, Rs.77.71 Lakhs) (PI : Prof Pushpak Bhattacharyya, Dr Asif Ekbal)
24. IIT Patna Centre of Excellence in Cyber Crime Prevention Against Women and Children (Ministry of Home Affairs, Rs.284.67 Lakhs) (PI : Prof. Pushpak Bhattacharyya co-PI:

- Dr. Asif Ekbal, Dr. Sriparna Saha, Dr. Somanath Tripathy, Dr. Arijit Mondal, Dr. Jimson Mathew, Dr. Joydeep Chandra, Dr. Abhayananda Maity, Dr. Sourav Dandpat
25. IITP- Prithvi AI Research Collaboration (Prithvi AI , Rs.15.00 Lakhs) (PI : Dr. Sriparna Saha)
 26. Improving Regional Transportation Services Using GPS Data (SPARC, MHRD, Rs.53.49 Lakhs) (PI : Dr. Joydeep Chandra)
 27. Information Retrieval via Knowledge Graphs Developed for Aircraft Accidents Database and Aircraft Manuals. (Imprint2c, SERB, Rs.54.00 Lakhs) (PI : Prof. Pushpak Bhattacharyya)
 28. Knowledge Grounded Conversational System (Accenture, Rs.23.00 Lakhs) (PI : Dr. Asif Ekbal)
 29. Low-cost Energy Efficient Cloud for Cyber Physical Disaster Management Systems (DST, Rs.21.77 Lakhs) (PI : Dr. Rajiv Misra)
 30. Multi-modal Summarization (LG Soft, Rs.16.00 Lakhs) (PI : Dr. Sriparna Saha, Prof. Pushpak Bhattacharyya)
 31. Neural Machine Translation for Product Reviews (Flipkart, Rs.21.00 Lakhs (for first year)) (PI : Dr. Asif Ekbal)
 32. Privacy Preserving Smart Contract based Technique to Perform Secure Computation in Cloud Storage: Design and Analysis (SERB, Rs.6.60 Lakhs) (PI : Dr. Somanath Tripathy)
 33. Research on Sentiment Analysis and Image Recognition (Skymap, Rs.51.00 Lakhs) (PI : Pushpak Bhattacharyya (lead), Asif Ekbal, Sriparna Saha)
 34. Sentiment, Emotion, Sarcasm and Hate Speech Detection (CDOT, NEW DELHI, Rs.33.00 Lakhs) (PI : Dr. Asif Ekbal (lead), Dr. Sriparna Saha)
 35. Sevak- An Intelligent Indian Language Chatbot (Imprint, SERB, Rs.98.00 Lakhs) (PI : Dr. Asif Ekbal)

Consultancy Projects

1. Neural Network and Application Training (TCS, Rs.5.40 Lakhs) Consultant Name: Dr. Asif Ekbal

Technology Transferred

1. Accenture - Knowledge Graph Aware Response Generation : Rs. 0.00 Lakh Title: Knowledge Graph Enabled Conversation Generation; Cost: (as part of collaboration between Accenture and IITP)
2. Sentiment, Emotion, Sarcasm and Hate (SESH), CDOT (as part of the sponsored project)

Patents (filed / granted)

1. Patent Name: 2. Generating Knowledge Graph from Conversations; Patent Owner: Asif Ekbal [with Others] (Application No.: 17/313,555(US Patent) and Status: Filed)

Invited Lectures by Faculty Members

1. On Summarization Systems by Sriparna Saha (SCOTA 2021, BIT Mesra)
2. Summarization by Sriparna Saha (Banasthali Vidyapith, Rajasthan) (2020)
3. Summarization by Sriparna Saha (AICTE Sponsored ATAL – Faculty Development Program on Data Sciences, Institute of Aeronautical Engineering (IARE)) (2020)
4. Summarization by Sriparna Saha (FDP conducted by CSE Department, NIT Agartala) (2020)
5. Clustering Techniques by Sriparna Saha (five days' Workshop on Machine Learning & Deep Learning Techniques with its Applications at Central Institute of Technology Kokrajhar) (2020)
6. Authorship Attribution by Sriparna Saha (six days Faculty Development Program on Applications of Artificial Intelligence and IoT in Engineering from 01-06 February 2021 at College of Engineering Perumon, Kollam, Kerala)
7. Summarization Systems by Sriparna Saha (Faculty Development Program on ML and Big Data at Ramakrishna Mission Vivekananda Educational and Research Institute) (2020)

8. Protein Protein Interaction by Sriparna Saha (ATAL FDP on Data Science conducted by Dept. of CSE, NIT Mizoram) (2020)
9. Recent Applications of NLP by Sriparna Saha (ATAL FDP on Artificial Intelligence in Natural Processing Language at KIIT University) (2020)
10. Multiobjective Optimization by Sriparna Saha (Global Online Two Week Summer FDP on "Advanced Optimization Techniques and Hands on With MATLAB/ SCILAB at MNIT Jaipur) (2020)
11. Deep Learning by Sriparna Saha (Two talks @ Six-Days Short Term Training Programme[Phase-II] on Building Intel- Ligent Applications with Deep Learning using Pytorch conducted by the Department of Computer Science and Engineering, Rajalakshmi Institute of Technology, Chennai, Tamil Nadu) (2020)
12. Multiobjective Optimization by Sriparna Saha (Distinguished Speaker in Six days AICTE Sponsored Short Term Training Program (STTP) on Optimization Techniques: Recent Trends & Applications in Engineering organized by MCKV Institute of Engineering, October 10, 2020)
13. Summarization and Dialogue Systems by Sriparna Saha (Two talks @ NIT Rourkela, Seminar Link on Leveraging Natural Language Processing through Machines on Our Day to Day Life, October 16-17, 2020)
14. Multimodal Dialogue Systems by Sriparna Saha (Talk @ Accenture Pvt. Ltd.) (2020)
15. Summarization Systems by Sriparna Saha (Talk @ IEEE Computer Society - BITS APPCAIR Joint Webinar Series 2020)
16. Information Extraction and Dialogue Systems by Sriparna Saha (ACM NLP Winter School at DAICT) (2021)
17. Multimodal Summarization by Sriparna Saha (AI/ML Research Summit: IR, NLP & CV at Huawei Technologies India Pvt. Ltd.) (2020)
18. Summarization by Sriparna Saha (6th International Conference on ICTACSE-2021 at Malla Reddy Engineering College for Women Hyderabad)
19. Computational Approaches Leveraging Protein Interaction Information for Biomedical Tasks by Sriparna Saha (STTP on "AI and other Advances in Computational Methods for Genomics" at JNN college of Engineering, Shivamogga) (2021)
20. 802.11 Wireless Networks, Threats, Vulnerabilities and Solutions by Mayank Agarwal (IIT Bhilai) (2020)
21. Hacking WiFi Networks by Mayank Agarwal (NIT Patna and MNIT Jaipur) (2020)
22. Wifi Vulnerabilities and Solutions by Mayank Agarwal (IGIT Sarang) (2020)
23. NLP for Social Good by Asif Ekbal (Govt of India) (2020)
24. Machine Translation in Vernacular Languages by Asif Ekbal (Flipkart Data Science Conference) (2020)
25. Empathetic Conversational Artificial Intelligence by Asif Ekbal (University of Moratuwa, Srilanka) (2021)
26. Towards building an Empathetic Conversational System by Asif Ekbal (IIT Indore) (2021)
27. Empathetic Dialogue System by Asif Ekbal (IIT Indore) (2020)
28. From Unimodal to Multimodal Sentiment Analysis by Asif Ekbal (NIT Rourkela) (2020)
29. Conversational AI by Asif Ekbal (NIT Andhra Pradesh) (2020)
30. Empathetic Conversational AI by Asif Ekbal (NIT Mizoram) (2021)
31. Fine-grained and Multimodal Sentiment Analysis by Asif Ekbal (Huawei) (2020)
32. Deep Learning for Sentiment Analysis by Asif Ekbal (IIIT Gwalior) (2021)
33. Knowledge Grounded NLG by Asif Ekbal (Talk @ Accenture Pvt. Ltd.) (2020)
34. Empathetic Conversation Generation by Asif Ekbal (Huawei) (Year 2021)
35. Towards Creating Awareness on Various Cyber Threats by Samrat Mondal (Kamala Nehru College, University of Delhi) (2020)
36. Data Science Research Opportunities for Smart Cities by Samrat Mondal (Dept. of CSE, IIT BHU) (2020)
37. Intelligent integration of electric vehicle with smart grid infrastructure by Samrat Mondal (Dept of EE, IIT BHU) (2021)
38. Summarization Systems by Sriparna Saha (NPIU/ TEQIP-III Sponsored Faculty Training on Future Skill Technologies on AI-ML at IIT Indore) (2020)

39. Protein Protein Interaction by Sriparna Saha (TEQIP-III Sponsored Short-Term Course on Artificial Intelligence Driven Biomedical Data Analysis for Disease Diagnosis organized by Discipline of Electrical Engineering and Discipline of Mathematics, IIT Indore (05-10 November, 2020))
40. Computational Approaches Leveraging Protein Interaction Information for Biomedical Tasks by Sriparna Saha (IEEE EMBS SBC at IIT Kharagpur) (2021)
41. Chat bot development by Sriparna Saha (TEQIP-III sponsored FDP at IGIT Sarang) (year)
42. Deep Learning Techniques for Electronic Health Record Analysis by Sriparna Saha (Malla Reddy Engineering College for Women, Hyderabad) (2021)
43. Authorship Attribution by Sriparna Saha (TEQIP-II sponsored six days Faculty Development Program on Applications of Artificial Intelligence and IoT in Engineering from 01-06 February 2021 at College of Engineering Perumon, Kollam, Kerala)
44. Security in Decentralized Systems and Smart Contracts by Raju Halder (Invited speaker in AICTE-STTP at NIT Meghalaya) (2021)
45. Blockchain Technology: A Potential Game Changer by Raju Halder (Invited talk Organized by Department of Computer Science, Theivanai Ammal College for Women (Autonomous), Villupuram) (2021)
46. Blockchain Technology - Future of Cyber Security by Raju Halder (Invited lecture in ATAL FDP at Excel Engineering College, Tamil Nadu) (2021)
47. Robot Operating System (ROS) by Raju Halder (Invited lecture in the CEP Short Term Course on Mobile Robotics at IITP) (2020)
48. Robot Operating System (ROS) by Raju Halder (Invited lecture in ATAL FDP on Robotics at Gujarat Technological University) (2020)
49. Blockchain Technology Using Hyperledger & Ethereum by Raju Halder (Invited lectures for two days in ATAL FDP NIT Meghalaya) (2020)
50. Blockchain Architecture Design and Use Cases by Raju Halder (Invited speaker in AICTE-STTP at Gudlavalleru Engineering College (AP)) (2020)
51. Blockchain Technology by Raju Halder (Invited speaker in two TEQIP-sponsored FDPs at AKU Patna (6-10 July 2020) and GEC Aurangabad)
52. Blockchain Technology by Raju Halder (Invited talk at SRM Institute Of Science And Technology Ramapuram, Chennai) (2020)
53. Blockchain: Business Foundations and Solution Architectures by Raju Halder (QIP Sponsored Short Term Course at IIT Indore) (2021)
54. Big Data Analytics by Rajiv Misra (FDP on Data Management at RRIMT, LUCKNOW) (2021)
55. Machine Learning for Security Using Sensor Data by Rajiv Misra (Joint Faculty Development Programme on Cyber Security at NIT Patna and MNIT Jaipur from 05-10-2020 to 11-10-2020)
56. Big Data For Cyber Security by Rajiv Misra (TEQIP III Sponsored Short Term Training Program (STTP) on Cyber Threat Intelligence and Digital Forensics (CIDF 2021) 1st March 2021 to 5th March 2021)
57. 5G Network Slicing and Its Applications by Rajiv Misra (AICTE Sponsored QIP Short Term Course (Indian Institute of Technology (BHU), Varanasi, IoT-Enabled 5G Networks: Infrastructure and Security) (2021)

Short-Term Courses, Training Programmes and Workshops organised

1. Augmented Reality(AR)/Virtual Reality(VR) by Dr. Rajiv Mishra (30th Nov -4th Dec, 2020) (Sponsored by ATAL)
2. Blockchain Technology by Dr. Raju Halder (26th – 30th May 2020) (Sponsored by ATAL)
3. Blockchain Technology by Dr. Raju Halder (20th – 24th Dec 2020) (Sponsored by ATAL)
4. Post Graduate Certificate in Data Analytics & Business Intelligence by Dr. Abyayananda Maiti (1 year) (BSE Institute Ltd.)
5. 17th International Conference on Natural Language Processing (ICON 2020) by Asif Ekbal

Journal Publications (Scopus – Indexed)

1. Sahoo S., Halder R. (2021). Traceability and ownership claim of data on big data marketplace using blockchain technology. *Journal of Information and Telecommunication*, 5(01), 35-61. DOI: 10.1080/24751839.2020.1819634
2. Alam M.I., Halder R., Pinto J.S. (2021). A deductive reasoning approach for database applications using verification conditions. *Journal of Systems and Software*, 175. DOI: 10.1016/j.jss.2020.110903
3. Akhtar M.S., Chauhan D.S., Ekbal A. (2020). A deep multi-task contextual attention framework for multi-modal affect analysis. *ACM Transactions on Knowledge Discovery from Data*, 14(03). DOI: 10.1145/3380744
4. Firdaus M., Golchha H., Ekbal A., Bhattacharyya P. (2021). A Deep Multi-task Model for Dialogue Act Classification, Intent Detection and Slot Filling. *Cognitive Computation*, 13(03), 626-645. DOI: 10.1007/s12559-020-09718-4
5. Kapil P., Ekbal A. (2020). A deep neural network based multi-task learning approach to hate speech detection. *Knowledge-Based Systems*, 210. DOI: 10.1016/j.knosys.2020.106458
6. Tiwari A., Saha T., Saha S., Sengupta S., Maitra A., Ramnani R., Bhattacharyya P. (2021). A dynamic goal adapted task oriented dialogue agent. *PLoS ONE*, 16. DOI: 10.1371/journal.pone.0249030
7. M. Firdaus, A.P Shandilya and A. Ekbal (2020). More to Diverse: Generating Diversified Responses in a Task Oriented Multimodal Dialog System. *PLoS ONE*, <https://doi.org/10.1371/journal.pone.0241271>
8. Saha, T., Gupta, D., Saha, S., Bhattacharyya, P. A hierarchical approach for efficient multi-intent dialogue policy learning. *Multimed Tools Appl* (2020). <https://doi.org/10.1007/s11042-020-09070-7>
9. Mishra S.K., Dhir R., Saha S., Bhattacharyya P. (2021). A Hindi Image Caption Generation Framework Using Deep Learning. *ACM Transactions on Asian and Low-Resource Language Information Processing*, 20(02). DOI: 10.1145/3432246
10. Dutta P., Saha S., Naskar S. (2020). A multi-objective based PSO approach for inferring pathway activity utilizing protein interactions. *Multimedia Tools and Applications*. DOI: 10.1007/s11042-020-09269-8
11. Mitra S., Saha S., Hasanuzzaman M. (2020). A multi-view deep neural network model for chemical-disease relation extraction from imbalanced datasets. *IEEE Journal of Biomedical and Health Informatics*, 24(11), 3315-3325. DOI: 10.1109/JBHI.2020.2983365
12. Agarwal M., Deshpande V., Katoshevski D., Kumar B. (2021). A novel Python module for statistical analysis of turbulence (P-SAT) in geophysical flows. *Scientific Reports*, 11(01). DOI: 10.1038/s41598-021-83212-1
13. Sanodiya R.K., Tiwari M., Mathew J., Saha S., Saha S. (2020). A particle swarm optimization-based feature selection for unsupervised transfer learning. *Soft Computing*, 24(24), 18713-18731. DOI: 10.1007/s00500-020-05105-1
14. Dutta P., Saha S., Pai S., Kumar A. (2020). A Protein Interaction Information-based Generative Model for Enhancing Gene Clustering. *Scientific Reports*, 10(01). DOI: 10.1038/s41598-020-57437-5

15. George M., Jose B.R., Mathew J. (2020). Abnormal activity detection using shear transformed spatio-temporal regions at the surveillance network edge. *Multimedia Tools and Applications*, 79(37-38), 27511-27532. DOI: 10.1007/s11042-020-09277-8
16. Jha K., Saha S. (2020). Amalgamation of 3D structure and sequence information for protein-protein interaction prediction. *Scientific Reports*, 10(01). DOI: 10.1038/s41598-020-75467-x
17. Firdaus M., Thakur N., Ekbal A. (2021). Aspect-Aware Response Generation for Multimodal Dialogue System. *ACM Transactions on Intelligent Systems and Technology*, 12(02). DOI: 10.1145/3430752
18. Suman C., Raj A., Saha S., Bhattacharyya P. (2021). Authorship Attribution of Microtext Using Capsule Networks. *IEEE Transactions on Computational Social Systems*. DOI: 10.1109/TCSS.2021.3067736.
19. Saha T., Ramesh Jayashree S., Saha S., Bhattacharyya P. (2020). BERT-Caps: A Transformer-Based Capsule Network for Tweet Act Classification. *IEEE Transactions on Computational Social Systems*, 7(05), 1168-1179. DOI: 10.1109/TCSS.2020.3014128
20. Ahmad Z., Jindal R., Ekbal A., Bhattacharyya P. (2020). Borrow from rich cousin: transfer learning for emotion detection using crosslingual embedding. *Expert Systems with Applications*, 139. DOI: 10.1016/j.eswa.2019.112851
21. Paul S., Saha S. (2020). CyberBERT: BERT for cyberbullying identification: BERT for cyberbullying identification. *Multimedia Systems*. DOI: 10.1007/s00530-020-00710-4
22. Yahia H., Schneider N., Bontemps S., Bonne L., Attuel G., Dib S., Ossenkopf-Okada V., Turiel A., Zebadua A., Elia D., Kumar Maji S., Schmitt F.G., Robitaille J.-F. (2021). Description of turbulent dynamics in the interstellar medium: Multifractal-microcanonical analysis: I. Application to Herschel observations of the Musca filament. *Astronomy and Astrophysics*, 649. DOI: 10.1051/0004-6361/202039874
23. Das D., Misra R. (2021). EASBVN: efficient approximation scheme for broadcasting in vehicular networks. *Wireless Networks*, 27(01), 339-349. DOI: 10.1007/s11276-020-02455-4
24. Rathore N.C., Tripathy S. (202). Effective Visibility Prediction on Online Social Network. *IEEE Transactions on Computational Social Systems*, 8(02), 355-364. DOI: 10.1109/TCSS.2020.3042713
25. Chakraborty N., Mondal A., Mondal S. (2020). Efficient Load Control Based Demand Side Management Schemes Towards a Smart Energy Grid System. *Sustainable Cities and Society*, 59. DOI: 10.1016/j.scs.2020.102175
26. Bhanu M., Mendes-Moreira J., Chandra J. (2020). Embedding Traffic Network Characteristics Using Tensor for Improved Traffic Prediction. *IEEE Transactions on Intelligent Transportation Systems*. 22(06), 3359-3371. DOI: 10.1109/TITS.2020.2984175
27. Suman C., Saha S., Bhattacharyya P., Chaudhari R.S. (2021). Emoji Helps! A Multi-modal Siamese Architecture for Tweet User Verification. *Cognitive Computation*, 13(02), 261-276. DOI: 10.1007/s12559-020-09715-7
28. Firdaus M., Chauhan H., Ekbal A., Bhattacharyya P. (2020). EmoSen: Generating Sentiment and Emotion Controlled Responses in a Multimodal Dialogue System. *IEEE Transactions on Affective Computing*. DOI: 10.1109/TAFFC.2020.3015491
29. Mathew D., Jose B.A., Mathew J., Patra P. (2020). Enabling Hardware Performance Counters for Microkernel-Based Virtualization on Embedded Systems. *IEEE Access*, 8, 110550-110564. DOI: 10.1109/ACCESS.2020.3002106
30. Patel Y.S., Reddy M., Misra R. (2021). Energy and cost trade-off for computational tasks offloading in mobile multi-tenant clouds. *Cluster Computing*, DOI: 10.1007/s10586-020-03226-8
31. Prajapat R., Yadav R.N., Misra R. (2021). Energy Efficient k-hop Clustering in Cognitive Radio Sensor Network for Internet of Things. *IEEE Internet of Things Journal*. DOI: 10.1109/JIOT.2021.3065691
32. Tatarave S., Tripathy S., Ghosh R. (2020). Enhancing quality of experience using peer-to-peer overlay on device-to-device communications. *International Journal of Communication Systems*, 33(15). DOI: 10.1002/dac.4546

33. Paul D., Saha S., Kumar A., Mathew J. (2021). Evolutionary multi-objective optimization based overlapping subspace clustering. *Pattern Recognition Letters*, 145, 208-2015. DOI: 10.1016/j.patrec.2021.02.012
34. Mandal S., Maiti A. (2020). Explicit feedback meets with implicit feedback in GPMF: a generalized probabilistic matrix factorization model for recommendation. *Applied Intelligence*, 50(06), 1955-1978. DOI: 10.1007/s10489-020-01643-1
35. Yadav S., Ramteke P., Ekbal A., Saha S., Bhattacharyya P. (2020). Exploring disorder-aware attention for clinical event extraction. *ACM Transactions on Multimedia Computing, Communications and Applications*, 6(01), DOI: 10.1145/3372328
36. Saini N., Saha S., Mansoori S., Bhattacharyya P. (2020). Fusion of self-organizing map and granular self-organizing map for microblog summarization. *Soft Computing*, 24(24), 1869-18711. DOI: 10.1007/s00500-020-05104-2
37. Gupta D., Suman S., Ekbal A. (2020). Hierarchical deep multi-modal network for medical visual question answering. *Expert Systems with Applications*, 164. DOI: 10.1016/j.eswa.2020.113993
38. Akhtar M.S., Ekbal A., Cambria E. (2020). How Intense Are You? Predicting Intensities of Emotions and Sentiments using Stacked Ensemble [Application Notes]. *IEEE Computational Intelligence Magazine*, 15(01), 64-75. DOI: 10.1109/MCI.2019.2954667
39. Paul S., Saha S., Hasanuzzaman M. (2020). Identification of cyberbullying: A deep learning based multimodal approach. *Multimedia Tools and Applications*. DOI: 10.1007/s11042-020-09631-w.
40. Mishra S.K., Dhira R., Saha S., Bhattacharyya P., Singh A.K. (2020). Image captioning in Hindi language using transformer networks. *Computers and Electrical Engineering*, 92. DOI: 10.1016/j.compeleceng.2021.107114
41. Mathew A., Jolly M.J., Mathew J. (2021). Improved residential energy management system using priority double eep Q-learning. *Sustainable Cities and Society*, 69. DOI: 10.1016/j.scs.2021.102812
42. Paul D., Saha S., Mathew J. (2020). Improved subspace clustering algorithm using multi-objective framework and subspace optimization. *Expert Systems with Applications*, 158. DOI: 10.1016/j.eswa.2020.113487
43. Qureshi S.A., Dias G., Hasanuzzaman M., Saha S. (2020). Improving Depression Level Estimation by Concurrently Learning Emotion Intensity. *IEEE Computational Intelligence Magazine*, 15(03), 47-59. DOI: 10.1109/MCI.2020.2998234
44. Dutta P., Mishra P., Saha S. (2020). Incomplete multi-view gene clustering with data regeneration using Shape Boltzmann Machine. *Computers in Biology and Medicine*, 125. DOI: 10.1016/j.combiomed.2020.103965
45. Jha K., Saha S. (2021). Incorporation of multimodal multiobjective optimization in designing a filter based feature selection technique. *Applied Soft Computing*, 98. DOI: 10.1016/j.asoc.2020.106823
46. Chakraborty N., Mondal A., Mondal S. (2021). Intelligent charge scheduling and eco-routing mechanism for electric vehicles: A multi-objective heuristic approach. *Sustainable Cities and Society*, 69. DOI: 10.1016/j.scs.2021.102820
47. Mathew A., Roy A., Mathew J. (2020). Intelligent Residential Energy Management System Using Deep Reinforcement Learning. *IEEE Systems Journal*, 14(04), 5362-5372. DOI: 10.1109/JSYST.2020.2996547
48. Patel Y.S., Baheti A., Misra R. (2021). Interval graph multi-coloring-based resource reservation for energy-efficient containerized cloud data centers. *Journal of Supercomputing*, 77(05), 4484-4532. DOI: 10.1007/s11227-020-03439-z
49. Ghosal T., Edithal V., Ekbal A., Bhattacharyya P., Chivukula S.S.S.K., Tsatsaronis G. (2021). Is your document novel? Let attention guide you. An attention-based model for document-level novelty detection. *Natural Language Engineering*, 27(04), 427-454. DOI: 10.1017/S1351324920000194
50. Sanodiya R.K., Mathew J., Aditya R., Jacob A., Nayanar B. (2021). Kernelized Unified Domain Adaptation on Geometrical Manifolds. *Expert Systems with Applications*, 167. DOI: 10.1016/j.eswa.2020.114078
51. Neeraj N., Mathew J., Agarwal M., Behera R.K. (2021). Long short-term memory-singular spectrum analysis-based

- model for electric load forecasting. *Electrical Engineering*, 103(02), 1067-1082. DOI: 10.1007/s00202-020-01135-y
52. Tripathy S., Rai V.K., Mathew J. (2021). MARPUF: physical unclonable function with improved machine learning attack resistance. *IET Circuits, Devices and Systems*, 15(05), 465-474. DOI: 10.1049/cds2.12042
 53. Pratap A., Misra R., Das S.K. (2021). Maximizing Fairness for Resource Allocation in Heterogeneous 5G Networks. *IEEE Transactions on Mobile Computing*, 20(02), 603-619. DOI: 10.1109/TMC.2019.2948877
 54. Kamila S., Hasanuzzaman M., Ekbal A., Bhattacharyya P. (2020). Measuring Temporal Distance Focus from Tweets and Investigating its Association with Psychodemographic Attributes. *IEEE Transactions on Affective Computing*. DOI: 10.1109/TAFFC.2020.2992463
 55. Saini N., Saha S., Bhattacharyya P. (2021). Microblog summarization using self-adaptive multi-objective binary differential evolution. *Applied Intelligence*. DOI: 10.1007/s10489-020-02178-1
 56. Mathew A., Mathew J. (2020). Monocular depth estimation with SPN loss. *Image and Vision Computing*, 100. DOI: 10.1016/j.imavis.2020.103934
 57. Acharya S., Saha S., Pradhan P. (2020). Multi-Factored Gene-Gene Proximity Measures Exploiting Biological Knowledge Extracted from Gene Ontology: Application in Gene Clustering. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 17(01), 207-219. DOI: 10.1109/TCBB.2018.2849362
 58. Arya N., Saha S. (2021). Multi-modal advanced deep learning architectures for breast cancer survival prediction [Formula presented]. *Knowledge-Based Systems*, 221. DOI: 10.1016/j.knsys.2021.106965
 59. Saini N., Bansal D., Saha S., Bhattacharyya P. (2021). Multi-objective multi-view based search result clustering using differential evolution framework. *Expert Systems with Applications*, 168. DOI: 10.1016/j.eswa.2020.114299
 60. Paul D., Jain A., Saha S., Mathew J. (2021). Multi-objective PSO based online feature selection for multi-label classification. *Knowledge-Based Systems*, 222. DOI: 10.1016/j.knsys.2021.106966
 61. Akhtar M.S., Garg T., Ekbal A. (2020). Multi-task learning for aspect term extraction and aspect sentiment classification. *Neurocomputing*, 398, 247-256. DOI: 10.1016/j.neucom.2020.02.093
 62. Mitra S., Saha S., Hasanuzzaman M. (2020). Multi-view clustering for multi-omics data using unified embedding. *Scientific Reports*, 10(01). DOI: 10.1038/s41598-020-70229-1
 63. Giri S.J., Dutta P., Halani P., Saha S. (2021). MultiPredGO: Deep Multi-Modal Protein Function Prediction by Amalgamating Protein Structure, Sequence, and Interaction Information. *IEEE Journal of Biomedical and Health Informatics*, 25(05), 1832-1838. DOI: 10.1109/JBHI.2020.3022806
 64. Behera S., Misra R., Sillitti A. (2021). Multiscale deep bidirectional gated recurrent neural networks based prognostic method for complex non-linear degradation systems. *Information Sciences*, 554, 120-144. DOI: 10.1016/j.ins.2020.12.032
 65. Singh A., Saha S., Hasanuzzaman M., Dey K. (2021). Multitask Learning for Complaint Identification and Sentiment Analysis. *Cognitive Computation*. DOI: 10.1007/s12559-021-09844-7
 66. Sen S., Hasanuzzaman M., Ekbal A., Bhattacharyya P., Way A. (2021). Neural machine translation of low-resource languages using SMT phrase pair injection. *Natural Language Engineering*, 27(03), 271-292. DOI: 10.1017/S1351324920000303
 67. Aetesam H., Maji S.K. (2021). Noise dependent training for deep parallel ensemble denoising in magnetic resonance images. *Biomedical Signal Processing and Control*, 66. DOI: 10.1016/j.bspc.2020.102405
 68. Nithin P.B., Albert Francis R., Chemmanam A.J., Jose B.A., Mathew J. (2020). Interactive robotic testbed for performance assessment of machine learning based computer vision techniques. *Journal of Information Science and Engineering*, 36(05), 1055-1067. DOI: 10.6688/JISE.202009_36(5).0008
 69. Patel Y.S., Page A., Nagdev M., Choubey A., Misra R., Das S.K. (2020). On demand clock synchronization for live VM migration in

- distributed cloud data centers, *Journal of Parallel and Distributed Computing*, 138, 15-31. DOI: 10.1016/j.jpdc.2019.11.012
70. Chakraborty N., Li J.-Q., Mondal S., Luo C., Wang H., Alazab M., Chen F., Pan Y. (2021). On Designing a Lesser Obtrusive Authentication Protocol to Prevent Machine-Learning-Based Threats in Internet of Things. *IEEE Internet of Things Journal*, 8(05), 3255-3267. DOI: 10.1109/JIOT.2020.3025274
 71. Sanodiya R.K., Mathew J., Saha S., Tripathi P. (2020), Particle swarm optimization based parameter selection technique for unsupervised discriminant analysis in transfer learning framework. *Applied Intelligence*, 50(10), 3071-3089. DOI: 10.1007/s10489-020-01710-7
 72. Tatarave S.K., Tripathy S. (2021). PJ-Sec: secure node joining in mobile P2P networks. *CCF Transactions on Pervasive Computing and Interaction*, 3(01), 13-24. DOI: 10.1007/s42486-020-00047-x
 73. Neeraj, Mathew J., Behera R.K. (2021). Power load forecasting based on long short term memory-singular spectrum analysis. *Energy Systems*. DOI: 10.1007/s12667-020-00424-6
 74. Jha K., Saha S., Tanveer M. (2021). Prediction of protein-protein interactions using stacked auto-encoder. *Transactions on Emerging Telecommunications Technologies*. DOI: 10.1002/ett.4256
 75. Maji S.K., Thakur R.K., Yahia H.M. (2020). SAR image denoising based on multifractal feature analysis and TV regularization. *IET Image Processing*, 14(16). DOI: 10.1049/iet-ipr.2020.0272
 76. Chakraborty N., Mondal A., Mondal S. (2020). Scheduling Interdependent Smart Appliances with Mixed-Preemption Policy for Peak Load Minimization. *IETE Journal of Research*, 66(06), 797-805. DOI: 10.1080/03772063.2020.1775140
 77. Mishra S.K., Saini N., Saha S., Bhattacharyya P. (2021). Scientific document summarization in multi-objective clustering framework. *Applied Intelligence*. DOI: 10.1007/s10489-021-02376-5
 78. Salgotra R., Singh U., Saha S., Gandomi A.H. (2021). Self-adaptive cuckoo search: Analysis and experimentation. *Swarm and Evolutionary Computation*, 60. DOI: 10.1016/j.swevo.2020.100751
 79. Sanodiya R.K., Saha S., Mathew J. (2020). Semi-supervised orthogonal discriminant analysis with relative distance: integration with a MOO approach. *Soft Computing*, 24(03), 1599-1618. DOI: 10.1007/s00500-019-03990-9
 80. Alok A.K., Gupta P., Saha S., Sharma V. (2020). Simultaneous feature selection and clustering of micro-array and RNA-sequence gene expression data using multiobjective optimization. *International Journal of Machine Learning and Cybernetics*, 11(11), 2541-2563. DOI: 10.1007/s13042-020-01139-x
 81. Priya S., Bhanu M., Dandapat S.K., Ghosh K., Chandra J. (2020). TAQE: Tweet Retrieval-Based Infrastructure Damage Assessment during Disasters. *IEEE Transactions on Computational Social Systems*, 7(02), 389-403. DOI: 10.1109/TCSS.2019.2957208
 82. Saha T., Gupta D., Saha S., Bhattacharyya P. (2020). Towards integrated dialogue policy learning for multiple domains and intents using Hierarchical Deep Reinforcement Learning. *Expert Systems with Applications*, 162. DOI: 10.1016/j.eswa.2020.113650
 83. Saha T., Saha S., Bhattacharyya P. (2020). Towards sentiment aided dialogue policy learning for multi-intent conversations using hierarchical reinforcement learning. *PLoS ONE*, 15(07). DOI: 10.1371/journal.pone.0235399
 84. Saha T., Saha S., Bhattacharyya P. (2020). Towards Sentiment-Aware Multi-Modal Dialogue Policy Learning. *Cognitive Computation*. DOI: 10.1007/s12559-020-09769-7
 85. Patel Y.S., Malwi Z., Nigohjkar A., Misra R. (2021). Truthful online double auction based dynamic resource provisioning for multi-objective trade-offs in IaaS clouds. *Cluster Computing*. DOI: 10.1007/s10586-020-03225-9
 86. Rimjhim, Cheke N., Chandra J., Dandapat S.K. (2020). Understanding the Impact of Geographical Distance on Online Discussions. *IEEE Transactions on Computational Social Systems*. 7(04), 858-872. DOI: 10.1109/TCSS.2020.2993450
 87. Mitra S., Hasanuzzaman M., Saha S. (2020). A unified multi-view clustering algorithm using multi-objective optimization coupled with generative model. *ACM Transactions on Knowledge Discovery from Data*, 14(01). DOI: 10.1145/3365673

88. Sengupta R., Pal M., Saha S., Bandyopadhyay S. (2020). Uniform distribution driven adaptive differential evolution. *Applied Intelligence*, 50(11), 3638-3659. DOI: 10.1007/s10489-020-01707-2
89. Suman C., Reddy S.M., Saha S., Bhattacharyya P. (2021). Why pay more? A simple and efficient named entity recognition system for tweets. *Expert Systems with Applications*. 167. DOI: 10.1016/j.eswa.2020.114101
90. Gupta, D., Ekbal, A. and Bhattacharyya, P. (2020). A Deep Neural Network Framework for English Hindi Question Answering. *ACM Transactions On Asian and Low-Resource Language Information Processing*, 19(02), 1-22. DOI: 10.1145/3359988
91. Yadav, S., Ramesh, S., Saha, S. and Ekbal, A. (2020). Relation extraction from biomedical and clinical text: Unified multitask learning framework. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*. DOI: 10.1109/TCBB.2020.3020016
92. Paul, D., Kumar, R., Saha, S. and Mathew, J. (2021). Multi objective Cuckoo Search-based Streaming Feature Selection for Multi-label Dataset. *ACM Transactions on Knowledge Discovery from Data*, 15(06), 1-24. DOI: 10.1145/3447586
93. Saini, N., Saha, S., Bhattacharyya, P. and Tuteja, H. (2020). Textual Entailment--Based Figure Summarization for Biomedical Articles. *ACM Transactions on Multimedia Computing, Communications, and Applications*, 16(01). DOI: 10.1145/3357334

Journal Publications (Other)

1. Gupta, D., Tripathy, S. and Mazumdar, B. (2020). Correlation Power Analysis of KASUMI and Power Resilience Analysis of Some Equivalence Classes of KASUMI S-Boxes. *Journal of Hardware and Systems Security*, 4(04), 1-17. DOI:10.1007/s41635-020-00104-y
2. Alam, M.I. and Halder, R. (2021). Formal Verification of Database Applications Using Predicate Abstraction. *Springer Nature Computer Science*, 2(03). DOI:10.1007/s42979-020-00426-2

Conference Papers/Book Chapters

1. Kulkarni, P.P., Kasyap, H., Tripathy, S. (2021). DNet: An Efficient Privacy-Preserving Distributed Learning Framework for Healthcare Systems. International Conference on Distributed Computing and Internet Technology (CDCIT 2021: Distributed Computing and Internet Technology), 145-159 [LNCS, volume 12582]. DOI: 10.1007/978-3-030-65621-8_9
2. Mukherjee A., Halder R. (2020). PoliceChain: Blockchain-Based Smart Policing System for Smart Cities. Proceedings of the 13th International Conference on Security of Information and Networks (SIN 20), [ACM International Conference Proceeding Series]. DOI: 10.1145/3433174.3433618
3. Rai V.K., Tripathy S., Mathew J. (2020). 2SPUF: Machine Learning Attack Resistant SRAM PUF. ISEA-ISAP 2020 - Proceedings of the 3rd ISEA International Conference on Security and Privacy, 149-154. DOI: 10.1109/ISEA-ISAP49340.2020.235013
4. Neeraj, Mathew, J. Behera, R.K., Panthakkalakath, Z.E. (2020). A Deep Learning Framework for COVID Outbreak Prediction. CoRR. DOI: CoRR abs/2010.00382
5. Saikh T., Haripriya B., Ekbal A., Bhattacharyya P. (2020). A Deep Transfer Learning Approach for Fake News Detection. Proceedings of the International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9207477
6. Mishra S., Mondal S., Mondal A. (2020). A Fast and Efficient Way to Obtain the Optimal Number of Ports in Electric Vehicle Charging Stations. e-Energy 2020 - Proceedings of the 11th ACM International Conference on Future Energy Systems, 393-394. DOI: 10.1145/3396851.3403520
7. Sanodiya, R.K., Paul, D., Yao, L., Mathew, J., Juhi, A. (2020). A Feature Selection Approach to Visual Domain Adaptation in Classification. International Conference on Neural Information Processing (ICONIP 2020): Neural Information Processing, 77-89 [LNCS, volume 12533]. DOI: 10.1007/978-3-030-63833-7_7
8. Suman, C., Gupta, A., Saha, S., Bhattacharyya, P. (2020). A Multi-modal Personality Prediction System. Proceedings of the 17th International Conference on Natural Language Processing, 317-322 [NLP Association of India (NLP AI)].
9. Saikh T., De A., Bandyopadhyay D., Gain B., Ekbal A. (2020). A Neural Framework for English-Hindi Cross-Lingual Natural Language Inference. 27th International Conference on Neural Information Processing (ICONIP 2020 Core A), 655-667 [LNCS Volume 12532]. DOI: 10.1007/978-3-030-63830-6_55
10. Sanodiya, R.K., Tiwari, M., Yao, L., Mathew, J. (2020). A Particle Swarm Optimization Based Joint Geometrical and Statistical Alignment Approach with Laplacian Regularization. International Conference on Neural Information Processing (ICONIP 2020): Neural Information Processing, 260-268 [CCIS, volume 1333]. DOI: 10.1007/978-3-030-63823-8_31
11. Sahoo, S.K., Saha, S., Ekbal, A., Bhattacharyya, P. (2020). A Platform for Event Extraction in Hindi. Proceedings of the 12th Language Resources and Evaluation Conference, 2241-2250.
12. Roshan R., Matam R., Mukherjee M., Lloret J., Tripathy S. (2020). A secure task-offloading framework for cooperative fog computing environment. IEEE Global Communications Conference, GLOBECOM 2020 - Proceedings. DOI: 10.1109/GLOBECOM42002.2020.9322509
13. Gupta, D., Ekbal, A., Bhattacharyya, P. (2020). A Semi-Supervised Approach to Generate the Code-Mixed Text using Pre-Trained Encoder and Transfer Learning. Findings of the Association for Computational Linguistics: EMNLP 2020, 2267-2280. DOI: 10.18653/v1/2020.findings-emnlp.206
14. Aetesam H., Maji S.K., Boulanger J. (2021). A Two-Phase Splitting Approach for the Removal of Gaussian-Impulse Noise from Hyperspectral Images. International Conference on Computer Vision and Image Processing (CVIP 2020): Computer Vision and Image Processing, 179-190 [CCIS, volume 1376]. DOI: 10.1007/978-981-16-1086-8_16
15. Gupta, D., Lenka, P., Ekbal, A., Bhattacharyya, P. (2020). A Unified Framework for Multilingual and Code-Mixed Visual Question Answering. Proceedings of the 1st Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the 10th International Joint Conference on Natural Language Processing, 900-913.

16. Maji S.K., Boulanger J. (2021). A Variational Model For Poisson Gaussian Joint Denoising Deconvolution. IEEE 18th International Symposium on Biomedical Imaging (ISBI), 1527-1530. DOI: 10.1109/ISBI48211.2021.9434030
17. Saha, T., Patra, A.P., Saha, S., Bhattacharyya, P. (2020). A Transformer based Approach for Identification of Tweet Acts. International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9207484
18. Ahmad, Z., Ekbal, A., Sengupta, S., Mitra, A., Rammani, R., Bhattacharyya, P. (2020). Active Learning Based Relation Classification for Knowledge Graph Construction from Conversation Data. International Conference on Neural Information Processing (ICONIP 2020): Neural Information Processing, 617-625 [CCIS, volume 1332]. DOI: 10.1007/978-3-030-63820-7_70
19. Chauhan, D.S., Dhanush, S.R., Ekbal, A., Bhattacharyya, P. (2020). All-in-One: A Deep Attentive Multi-task Learning Framework for Humour, Sarcasm, Offensive, Motivation, and Sentiment on Memes. Proceedings of the 1st Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the 10th International Joint Conference on Natural Language Processing, 281-290.
20. Dutta, P., Saha, S. (2020). Amalgamation of protein sequence, structure and textual information for improving protein-protein interaction identification. Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics, 6396-6407. DOI: 10.18653/v1/2020.acl-main.570
21. Ghosal, T., Verma, r., Ekbal, A., Saha, S., Bhattacharyya, P. (2020). An Empirical Study of Importance of Different Sections in Research Articles Towards Ascertaining Their Appropriateness to a Journal. International Conference on Asian Digital Libraries (ICADL 2020): Digital Libraries at Times of Massive Societal Transition, 407-415. DOI: 10.1007/978-3-030-64452-9_38
22. Mukherjee, A., Halder, R. (2021). An Integrated Platform for Vehicle-Related Services and Records Management Using Blockchain Technology. Asian Conference on Intelligent Information and Database Systems (ACIIDS 2021): Recent Challenges in Intelligent Information and Database Systems, 337-351. DOI: 10.1007/978-981-16-1685-3_28
23. Yadav S., Sain J.P., Sheth A., Ekbal A., Saha S., Bhattacharyya P. (2020). Assessing the severity of health states based on social media posts. 25th International Conference on Pattern Recognition (ICPR), 5728-5735. DOI: 10.1109/ICPR48806.2021.9411980
24. Sahoo S., Halder R. (2020). Blockchain-Based Forward and Reverse Supply Chains for E-waste Management. International Conference on Future Data and Security Engineering (FDSE 2020): Future Data and Security Engineering, 201-220 [LNCS, volume 12466]. DOI: 10.1007/978-3-030-63924-2_12
25. Ghosh S, Ekbal A, Bhattacharyya P. (2020). CEASE, a corpus of emotion annotated suicide notes in English. 12th International Conference on Language Resources and Evaluation, Conference Proceedings (LREC 2020), 1618-1626.
26. Singh N., Kasyap H., Tripathy S. (2020). Collaborative Learning Based Effective Malware Detection System. Joint European Conference on Machine Learning and Knowledge Discovery in Databases (ECML PKDD 2020): Workshops, 205-219. DOI: 10.1007/978-3-030-65965-3_13
27. Suman, C., Kumar, J., Saha, S., Bhattacharyya, P. (2020). D-Coref: A Fast and Lightweight Coreference Resolution Model using DistilBERT. Proceedings of the 17th International Conference on Natural Language Processing (ICON), 323-328.
28. Gupta, R.K., Ranjan, A., Moid, M.A., Misra, R. (2020). Deep-Learning Based Mobile-Traffic Forecasting for Resource Utilization in 5G Network Slicing. International Conference on Internet of Things and Connected Technologies (ICIoTCT 2020): Internet of Things and Connected Technologies, 410-424. DOI: 10.1007/978-3-030-76736-5_38
29. Mishra, S., Misra, R. (2020). Delay Analysis for P2P Systems Using LPWAN. International Conference on Internet of Things and Connected Technologies (ICIoTCT 2020): Internet of Things and Connected Technologies, 96-104. DOI: 10.1007/978-3-030-76736-5_10
30. Priya S., Upadhyaya A., Bhanu M., Dandapat S.K., Chandra J. (2020). EnDeA: Ensemble based Decoupled Adversarial Learning for Identifying Infrastructure Damage during Disasters. Proceedings of the 29th ACM International Conference on Information & Knowledge Management (CIKM 2020). 1245-1254. DOI: 10.1145/3340531.3412020

31. Roy S., Suman B.K., Chandra J., Dandapat S.K. (2020). Forecasting the future: Leveraging RNN based feature concatenation for tweet outbreak prediction. Proceedings of the 7th ACM IKDD CoDS and 25th COMAD (CoDS COMAD 2020), 219-223. DOI: 10.1145/3371158.3371190
32. Sangwan S., Akhtar M.S., Behera P., Ekbal A. (2020). I didn't mean what i wrote! Exploring Multimodality for Sarcasm Detection. International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9206905
33. Salgotra R., Singh U., Saha S., Gandomi A.H. (2020). Improving Cuckoo Search: Incorporating Changes for CEC 2017 and CEC 2020 Benchmark Problems. IEEE Congress on Evolutionary Computation (CEC2020). DOI: 10.1109/CEC48606.2020.9185684
34. Kanani C.S., Saha S., Bhattacharyya P. (2020). Improving Diversity and Reducing Redundancy in Paragraph Captions. International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9206644
35. Firdaus M., Ekbal A., Bhattacharyya P. (2020). Incorporating politeness across languages in customer care responses: Towards building a multi-lingual empathetic dialogue agent. Proceedings of the 12th Language Resources and Evaluation Conference (LREC 2020), 4172-4182.
36. Sarkar R., Saha P.K., Mondal S., Mondal A. (2020). Intelligent Scheduling of V2G, V2V, G2V Operations in a Smart Microgrid. Proceedings of the Eleventh ACM International Conference on Future Energy Systems (e-Energy'20), 417-418. DOI: 10.1145/3396851.3403517
37. Firdaus, M., Chauhan, H., Ekbal, A., Bhattacharyya, P. (2020). MEISD: A Multimodal Multi-Label Emotion, Intensity and Sentiment Dialogue Dataset for Emotion Recognition and Sentiment Analysis in Conversations. Proceedings of the 28th International Conference on Computational Linguistics, 4441-4443. DOI: 10.18653/v1/2020.coling-main.393
38. Gupta, R. K., Choubey, A., Shlok Jain, Greeshma, R.R., Misra, R. (2020). Machine Learning Based Network Slicing and Resource Allocation for Electric Vehicles (EVs). International Conference on Internet of Things and Connected Technologies (ICIoTCT 2020): Internet of Things and Connected Technologies, 333-347. DOI: 10.1007/978-3-030-76736-5_31
39. Tripathy, S., Mohanty, S.K. (2020). MAPPCN: Multi-hop Anonymous and Privacy-Preserving Payment Channel Network. International Conference on Financial Cryptography and Data Security (FC 2020): Financial Cryptography and Data Security, 481-495. DOI: 10.1007/978-3-030-54455-3_34
40. Saini, N., Kumar, S., Saha, S., Bhattacharyya, P. (2020). Mining Graph-based Features in Multi-objective Framework for Microblog Summarization. IEEE Congress on Evolutionary Computation (CEC2020). DOI: 10.1109/CEC48606.2020.9185507
41. Priya, S., Bhanu, M., Dandapat, S.K., Chandra, J. (2021). Mirroring Hierarchical Attention in Adversary for Crisis Task Identification: COVID-19, Hurricane Irma. 18th International Conference on Information Systems for Crisis Response and Management (ISCRAM 2021), 609-620.
42. Gupta, K.K., Haque, R., Ekbal, A., Bhattacharyya, Way, A. (2020). Modelling source- and target-language syntactic Information as conditional context in interactive neural machine translation. Proceedings of the 22nd Annual Conference of the European Association for Machine Translation.
43. Banerjee S., Misra R., Prasad M., Elmroth E., Bhuyan M.H. (2020). Multi-diseases Classification from Chest-X-ray: A Federated Deep Learning Approach. Australasian Joint Conference on Artificial Intelligence (AI 2020): Advances in Artificial Intelligence, 3-15 [LNCS, volume 12576]. DOI: 10.1007/978-3-030-64984-5_1
44. Mamta, Ekbal A., Bhattacharyya P., Srivastava S., Kumar A., Saha T. (2020). Multi-domain tweet corpora for sentiment analysis: Resource creation and evaluation. Proceedings of the 12th Language Resources and Evaluation Conference (LREC 2020), 5046-5054.
45. Mittal, A., Sahoo, S., Datar, A., Kadiwala, J., Shalu, H., Mathew, J. (2020). Multi-Modal Detection of Alzheimer's Disease from Speech and Text. DOI: CoRR abs/2012.00096
46. Jangra A., Saha S., Jatowt A., Hasanuzzaman M. (2020). Multi-Modal Summary Generation using Multi-Objective Optimization. Proceedings of the 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2020). 1745-1748. DOI: 10.1145/3397271.3401232

47. Mitra S., Saha S. (2020). A multi-task multi-view based multi-objective clustering algorithm. 25th International Conference on Pattern Recognition (ICPR2020), 4720-4727. DOI: 10.1109/ICPR48806.2021.9412053
48. Giri S.J., Saha S. (2020). Multi-View Gene Clustering using Gene Ontology and Expression-based Similarities. IEEE Congress on Evolutionary Computation (CEC2020). DOI: 10.1109/CEC48606.2020.9185885
49. Firdaus, M., Thakur, N., Ekbal, A. (2020). MultiDM-GCN: Aspect-guided Response Generation in Multi-domain Multi-modal Dialogue System using Graph Convolutional Network. Findings of the Association for Computational Linguistics (EMNLP 2020), 2318-2328. DOI: 10.18653/v1/2020.findings-emnlp.210.
50. Varshney D., Ekbal A., Nagaraja G.P., Tiwari M., Gopinath A.A.M., Bhattacharyya P. (2020). Natural language generation using transformer network in an open-domain setting. International Conference on Applications of Natural Language to Information Systems (NLDB 2020): Natural Language Processing and Information Systems, 82-93 [LNCS, volume 12089]. DOI: 10.1007/978-3-030-51310-8_8
51. Paul D., Saha S., Mathew J. (2020). Online Multi-objective Subspace Clustering for Streaming Data. International Conference on Neural Information Processing (ICONIP 2020): Neural Information Processing, 95-103 [CCIS, volume 1332]. DOI: 10.1007/978-3-030-63820-7_11
52. Sridhar S., Saha S., Shaikh A., Yedida R., Saha S. (2020). Parsimonious Computing: A Minority Training Regime for Effective Prediction in Large Microarray Expression Data Sets. International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9207083
53. Firdaus M., Thangavelu N., Ekba A., Bhattacharyya P. (2020). Persona aware Response Generation with Emotions. International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9207529
54. Jha K., Saha S., Khushi M. (2020). Protein-Protein Interactions Prediction Based on Bi-directional Gated Recurrent Unit and Multimodal Representation. 27th International Conference, (ICONIP 2020), 164-171. DOI: 10.1007/978-3-030-63823-8_20
55. Gupta, D., Chauhan, H., Tej, A.R., Ekbal, A., Bhattacharyya, P. (2020). Reinforced Multi-task Approach for Multi-hop Question Generation. International Conference on Computational Linguistics.
56. Saha, T., Chopra, S., Saha, S., Bhattacharyya, P. (2020). Reinforcement Learning Based Personalized Neural Dialogue Generation. International Conference on Neural Information Processing (ICONIP2020), 709-716. DOI: 10.1007/978-3-030-63820-7_81
57. Vikram A., Mondal S., Mathew J., Mondal A. (2020). Routing of Delivery Trucks in a Battery Swapping System with Partial Delivery Option. Proceedings of the Eleventh ACM International Conference on Future Energy Systems (e-Energy '20), 391-392. DOI: 10.1145/3396851.3403519
58. Saikh T., Ekbal A., Bhattacharyya P. (2020). ScholarlyRead: A new dataset for scientific article reading comprehension. Proceedings of the 12th Conference on Language Resources and Evaluation (LREC 2020), 5498-5504.
59. Mathew A., Patra A.P., Mathew J. (2020). Self-Attention Dense Depth Estimation Network for Unrectified Video Sequences. IEEE International Conference on Image Processing (ICIP2020). DOI: 10.1109/ICIP40778.2020.9190764
60. Jangra, A., Jain, R., Mavi, V., Saha, S., Bhattacharyya, P. (2020). Semantic Extractor-Paraphraser based Abstractive Summarization. ICON 2021.
61. Chauhan, D.S., Dhanush, S.R., Ekbal, A., Bhattacharyya, P. (2020). Sentiment and Emotion help Sarcasm? A Multi-task Learning Framework for Multi-Modal Sarcasm, Sentiment and Emotion Analysis. Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics, 4351-4360. DOI: 10.18653/v1/2020.acl-main.401
62. Sanodiya R.K., Mathew A., Mathew J., Khushi M. (2020). Statistical and Geometrical Alignment using Metric Learning in Domain Adaptation. International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9206877
63. Gupta K.K., Haque R., Ekbal A., Bhattacharyya P., Way A. (2020). Syntax-Informed Interactive Neural Machine Translation. International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9207491.

64. Jangra A., Jatowt A., Hasanuzzaman M., Saha S. (2020). Text-image-video summary generation using joint integer linear programming. European Conference on Information Retrieval (ECIR 2020): Advances in Information Retrieval, 190-198 [LNCS, volume 12036]. DOI: 10.1007/978-3-030-45442-5_24
65. Saha, T., Patra, A., Saha, S., Bhattacharyya, P. (2020). Towards Emotion-aided Multi-modal Dialogue Act Classification. Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics, 4361–4372. DOI: 10.18653/v1/2020.acl-main.402
66. Saha, T., Upadhyaya, A., Saha S., Bhattacharyya, P. (2020). Towards Sentiment and Emotion aided Multi-modal Speech Act Classification in Twitter. Proceedings of the 2021 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, 5727-5738. DOI: 10.18653/v1/2021.naacl-main.456
67. Saha, T., Saha, S., Bhattacharyya, P. (2020). Transfer Learning based Task-oriented Dialogue Policy for Multiple Domains using Hierarchical Reinforcement Learning. International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9206954
68. Ahmad Z., Mukuntha N.S., Ekbal A., Bhattacharyya P. (2020). Tweet to News Conversion: An Investigation into Unsupervised Controllable Text Generation. International Joint Conference on Neural Networks (IJCNN2020). DOI: 10.1109/IJCNN48605.2020.9206620
69. Sundararaman, M.N., Ahmad, Z., Ekbal, A., Bhattacharyya, P. (2020). Unsupervised Aspect-Level Sentiment Controllable Style Transfer. Proceedings of the 1st Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the 10th International Joint Conference on Natural Language Processing, 303–312.

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Digital Image Processing, Digital Signal Processing, Digital Video Processing, Video Surveillance, Multimedia Communication, Signal Processing for communication, Tele-medicine, Medical Signal and Image Processing, Neuroscience, Neuro-cognitionW



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Digital Image and Video Processing, Medical Imaging, Stochastic resonance for signal and image processing applications, Machine learning and Deep learning



DR. RANJAN KUMAR BEHERA

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DR. SUDHIR KUMAR

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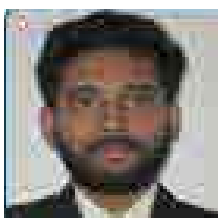
Wireless Sensor Networks, Internet of Things (IoT), Molecular and MIMO Communications, Applications of Signal Processing and Machine Learning. Topics of current interests: Location based services, Tracking, Navigation, Clustering, Anomaly Detection, Supervised and Unsupervised Learning for Smart Environments, Activity Recognition, Molecular and MIMO Communications



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Digital Signal Processing for Communication, Coherent Optical Communication, Photonic Integrated Circuits (PICs), All-Optical Signal Processing, Design, Characterization, and Optimization of Fiber-Optic Transmission Systems and Networks



DR. SHOVAN BHAUMIK

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Statistical signal processing, Nonlinear estimation, Aerospace target tracking and Smart material. Solar Cells. Micro-Nanoelectronics, MEMS, Modeling & Simulation. Power System Dynamics; Wide-Area Monitoring, Control and Protection; Microgrid Operation, Control and Protection



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Signal processing for wireless communication, blind signal classification, blind signal synchronization, blind parameter estimation, secrecy capacity of cognitive radios and cooperative communications, MIMO, OFDM, MIMO-OFDM, SC-FDMA, NOMA, UWB systems, receiver design and implementation on testbed, and Sequence design for wireless communication



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Bio-medical signal processing, Wearable healthcare monitoring, Human activity monitoring, Machine and deep learning, Signal processing for wireless communication, Compressed sensing, Cognitive radios, Internet of things



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RF MEMS, Computational Electromagnetics

Member - Professional Bodies

1. Dr. Udit Satija (2017) IEEE
2. Dr. Jawar Singh, Senior Member, IEEE
3. Dr. Jawar Singh, Chair IEEE Patna Subsection
4. Kailash Chandra Ray (2004) IEEE
5. Maheshkumar H. Kolekar (2000) IETE
6. Maheshkumar H. Kolekar (2000) CSI
7. Maheshkumar H. Kolekar (2000) ISTE
8. Maheshkumar H. Kolekar (2018) IEEE (Senior Member)
9. Pramod Kumar Tiwari (2018) ISTE
10. Pramod Kumar Tiwari (2013) IEEE
11. Rajib Jha (2018) IEEE
12. Rajib Jha (2020) ISTE life member
13. Rajib Jha (2015) IUPRAI
14. Ranjan Kumar Behera (2013) IEEE
15. S. Sivasubramani (2014) IEEE
16. Sanjoy Kumar Parida (2016) IEEE
17. Sanjoy Kumar Parida (2016) IEEE PES
18. Saurabh Kumar Pandey (2020) IEEE
19. Saurabh Kumar Pandey (2018) ISTE
20. Saurabh Kumar Pandey (2019) IAAM
21. Saurabh Kumar Pandey (2019) IACSIT
22. Sudhan Majhi (2020) IEEE MDC
23. Sudhan Majhi (2015) IEEE
24. Sudhan Majhi (2020) IEEE TVT
25. Sudhir Kumar (2020) IEEE
26. Sudhir Kumar (2017) ACM
27. Sudhir Kumar (2019) Indian Society for Technical Education (ISTE)
28. Sumanta Gupta (2010) IEEE

Member - Editorial Board

1. Jawar Singh (2019) **Editor** - IETE Technical Review
2. Preetam Kumar (2020) **Editor** - Wireless Networks
3. Preetam Kumar (2020) **Member** - Wireless Personal Communication
4. Saurabh Kumar Pandey (2018) **Associate Editor** - Research & Development in Material Science
5. Saurabh Kumar Pandey (2018) **Guest Editor** - Advances in Optoelectronics
6. Sudhan Majhi (2019) **Senior Editor** - IEEE Communications Letters
7. Sudhan Majhi (2019) **Editor** - IEEE Transactions on Vehicular Technology
8. Sudhan Majhi (2021) **Editor** - IEEE Wireless Communication Letters

Awards & Honours

1. Preetam Kumar (2020) **Academic Excellence Award, JECRC University, Jaipur**
2. Sudhir Kumar (2020) **Elevated to IEEE Senior Member**
3. Saurabh Kumar Pandey (2020) **IEEE Senior Membership**
4. Sudhir Kumar (2021) **The Best Poster Paper Award at 13th International Conference on Communication Systems & Networks (COMSNETS 2021), Bengaluru, India**
5. Udit Satija (2021) **Elevated to IEEE Senior member 2021**
6. Saurabh Kumar Pandey (2021) **Coordinator Head of IEEE Nanotechnology Council Student Chapter at IIT Patna 2021**
7. Saurabh Kumar Pandey (2020) **Panelist in the Vaishvik Bhartiya Vaigyanik (VAIBHAV) Summit session on Sensing Devices organized by the Department of Science & Technology on 12th October 2020**

Fellowships

1. Rajib Jha (2020) Visvesvaraya young faculty
2. Sudhan Majhi (2018) Visvesvaraya Young Faculty Research Fellowship

Sponsored Research Projects

1. Establishing the Center of Excellence in Bihar Govt Polytechnic Colleges, Government of Bihar, Rs 9600.00 Lakhs (PI- Dr. Jawar Singh, Co-PI Dr Pramod K Tiwari and Dr Rajiv Mihsra, CSE)
2. A software tool for planning and design of smart micro power grids (Ministry of Human Resource Development and Ministry of Power, Government of India, Rs.202.19 Lakhs) (PI : Dr. Ranjan Kumar Behera)
3. Application of Non-Convex Game in Demand Side Management of an Electric Utility (SERB, DST, GoI, Rs.6.60 Lakhs) (PI : Dr. Sanjoy Kumar Parida)
4. Artificial Intelligence Driven Microgrid Control and Protection (MHRD, GoI, Rs.33.00 Lakhs) (PI : Dr. Sanjoy Kumar Parida)
5. Decentralized Consensus Filtering for Underwater Target Motion Analysis (NRB, Rs.30.62 Lakhs) (PI: Dr. Shovan Bhaumik)
6. Design and Implementation of Intelligent Receiver over Randomized Environment by Statistical and Machine Learning Approach (MeitY, New Delhi, Rs.65.50 Lakhs) (PI : Dr. Sudhan Majhi)
7. Design of Blind Modulation Classification for MIMO-OFDM and MIMO-SC-FDMA System through FPGA Module and Testbed Implementation (DST, Rs.21.00 Lakhs) (PI : Dr. Sudhan Majhi)
8. Designing cost-efficient codes for Non-Orthogonal Multiple Access (NOMA) for 5G Using Generalized Boolean/Bent Functions (SERB, Rs.6.60 Lakhs) (PI : Dr. Sudhan Majhi)
9. Development of Teaching and Learning Center on Internet of Things (MHRD, GoI, Rs.343.00 Lakhs) (PI : Dr. Sanjoy Kumar Parida)
10. Development of Wearable Intelligent Electroencephalograms (EEG) Signal Analysis IoT-Enabled System for Unsupervised Mental-Health Monitoring and Beha (Indian Council of Medical Research (ICMR), Rs.22.19 Lakhs) (PI : Dr. Udit Satija)
11. Efficient Multicarrier Waveform Design for Next Generation Non-Orthogonal Multiple Access for Wireless Mobile Communication (MeitY, New Delhi, Rs.64.57 Lakhs) (PI : Dr. Preetam Kumar)
12. Geospatial Location Estimation and Navigation in Autonomous Sensor Networks/Smart City (Department of Science and Technology, Government of India , Rs.28.85 Lakhs) (PI : Dr. Sudhir Kumar)
13. Group-IV alloys based nanostructured photonic sensors for near and mid-infrared applications (MHRD, Rs.1130000.00 Lakhs) (PI : Ravi Ranjan, Co-PI Dr. Saurabh Kumar Pandey)

14. IoT based LVRT compatible Protective relays (MHRD, Gol, Rs.0.00 Lakhs) (PI : Amutha, Nalanda College of Engineering, Co-PI: Dr. S. K. Parida, IIT Patna)
15. Leaf Disease detection and severity estimation (Serb Goi, Rs.21.51 Lakhs) (PI : Dr. Rajib Kumar jha)
16. Modeling Simulation and Fabrication of Novel nanowire MOSFET Devices (DST, Rs.47.00 Lakhs) (PI : Dr. Pramod Kumar Tiwari)
17. National Resource Centre on Internet of Things (MHRD, Gol, Rs.38.40 Lakhs) (PI : Dr. Sanjoy Kumar Parida)
18. Passive torpedo tracking using towed array (NPOL, Rs.29.24 Lakhs) (PI : Dr. Shovan Bhaumik)
19. SMDP-C2SD (MeitY, Govt. of India, Rs.215.00 Lakhs) (PI : Dr. Kailash Chandra Ray)
20. Wide Area Multi-Node Distributed Control to Improve Power System Stability for Indian Context (SERB, DST, Gol, Rs.55.22 Lakhs) (PI : Dr. Sanjoy Kumar Parida)
21. Young Faculty Research Fellowship (MEITY, Rs.37.00 Lakhs) (PI : Dr. Sudhan Majhi)
22. Design Development and Characterization of Blue LED and Visible Laser Based Underwater Optical Wireless Communication System (DRDO, Govt. of India, Rs. 23.6 Lacs) (PI: Dr. Sumanta Gupta)
23. Design and Implementation of OAM Assisted Spectrally Efficient WDM Communication System Using Conventional Optical Fibers (IMPRINT-II, SERB, Rs. 76.4 Lacs) (PI: Dr. Sumanta Gupta)
24. Deep Learned Detection and Classification of Multiple Intrusions Using WDM Intensity and Phase Sensitive OTDR in Underwater Environment (DRDO, Govt. of India, Rs. 51.2 Lacs) (PI: Dr. Sumanta Gupta)

Consultancy Projects

1. Redevelopment of Town Hall Project. (Bhagalpur Smart City Limited with letter no. 251/BSCL , Rs.500.00 Lakhs) Consultant Name: Dr. Sudhir Varma, Co-PI: Dr. S. Sivasubramani, Dr. Rajib Kumar Jha, Dr. Kaleem Khan)
2. Technical Vetting of Redevelopment of Town hall, E-Toilet, Night Shelter Projects of Bhagalpur Smart City Limited (Smart City Project, Bhagalpur, Rs.5.07 Lakhs) Consultant Name: Dr. Sudhir Varma, Co PI: Dr. S. Sivasubramani)
3. Third Party Quality Assurance Inspection for CPWD Patna (CPWD (PMCH Hospital Patna), Rs.27.00 Lakhs) Consultant Name: Dr. Ramakrishna Bag, Consultant Name: Dr. Jawar Singh

Patents (filed / granted)

1. Patent Name: An Improved Squirrel Cage Induction Motor With Enhanced Efficiency And Wide Range Of Operating Speed For Application In Electric Vehicle; Patent Owner: Dr. Ranjan Kumar Behera (Application No.: 201631013398 and Status: Granted)
2. Patent Name: Artificial Light Power Generating Solar Panel System; Patent Owner: Dr. Ranjan Kumar Behera (Application No.: 201941049772 and Status: Published)
3. Patent Name: Automatic Booklet scanning machine and its method of working; Patent Owner: Dr. Kailash Chandra Ray (Application No.:1082/KOL/2015 and Status: Granted)
4. Patent Name: Hybrid Solar Tracking System For A Solar Collector And Method Thereof; Patent Owner: Dr. Ahmad Ali (Application No.:202031022971 and Status: Published)
5. Patent Name: Magnetic Gear Box; Patent Owner: Dr. Ranjan Kumar Behera (Application No.:202031041527 and Status: Not Published)

Visits Abroad by Faculty Members

1. Ranjan Kumar Behera - IEEE ICIT 2020 (Bonus Aires, Argentina,) 1 week

Invited Lectures by Faculty Members

1. Demand Side Management in Smart Grids by S. Sivasubramani (Thiagarajar College of Engineering, Madurai) (2021)
2. Mechatronics, Instrumentation, Intelligent and Bio-Inspired Materials (MIIBM-2021) by Saurabh Kumar Pandey
3. Next-Generation Trends for Nanotechnology in CMOS, Photonics, and Neuromorphic Computation by Saurabh Kumar Pandey (2021)
4. Wearable Devices by Saurabh Kumar Pandey (2020)
5. Smart Grid and Big Data Analysis by Saurabh Kumar Pandey (2020)
6. Recent trends in Optical Engineering by Saurabh Kumar Pandey (2020)
7. Recent Trends in Nano-electronics and Optoelectronics (RNO-2020) by Saurabh Kumar Pandey

8. Next-Generation Semiconductor Devices for High-end Applications by Saurabh Kumar Pandey (2020)
9. Modern Trends in Physics & Bio-Photonics by Saurabh Kumar Pandey (2020)
10. Towards 5G and Intelligent Communication by Sudhir Kumar (IGIT, Sarang) (2021)
11. Role of Localization/Positioning in 5G, IoT and E-Health by Sudhir Kumar (VNIT Nagpur) (2021)
12. Information and Communication Technologies for Smart City Applications (ICT4Smart) by Sudhir Kumar (NIT Silchar) (2021)
13. Machine Learning and Android by Sudhir Kumar (SBCET, Jaipur, Rajasthan technical university Kota) (2020)
14. Springer Approved International Conference on Innovations in Cyber Physical System (ICICPS 2020) by Sudhir Kumar (HMR Institute of Technology & Management, Delhi) (2020)
15. Neuronal Dynamics and Neuromorphic Computing by Sudhir Kumar (IIT Patna) (2020)
16. Artificial Intelligence & 5G Communication Technology by Sudhir Kumar (Poornima College of Engineering, Jaipur) (2020)
17. The Role of Artificial Intelligence in Data Science and IoT Applications by Sudhir Kumar (Indira Gandhi Institute of Technology (IGIT) Sarang) (2020)
18. Opportunities and Challenges in Emerging Technologies of Electrical Power System by Sudhir Kumar (Jabalpur Engineering College) (2020)
19. Deep learning & Computational Intelligence in Internet by Sudhir Kumar (G.B.Pant Institute Of Engineering & Technology, Pauri- Garhwal) (2020)
20. Interplay of IoT and Machine Learning in Smart Healthcare System by Sudhir Kumar (IIT Patna) (2020)
21. Applications of IoT by Sudhir Kumar (Joint NITTTR Chandigarh - GRIET Hyderabad) (2020)
22. Recent Advancement in Signal Processing, Machine Learning and Next Generation Wireless Access Tech by Sudhir Kumar (Indira Gandhi Institute of Technology (IGIT) Sarang) (2020)
23. Training Programme on Signal Analysis, Machine Learning and Applications using Python and Matlab by Sudhir Kumar (Ramrao Adik Institute of Technology, Nerul, Navi Mumbai) (2020)
24. Online Faculty Development Program on Internet of Things by Sudhir Kumar (NIT Jamshedpur) (2020)
25. Ultra-Low Energy and High Speed LIF Neuron for Spiking Neural Networks by Jawar Singh (IIT Roorkee) (2020)
26. Machine Learning for Bio- medical Signals, AICTE-sponsored STTP by Dr. Udit Satija (Malla Reddy Engineering College for Women, Secunderabad) (2021)
27. Machine Learning for Biomedical Signals sponsored by TEQIP-III by Dr. Udit Satija (SVNIT Surat) (2020)
28. IoT-Enabled Wearable Devices for Unsupervised Health Monitoring sponsored by AICTE-ATAL by Dr. Udit Satija (NIT Jamshedpur) (2020)
29. Machine Learning for Bio- Signal Analysis, AICTE-sponsored FDP by Dr. Udit Satija (Cochin University of Science and Technology) (2020)
30. Deep Learning for Biomedical Signals AICTE-sponsored STTP by Dr. Udit Satija (Malla Reddy Engineering College for Women, Secunderabad) (2021)
31. IoT for Smart Healthcare sponsored by TEQIP-III by Dr. Udit Satija (MIT Muzaffarpur, Bihar) (2021)
32. Wearable Devices and Internet of Things: Current Trends and Challenges by Dr. Udit Satija (Malla Reddy Engineering College for Women, Secunderabad) (2021)
33. Quality-Aware Analysis of Deep Learning Based Healthcare Systems by Dr. Udit Satija (Malla Reddy Engineering College for Women, Secunderabad) (2021)
34. Advance Time-Frequency Signal Processing Techniques by Dr. Udit Satija (Malla Reddy Engineering College for Women, Secunderabad) (2021)
35. Blind Modulation Classification for Single Carrier System, MIMO and OFDM System by Sudhan Majhi (ETC Department of IGIT, Sarang) (2021)
36. 6G Communication and its Research Directions by Sudhan Majhi (ETC Department of IGIT, Sarang) (2021)
37. Intelligent Receiver Design and Future Communication for 6G Technology by Sudhan Majhi (IETE Mysuru Centre) (2021)
38. Intelligent Receiver Design and Future Communication for 6G Technology by Sudhan Majhi (Sri Siddhartha Institute of Technology) (2021)
39. Machine Learning and Deep Learning Techniques for Abnormal Human Activity Recognition by Maheshkumar H. Kolekar (IntConf FTNCT, at Southern Federal University, Taganrog, Russia) (2020)
40. Recent Development in COVID 19 Detection using Image Processing Techniques by Maheshkumar H. Kolekar (NIT Uttarakhand) (2020)
41. Self-Heating in MG Devices by Pramod Kumar Tiwari (NIT Meghalaya) (2021)
42. How to Pitch an Idea for Incubation Support by Pramod Kumar Tiwari (BIT Deoghar) (2021)

43. Multicarrier Communication by Preetam Kumar (IGIT Sarang) (2021)
44. 5G: Challenges and Enabling Technologies by Preetam Kumar (NIT Durgapur) (2020)
45. 5G and Beyond by Preetam Kumar (Arhus University, Denmark) (2021)
46. All Stabilizing Controller Design for DC DC Converter by Ahmad Ali (NIT Patna) (2021)
47. Model Free Control Techniques for DC DC Converter by Ahmad Ali (NIT Patna) (2020)
48. All Stabilizing Controller Design for DC DC Converter by Ahmad Ali (IIT Ropar) (2020)
49. 5G Technologies by Preetam Kumar (NIT Silchar) (2020)
50. 5G and Beyond by Preetam Kumar (JECRC Jaipur) (2020)
51. Simulation and Advance Control of Power Converters for Solar and Electric Drives by Ranjan Kumar Behera (NIT Sikkim) (2021)
52. Mind Secret by Ranjan Kumar Behera (Department of Computer Science and Engineering, Government Engineering College, Palakkad) (2021)
53. Simulation and Advance Control of Power Converters for Solar and Electric Drives by Ranjan Kumar Behera (Department of Electrical Engineering, EINSTEIN Academy of Technology and Management, Bhubaneswar) (2021)
54. Mind Secret by Ranjan Kumar Behera (Department of Electrical Engineering, NIT Jaipur) (2021)
55. Advanced Power Converter Control for Solar and Drives by Ranjan Kumar Behera (Department of Electrical Engineering, Sanjay Ghodawat University, Kolhapur) (2021)
56. Story IoT by Ranjan Kumar Behera (Department of Electrical Engineering, Rajasthan Technical University Kota) (2021)
57. Advanced Power Converter Control for Solar and Wind Applications by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, St. Peters Engineering College (SPEC), Hyderabad, Telangana) (2021)
58. Simulation and Advance Control of Power Converters for Solar and Electric Drives by Ranjan Kumar Behera (Department of Electrical Engineering, NIT Patna) (2021)
59. Advanced Power Converter Control for Solar and Drives by Ranjan Kumar Behera (Department of Electrical Engineering, IIT Bhilai) (2021)
60. Advanced Power Converter Control for Solar and Wind Applications by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, St. Peters Engineering College (SPEC), Hyderabad, Telangana) (2021)
61. Advanced Power Converter Control for Solar and Drives by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, St. Peters Engineering College (SPEC), Hyderabad, Telangana) (2021)
62. High Performance 3-phase and Multiphase Induction Motor Drives for Traction Applications by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, Gudlavalleru Engineering College, Gudlavalleu, Andhra Pradesh) (2021)
63. Advanced Power Converter Control for Solar and Drives by Ranjan Kumar Behera (Department of Electrical Engineering, NIT Arunachal Pradesh) (2021)
64. Advanced Power Converter Control for Solar and Wind Applications by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, Lendi Institute of Engineering and Technology, Vizianagaram) (2021)
65. Smart Energy Systems by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, Lendi Institute of Engineering and Technology, Vizianagaram) (2021)
66. Advanced Power Converter Control for Solar and Wind Applications by Ranjan Kumar Behera (Department of Electrical Engineering, Gandhi Institute for Education & Technology, Bhubaneswar, Khurda) (2021)
67. Smart Energy System by Ranjan Kumar Behera (Department of Electrical Engineering, Gandhi Institute for Education & Technology, Bhubaneswar, Khurda) (2021)
68. Smart Energy System by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, IPS Academy, Institute of Engineering and Science, Indore (M.P.) (2021)
69. Advanced Power Converter Control for Solar Applications by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, Government College of Engineering, Gaya, Bihar) (2021)
70. Advanced Power Converter Control for Solar and Wind Applications by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, St. Peters Engineering College (SPEC), Hyderabad, Telangana) (2021)
71. Three-phase/Multiphase Industrial Motor Drives by Ranjan Kumar Behera (Department of Electrical Engineering, GH Rasoni College of Engineering Nagpur) (2021)
72. Design and Fabrication of Power Electronics Circuits by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, B. V. Raju Institute of Technology, Vishnupur, Narsapur, Medak District – 502313, Telangana) (2021)
73. Story of IoT by Ranjan Kumar Behera (Department of Electrical Engineering, Rajkiya Engineering College Sonbhadra UP) (2021)

74. Advanced Power Converter Control for Solar by Ranjan Kumar Behera (Department of Electrical Engineering, GCET Jammu and UIET Panjab University Chandigarh) (2021)
75. Three-phase/Multiphase Industrial Motor Drives by Ranjan Kumar Behera (Department of Electrical Engineering, Department of Electrical and Electronics Engineering, National Institute of Technology Karnataka, Surathkal Mangaluru, Karnataka) (2021)
76. Smart Energy Systems by Ranjan Kumar Behera (Department of Electrical Engineering, National Institute of Technology Raipur, Chhattisgarh) (2021)
77. Advanced Power Converter Control for Solar and Wind Applications by Ranjan Kumar Behera (Department of Electrical Engineering, Department of Electrical Engineering, National Institute of Technology Raipur, Chhattisgarh) (2021)
78. Story of IoT by Ranjan Kumar Behera (Department of Electronics Engineering, IGIT Saranga, Orissa) (2021)
79. Advance Control of Power Converters for Solar by Ranjan Kumar Behera (Department of Electrical Engineering, Department of Electrical Engineering, CAPGS, BPUT in association with VTU, AKU) (2021)
80. Story of IoT by Ranjan Kumar Behera (Patna Women's College, Patna Bihar) (2020)
81. Smart Microgrid System Design and Integration by Ranjan Kumar Behera (Department of Electrical Engineering, IGIT Saranga, Orissa) (2020)
82. Smart Energy System by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, Gudlavalleu Engineering College, Gudlavalleu, Andhra Pradesh) (2020)
83. How to Deal with Reverses of Life by Ranjan Kumar Behera (CMR Institute of Technology, Bangalore) (2020)
84. Dual Motor Drives for EV by Ranjan Kumar Behera (Department of Electrical Engineering, NIT Patna) (2020)
85. Mind Secret by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering, Lendi Institute of Engineering and Technology, Vizianagaram) (2020)
86. Medical Drives by Ranjan Kumar Behera (Department of Electrical & Electronics Engineering Raja Rajeswari College of Engineering, Bengaluru) (2020)
87. Application of IoT for Solar Tree, Smart Home and Transmission Line by Ranjan Kumar Behera (Department of Electrical Engineering, NIT Bhopal) (2020)
88. Design of Electric Vehicles by Ranjan Kumar Behera (Department of Electrical and Electronics Engineering, Sri Venkateswara College Of Engineering, Sriperumbudur) (2020)
89. Self-Healing Network by Sanjoy Kumar Parida (NIT Durgapur) (2020)
90. Microgrid Stability and Protection by Sanjoy Kumar Parida (Gaya Engineering College) (2020)
91. Microgrid Small Signal Stability by Sanjoy Kumar Parida (University Institute of Engineering and Technology ,PU, Chandigarh) (2020)
92. Frequency and Voltage Data Processing Based Feeder Protection in Medium Voltage Microgrid by Sanjoy Kumar Parida (EMTP Virtual User Conference) (2020)
93. Multi-rate Signal Processing System: Basic Architectural Design and Implementation Methods by Kailash Chandra Ray (CET Bhubaneswar) (2020)
94. Advanced Microcontroller and Interfacing Techniques for IOT Devices by Kailash Chandra Ray (Govt. College of Engg., Kalahandi, Bhawanipatna) (2021)
95. Breast cancer detection and classification by Rajib Kumar Jha (G.B.Pant Institute Of Engineering & Technology, Pauri- Garhwal) (2020)
96. Stochastic resonance: applications in signal and image processing by Rajib Kumar Jha (A. K. Garg college of Engg. Noida) (2020)
97. Breast cancer detection and classification by Rajib Kumar Jha (A. K. Garg college of Engg. Noida) (2020)
98. The Kalman Filter: An introduction and applications by Shovan Bhaumik (2020)

Books Published

1. Chakraborty, C., Banerjee, A., Kolekar, M.H., Garg, L., Chakraborty, B. (Eds.). **Internet of Things for Healthcare Technologies**. Springer, 2021. ISBN: 978-981-15-4111-7
2. Singh, P.K., Noor, A., Kolekar, M.H., Tanwar, S., Bhatnagar, R.K., Khanna, S. (Eds.). **Evolving Technologies for Computing, Communication and Smart World: Proceedings of ETCCS 2020**. Springer, 2021. ISBN 978-981-15-7803-8
3. Singh, P.K., Singh, Y., Kolekar, M.H., Kar, A.K., Chhabra, J.K., Sen, A. (Eds.). **Recent Innovations in Computing: Proceedings of ICRIC 2020**. Springer, 2021. ISBN 978-981-15-8296-7
4. Vinod Kumar, Ranjan Kumar Behera, Dheeraj Joshi, Ramesh Bansal. **Power Electronics, Drives, and Advanced Applications**. CRC Press, 2020. ISBN: 9781351665995

Short-Term Courses, Training Programmes and Workshops organised

1. Interplay of IoT and Machine Learning in Smart Healthcare System by Dr. Sudhir Kumar and Dr. Jawar Singh (6th -8th July, 2020) (Self sponsored)
2. Neuronal Dynamics and Neuromorphic Computing by Dr. Sudhir Kumar, Dr. Jimson Mathew and Dr. Jawar Singh (19th- 23rd October 2020) (Self sponsored)
3. Modern Trends and Developments in Semiconductor Microelectronics" Dr. Saurabh Kumar Pandey and dr. Jawar Singh (October 09 – October 11, 2020) (self-sponsored)
4. Industrial Wireless Sensor Networks and IoT" Dr. Saurabh Kumar Pandey and dr. Rajiv Misra (March 23 – March 25, 2021) (self-sponsored)

Journal Publications (Scopus – Indexed)

1. Haque Z., Kumar V.S., Majhi S. (2021). A Closed-Form Secrecy Outage Probability for mmWave Communication by Ordered Transmit Beamforming. *IEEE Communications Letters*, 25(03). 721-725. DOI: 10.1109/LCOMM.2020.3034809
2. Kumar Panda A., Chandra Ray K., (2020). A coupled variable input LCG method and its VLSI architecture for pseudorandom bit generation. *IEEE Transactions on Instrumentation and Measurement*, 69(04), 1011-1019. DOI: 10.1109/TIM.2019.2909248
3. Sarkar P., Majhi S., Liu Z. (2020). A Direct and Generalized Construction of Polyphase Complementary Sets with Low PMEPR and High Code-Rate for OFDM System. *IEEE Transactions on Communications*, 68(10), 6245-6262. DOI: 10.1109/TCOMM.2020.3007390
4. Roy A., Sarkar P., Majhi S. (2021). A Direct Construction of q-Ary 2-D Z-Complementary Array Pair Based on Generalized Boolean Functions. *IEEE Communications Letters*, 25(03). 706-710. DOI: 10.1109/LCOMM.2020.3038726
5. Sarkar P., Majhi S. (2020). A Direct Construction of Optimal ZCCS with Maximum Column Sequence PMEPR Two for MC-CDMA System. *IEEE Communications Letters*, 25(02), 337-341. DOI: 10.1109/LCOMM.2020.3029204
6. Chouksey M., Jha R.K., Sharma R. (2020). A fast technique for image segmentation based on two Meta-heuristic algorithms. *Multimedia Tools and Applications*, 79(27-28), 19075-19127. DOI: 10.1007/s11042-019-08138-3
7. Mishra M.K., Parida S.K. (2020). A Game Theoretic Approach for Demand-Side Management Using Real-Time Variable Peak Pricing Considering Distributed Energy Resources. *IEEE Systems Journal*. DOI: 10.1109/JSYST.2020.3033128
8. Kalim M.I., Ali A. (2021). A graphical approach for controller design with desired stability margins for a DC–DC boost converter. *IET Power Electronics*, 14(07), 1323-1335. DOI: 10.1049/pel2.12102
9. Kamal N., Singh J. (2021). A Highly Scalable Junctionless FET Leaky Integrate-and-Fire Neuron for Spiking Neural Networks. *IEEE Transactions on Electron Devices*, 68(04), 1633-1638. DOI: 10.1109/TED.2021.3061036
10. Chouksey M., Jha R.K. (2021). A Joint Entropy for Image Segmentation Based on Quasi Opposite Multiverse Optimization. *Multimedia Tools and Applications*, 80(07), 10037-10074. DOI: 10.1007/s11042-020-09851-0
11. Pandey A., Sequeria R., Kumar P., Kumar S. (2020). A Multistage Deep Residual Network for Biomedical Cyber-Physical Systems. *IEEE Systems Journal*, 14(02), 1953-1962. DOI: 10.1109/JSYST.2019.2923670
12. Chouksey M., Jha R.K. (2021). A multiverse optimization based colour image segmentation using variational mode decomposition. *Expert Systems with Applications*, 171. DOI: 10.1016/j.eswa.2021.114587
13. Samad A., Majhi S. (2020). A Near-Optimal and Low-Complex Joint Multiuser Detection for QCSS-MC-CDMA System. *IEEE Systems Journal*, 15(02), 1594-1603. DOI: 10.1109/JSYST.2020.3001045
14. Punetha D., Kar M., Pandey S.K. (2020). A new type low-cost, flexible and wearable tertiary nanocomposite sensor for room temperature hydrogen gas sensing. *Scientific Reports*, 10(01). DOI: 10.1038/s41598-020-58965-w
15. Kalita K., Anand S., Parida S.K. (2021). A Novel Non-Iterative Fault Location Algorithm for Transmission Line with Unsynchronized Terminal. *IEEE Transactions on Power Delivery*, 36(03), 1917-1920. DOI: 10.1109/TPWRD.2021.3054235
16. Pandey A., Tiwary P., Kumar S., Das S.K. (2020). Adaptive Mini-Batch Gradient Ascent based Localization for Indoor IoT Networks under Rayleigh Fading Conditions. *IEEE Internet of Things Journal*. DOI: 10.1109/JIOT.2020.3047982
17. Hasan M.A., Parida S.K. (2020). Adaptive modulation index-based controller for suppression of circulating current in parallel inverters of autonomous microgrid. *International Transactions on Electrical Energy Systems*. DOI: 10.1002/2050-7038.12701

18. Srivastava A., Parida S.K. (2020). Adaptive Protection Strategy in a Microgrid Under Disparate Operating Modes. *Electric Power Components and Systems*, 48(08), 781-798. DOI: 10.1080/15325008.2020.1821834
19. Saini M., Satija U., Upadhyay M.D. (2020). Effective automated method for detection and suppression of muscle artefacts from single-channel EEG signal. *Healthcare Technology Letters*, 7(02), 35-40. DOI: 10.1049/htl.2019.0053
20. Singh J.K., Behera R.K. (2021). An Improved Hysteresis Current Controller for Grid-Connected Inverter System to Address Power Quality Issues at Reduced Switching Frequency. *IEEE Transactions on Industry Applications*, 57(02), 1892-1901. DOI: 10.1109/TIA.2021.3052426
21. Chikondra B., Muduli U.R., Behera R.K. (2021). An Improved Open-Phase Fault-Tolerant DTC Technique for Five-Phase Induction Motor Drive Based on Virtual Vectors Assessment. *IEEE Transactions on Industrial Electronics*, 68(06), 4598-4609. DOI: 10.1109/TIE.2020.2992018
22. Palisetty R., Panda A.K., Ray K.C. (2021). ASIC Implementation of Low PAPR Multidevice Variable-Rate Architecture for IEEE 802.11ah. *IEEE Transactions on Instrumentation and Measurement*, 70. DOI: 10.1109/TIM.2020.3045809
23. Nandan N., Majhi S., Wu H. (2021). Beamforming and Power Optimization for Physical Layer Security of MIMO-NOMA Based CRN Over Imperfect CSI. *IEEE Transactions on Vehicular Technology*. DOI: 10.1109/TVT.2021.3079136
24. Jha C.K., Kolekar M.H. (2020). Cardiac arrhythmia classification using tunable Q-wavelet transform based features and support vector machine classifier. *Biomedical Signal Processing and Control*, 59. DOI: 10.1016/j.bspc.2020.101875
25. Kumari S., Srinivas K.K., Kumar P. (2021). Channel and Carrier Frequency Offset Equalization for OFDM Based UAV Communications Using Deep Learning. *IEEE Communications Letters*, 25(03), 850-853. DOI: 10.1109/LCOMM.2020.3036493
26. Kumar R.R., Raja Sekhar M., Raghvendra, Laha R., Pandey S.K. (2020). Comparative studies of ZnO thin films grown by electron beam evaporation, pulsed laser and RF sputtering technique for optoelectronics applications. *Applied Physics A: Materials Science and Processing*, 126(11). DOI: 10.1007/s00339-020-04046-8
27. Akhtar M.S., Adhya A., Gupta J., Majhi S. (2021). Cost-optimal architecture design for adaptive multi-stage TWDM-PON with PtP WDM overlay. *Optical Engineering*, 60(01). DOI: 10.1117/1.OE.60.1.015106
28. Shubham, Raghvendra, Pathak C., Pandey S.K. (2020). Design, Performance, and Defect Density Analysis of Efficient Eco-Friendly Perovskite Solar Cell. *IEEE Transactions on Electron Devices*, 67(07), 2837-2843. DOI: 10.1109/TED.2020.2996570
29. Pandey S.K., Somay S. (2020). Device Engineering Approach Toward Stable, Efficient, and Eco-Friendly Perovskite Solar Cell. *IEEE Transactions on Electron Devices*, 68(03), 1142-1148. DOI: 10.1109/TED.2020.3047879
30. Khan P., Reddy B.S.K., Pandey A., Kumar S., Youssef M. (2020). Differential Channel-State-Information-Based Human Activity Recognition in IoT Networks. *IEEE Internet of Things Journal*, 7(11), 11290-11302. DOI: 10.1109/JIOT.2020.2997237
31. Sharma N., Kolekar M.H., Jha K. (2021). EEG based dementia diagnosis using multi-class support vector machine with motor speed cognitive test. *Biomedical Signal Processing and Control*, 63. DOI: 10.1016/j.bspc.2020.102102
32. Dey A., Pattanayak P., Gurjar D.S., Kumar P. (2021). Efficient pilot reuse algorithms for massive MIMO cellular system. *International Journal of Communication Systems*, 34(03). DOI: 10.1002/dac.4682
33. Jha C.K., Kolekar M.H. (2021). Empirical Mode Decomposition and Wavelet Transform Based ECG Data Compression Scheme. *IRBM*, 42(01), 65-72. DOI: 10.1016/j.irbm.2020.05.008
34. Raja G.L., Ali A. (2021). Enhanced tuning of Smith predictor based series cascaded control structure for integrating processes. *ISA Transactions*, 114, 191-205. DOI: 10.1016/j.isatra.2020.12.045
35. Punetha D., Pandey S.K. (2020). Enhancement and Optimization in Sensing Characteristics of Ammonia Gas Sensor Based on Light Assisted Nanostructured WO₃ Thin Film. *IEEE Sensors Journal*, 20(24), 14617-14623. DOI: 10.1109/JSEN.2020.3009661
36. Vemula N.K., Parida S.K. (2020). Enhancement of small signal stability in inverter-dominated microgrid with optimal internal model controller. *International Transactions on Electrical Energy Systems*, 30(08). DOI: 10.1002/2050-7038.12471
37. Bhatt S., Shukla R., Pathak C., Pandey S.K. (2021). Evaluation of performance constraints and structural optimization of a core-shell ZnO nanorod based eco-friendly perovskite solar cell. *Solar Energy*, 215, 473-481. DOI: 10.1016/j.solener.2020.12.069

38. Kumar R.R., Raghvendra, Pandey S.K., Pandey S.K. (2021). Experimental investigation and comparative analysis of electron beam evaporated ZnO/MgxZn1-xO/CdxZn1-xO thin films for photodiode applications. *Superlattices and Microstructures*, 150. DOI: 10.1016/j.spmi.2020.106787
39. Trivedi V.K., Kumar P. (2020). Fractional Fourier domain equalization for DCT based OFDM system with CFO. *Digital Signal Processing: A Review Journal*, 100. DOI: 10.1016/j.dsp.2020.102687
40. Panda A.K., Palisetty R., Ray K.C. (2020). High-Speed Area-Efficient VLSI Architecture of Three-Operand Binary Adder. *IEEE Transactions on Circuits and Systems I: Regular Papers*, 67(11), 3944-3953. DOI: 10.1109/TCSI.2020.3016275
41. Suman S., Punetha D., Pandey S.K. (2021). Improvement in Sensing Characteristics of Silicon Microstructure based MEMS Capacitive Sensor for Automotive Applications. *Silicon*, 13(05), 1475-1483. DOI: 10.1007/s12633-020-00540-z
42. Muduli U.R., Beig A.R., Jaafari K.A., Alsawalhi J.Y., Behera R.K. (2021). Interrupt-Free Operation of Dual-Motor Four-Wheel Drive Electric Vehicle under Inverter Failure. *IEEE Transactions on Transportation Electrification*, 7(01), 329-338. DOI: 10.1109/TTE.2020.2997354
43. Kumari T., Singh J., Tiwari P.K. (2020). Investigation of Ring-TFET for Better Electrostatics Control and Suppressed Ambipolarity. *IEEE Transactions on Nanotechnology*, 19, 829-836. DOI: 10.1109/TNANO.2020.3038655
44. Moparthy S., Tiwari P.K., Samoju V.R., Saramakala G.K. (2020). Investigation of Temperature and Source/Drain Overlap Impact on Negative Capacitance Silicon Nanotube FET (NC Si NTFET) with Sub-60mV/decade Switching. *IEEE Transactions on Nanotechnology*, 19, 800-806. DOI: 10.1109/TNANO.2020.3033802
45. Kumar P., Bhaskar D.V., Muduli U.R., Beig A.R., Behera R.K. (2020). Iron Loss Modelling with Sensorless Predictive Control of PMBLDC Motor Drive for Electric Vehicle Application. *IEEE Transactions on Transportation Electrification*, DOI: 10.1109/TTE.2020.3036991
46. Sharma N., Kolekar M.H., Jha K. (2020). Iterative Filtering Decomposition Based Early Dementia Diagnosis Using EEG with Cognitive Tests. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 28(09), 1890-1898. DOI: 10.1109/TNSRE.2020.3007860
47. Trivedi V.K., Kumar P. (2020). Low complexity interference compensation for DFRFT-based OFDM system with CFO. *IET Communications*, 14(14), 2270-2281. DOI: 10.1049/iet-com.2019.1196
48. Trivedi V.K., Kumar P. (2020). Low complexity joint equalization and interference compensation in fractional Fourier domain for DCT-OFDM system with CFO. *Digital Signal Processing: A Review Journal*, 107. DOI: 10.1016/j.dsp.2020.102863
49. Dash D.P., Kolekar M.H., Jha K. (2020). Multi-channel EEG based automatic epileptic seizure detection using iterative filtering decomposition and Hidden Markov Model. *Computers in Biology and Medicine*, 116. DOI: 10.1016/j.combiomed.2019.103571
50. Kumar S. (2020). Nanomachine Localization in a Diffusive Molecular Communication System. *IEEE Systems Journal*, 12(02), 3011-3014. DOI: 10.1109/JSYST.2019.2963790
51. Das S., Parampalli U., Majhi S., Liu Z., Budisin S. (2020). New optimal Z-Complementary code sets based on generalized paraunitary matrices. *IEEE Transactions on Signal Processing*, 68. DOI: 10.1109/TSP.2020.3021977
52. Lloyds Raja G., Ali A. (2021). New PI-PD Controller Design Strategy for Industrial Unstable and Integrating Processes with Dead Time and Inverse Response. *Journal of Control, Automation and Electrical Systems*, 32(02), 266-280. DOI: 10.1007/s40313-020-00679-5
53. Anand S., Kalita K., Parida S.K. (2020). Novel phasor sequence-based fault detection scheme for wide-area backup protection of series-compensated line. *IET Generation, Transmission and Distribution*, 14(26), 6417-6426. DOI: 10.1049/iet-gtd.2020.0285
54. Pandey S.K., Somay S. (2020). Numerical Analysis of rGO/Silver-Nanowire-Based Single-Crystal Perovskite Solar Cell. *IEEE Transactions on Electron Devices*, 67(10), 4321-4327. DOI: 10.1109/TED.2020.3014272
55. Bhamidi L., Sivasubramani S. (2020). Optimal Planning and Operational Strategy of a Residential Microgrid with Demand Side Management. *IEEE Systems Journal*, 14(02), 2624-2632. DOI: 10.1109/JSYST.2019.2918410
56. Bhamidi L., Sivasubramani S. (2021). Optimal Sizing of Smart Home Renewable Energy Resources and Battery under Prosumer-Based Energy Management. *IEEE Systems Journal*, 15(01), 105-113. DOI: 10.1109/JSYST.2020.2967351
57. Tiwari R.K., Bhaumik S., Date P., Kirubarajan T. (2020). Particle filter for randomly delayed measurements with unknown latency probability. *Sensors*, 20(19), 1-25. DOI: 10.3390/s20195689
58. Chikondra B., Muduli U.R., Behera R.K. (2020). Performance Comparison of Five-Phase Three-Level NPC to Five-Phase Two-Level VSI. *IEEE Transactions on Industry Applications*, 56(04), 3767-3775. DOI: 10.1109/TIA.2020.2988014
59. Prakash A., Kumar K., Parida S.K. (2020). PIDF(1+FOD) controller for load frequency control with sssc and ac-dc tie-line in deregulated environment. *IET Generation, Transmission and Distribution*, 14(14), 2751-2762. DOI: 10.1049/iet-gtd.2019.1418

60. Sharma S., Verma V., Behera R.K. (2020). Real-Time Implementation of Shunt Active Power Filter with Reduced Sensors. *IEEE Transactions on Industry Applications*, 56(02), 1850-1861. DOI: 10.1109/TIA.2019.2957734
61. Kamal A.K., Singh J. (2020). Simulation-Based Ultralow Energy and High-Speed LIF Neuron Using Silicon Bipolar Impact Ionization MOSFET for Spiking Neural Networks. *IEEE Transactions on Electron Devices*, 67(06), 2600-2606. DOI: 10.1109/TED.2020.2985076
62. Kumar S., Singh Y., Singh B., Tiwari P.K. (2020). Simulation study of dielectric modulated dual channel trench gate TFET-Based biosensor. *IEEE Sensors Journal*, 20(21), 12565-12573. DOI: 10.1109/JSEN.2020.3001300
63. Akhtar M.J., Behera R.K. (2021). Space Vector Modulation for Distributed Inverter-Fed Induction Motor Drive for Electric Vehicle Application. *IEEE Journal of Emerging and Selected Topics in Power Electronics*, 9(01), 379-389. DOI: 10.1109/JESTPE.2020.2968942
64. Kumar S., Das S.K. (2020). Target detection and localization methods using compartmental model for internet of things. *IEEE Transactions on Mobile Computing*, 19(09), 2234-2249. DOI: 10.1109/TMC.2019.2921537
65. Jha C.K., Kolekar M.H. (2021). Tunable Q-wavelet based ECG data compression with validation using cardiac arrhythmia patterns. *Biomedical Signal Processing and Control*, 66. DOI: 10.1016/j.bspc.2021.102464
66. Das S., Majhi S. (2020). Two-dimensional Z-Complementary array code sets based on matrices of generating polynomials. *IEEE Transactions on Signal Processing*, 68, 5519-5532. DOI: 10.1109/TSP.2020.3021986
67. Ahmad S., Ali A. (2021). Unified Disturbance-Estimation-Based Control and Equivalence with IMC and PID: Case Study on a DC-DC Boost Converter. *IEEE Transactions on Industrial Electronics*, 68(06), 5122-5132. DOI: 10.1109/TIE.2020.2987269
68. Satyanarayana G.S.R., Majhi S., Das S.K. (2021). A Vehicle Detection Technique Using Binary Images for Heterogeneous and Lane-Less Traffic. *IEEE Transactions on Instrumentation and Measurement*, 70. DOI: 10.1109/TIM.2021.3062412
69. Sekhar M.R., Kumar R.R., Kumari S., Laha R., Pandey S.K., Kar M. (2021). Visible light photoconductivity studies of gold nanoparticle embedded ZnO thin films for photo detector application, *Semiconductor Science and Technology*, 35(11). DOI: 10.1088/1361-6641/abac94
70. Saini M., Satija U., Upadhyay M.D. (2020). Wavelet Based Waveform Distortion Measures for Assessment of Denoised EEG Quality with Reference to Noise-Free EEG Signal. *IEEE Signal Processing Letters*, 27, 1260-1267. DOI: 10.1109/LSP.2020.3006417
71. Kumar A., Gupta T.V.K., Jha R.K., Ghosh S.K. (2021). Wear analysis of abrasive waterjet nozzle using suprathreshold stochastic resonance technique. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*, 235(02), 499-504. DOI: 10.1177/0954408920968354
72. Sarkar P., Roy A., Majhi S. (2020). Construction of Z-Complementary Code Sets with Non-Power-of-Two Lengths Based on Generalized Boolean Functions. *IEEE Communications Letters*, 24(08), 1607-1611. DOI: 10.1109/LCOMM.2020.2987625
73. Kaity A., Shubham, Singh S., Pandey S.K. (2021). Optimal design and photovoltaic performance of eco friendly, stable and efficient perovskite solar cell. *Superlattices and Microstructures*, 156. DOI: 10.1016/j.spmi.2021.106972
74. Ranjan R., Pareek P., Das M.K., Pandey S.K. (2021). Numerical design and frequency response of MQW transistor lasers based entirely on group IV alloys. *Journal of Computational Electronics*. DOI: 10.1007/s10825-021-01732-5
75. Shukla R., Kumar R.R., Pandey S.K. (2021). Theoretical Study of Charge Carrier Lifetime and Recombination on the Performance of Eco-Friendly Perovskite Solar Cell. *IEEE Transactions on Electron Devices*. DOI: 10.1109/TED.2021.3078063
76. Ansari, M.H.R., Singh, J. (2020). Capacitorless 2T-DRAM for Higher Retention Time and Sense Margin. *IEEE Transactions on Electron Devices*, 67(02), 902-906. DOI: 10.1109/TED.2020.2963995
77. Subhradeep Pal, Sumanta Gupta, Nonlinear performance and small signal model of junction-less microring modulator, *Optics Communications*, Volume 459, 2020, 124984, ISSN 0030-4018, <https://doi.org/10.1016/j.optcom.2019.124984>.
78. Sneha Kumari, Sumanta Gupta, Performance Estimation of Hybrid Plasmonic Waveguide in Presence of Stress. *Plasmonics* 16, 359-370 (2021). <https://doi.org/10.1007/s11468-020-01279-4>
79. Debi Pada Jana, Sumanta Gupta, Machine learning enabled detection for OOK-PD-NOMA system over standard single mode fiber, *Optics Communications*, Volume 473, 2020, 126049, ISSN 0030-4018, <https://doi.org/10.1016/j.optcom.2020.126049>
80. Subhradeep Pal, Abhishek Kumar, Sumanta Gupta, PAM-4 generation using an electrostatic doping aided single silicon microring modulator driven by two binary electrical signals, *Optik*, Volume 231, 2021, 166373, ISSN 0030-4026, <https://doi.org/10.1016/j.ijleo.2021.166373>.

81. Debi P. Jana and Sumanta Gupta "K-means clustering-based detection for WDM PD-NOMA system with mixed fiber types," *Optical Engineering* 60(8), 086109 (2021). <https://doi.org/10.1117/1.OE.60.8.086109>
82. Sneha Kumari, Sumanta Gupta, Effect of stress and groove geometry on the performance of an IBG filter with Si₃N₄-filled corrugations, *Photonics and Nanostructures - Fundamentals and Applications*, Volume 46, 2021, 100955, ISSN 1569-4410, <https://doi.org/10.1016/j.photonics.2021.100955>.

Journal Publications (Other)

1. Khan, P., Khan, Y., Kumar, S. (2021). Activity-based Tracking and Stabilization of Human Heart Rate using Fuzzy FO-PID Controller. *IEEE Journal of Emerging and Selected Topics in Industrial Electronics*. DOI: 10.1109/JESTIE.2021.3066902
2. Narayana, S., Kumar, N., Singh, Y.K. (2021). Constant absolute bandwidth tunable asymmetric order dual-band BPF with reconfigurable bandwidth using mode control technique. *IET Microwaves, Antennas & Propagation*, 15(02), 253-270. DOI: 10.1049/mia2.12041
3. Majhi, S. (2020). Intelligent and secure transceiver design and implementation for future wireless communication. *CSI Transactions on ICT*. DOI:10.1007/s40012-020-00288-2
4. Rahman, M.A., Jha, R.K. (2021). Multi-directional Gabor Filter Based Approach for Pectoral Muscle Boundary Detection. *IEEE Transactions on Radiation and Plasma Medical Sciences*. DOI: 10.1109/TRPMS.2021.3058157
5. Kumar, S. and Jha, R.K. (2020). Research work under Visvesvaraya YFRF. *CSI Transactions on ICT*, 8(12). DOI:10.1007/s40012-020-00307-2

Conference Papers/Book Chapters

1. Sneha, S., Kumar, R. and Behera, R.K. (2020). A Low Cost Smart Solar DC Nano-grid for Isolated Rural Electrification: Cyber Physical System Design and Implementation. *ICMIB 2020*, IGIT Saranga.
2. Muduli, U.R., Behera, R.K. (2020). A Modified High Gain Boost TNPC Inverter with Neutral Point Balancing for Three-Phase Induction Motor Driven Electric Vehicle. *9th IEEE International Conference on Power Electronics, Drives and Energy Systems, PEDES 2020*. DOI: 10.1109/PEDES49360.2020.9379697
3. Chaudhari, M.S., Majhi, S. (2020). Automated Symbol Rate Estimation Over Frequency-Selective Fading Channel by Using Deep Neural Network. *International Symposium on Advanced Networks and Telecommunication Systems, ANTS*. DOI: 10.1109/ANTS50601.2020.9342831.
4. Sharma B., Halder R., Singh J. (2020). Blockchain-based Interoperable Healthcare using Zero-Knowledge Proofs and Proxy Re-Encryption. *International Conference on COMMunication Systems and NETWORKS, COMSNETS 2020*, 1-6. DOI:10.1109/COMSNETS48256.2020.9027413
5. Deep Deb S., Rahman M.A., Jha R.K. (2020). Breast Cancer Detection and Classification using Global Pooling. *11th International Conference on Computing, Communication and Networking Technologies, ICCCNT 2020*. DOI: 10.1109/ICCCNT49239.2020.9225375
6. Prakash A., Parida S.K. (2020). Combined frequency and voltage stabilization of thermal-thermal system with UPFC and RFB. *PIICON 2020 - 9th IEEE Power India International Conference*. DOI: 10.1109/PIICON49524.2020.9113034
7. Muduli U.R., Chikondra B., Behera R.K. (2020). Continuous and Discontinuous SVPWM with Switching Loss Control for Five-Phase Two-Level VSI fed Induction Motor Drive. *9th IEEE International Conference on Power Electronics, Drives and Energy Systems, PEDES 2020*. DOI: 10.1109/PEDES49360.2020.9379717
8. Akhtar M.S., Biswas P., Adhya A., Majhi S. (2020). Cost-efficient Mobile Backhaul Network Design over TWDM-PON. *International Symposium on Advanced Networks and Telecommunication Systems, ANTS*. DOI: 10.1109/ANTS50601.2020.9342831
9. Deb S.D., Jha R.K. (2020). COVID-19 detection from chest X-Ray images using ensemble of CNN models. *Proceedings of 2020 IEEE International Conference on Power, Instrumentation, Control and Computing, PICC 2020*. DOI: 10.1109/PICC51425.2020.9362499

10. Prakash A., Kumar K., Parida S.K. (2020). Design of damping controller based on the wide-area signal strength. *21st National Power Systems Conference, NPSC 2020*. DOI: 10.1109/NPSC49263.2020.9331866
11. Hazra R., Majhi S. (2020). Detecting respiratory diseases from recorded lung sounds by 2D CNN. *Proceedings of the 2020 International Conference on Computing, Communication and Security, ICCCS 2020*. DOI: 10.1109/ICCCS49678.2020.9277101
12. Khan Y., Khan P., Kumar S., Singh J., Hegde R.M. (2020). Detection and Spread Prediction of COVID-19 from Chest X-ray Images using Convolutional Neural Network-Gaussian Mixture Model. *IEEE 17th India Council International Conference, INDICON 2020*. DOI: 10.1109/INDICON49873.2020.9342159
13. Tiwary P., Pandey A., Kumar S. (2021). Differential d-Vectors for RSS based Localization in Dynamic IoT Networks. *International Conference on COMMunication Systems and NETWORKS, COMSNETS 2021*, 82-85. DOI: 10.1109/COMSNETS51098.2021.9352896
14. Singh, A.K., Trivedi, V.K. and Kumar, P. (2020). Discrete Fractional Fourier Transform based OFDM for 5G Mobile Communication. *International Symposium on 5G and Beyond for Rural Upliftment*. IIT Dhanbad.
15. Srivastava A., Parida S.K. (2020). Fault isolation and location prediction using support vector machine and gaussian process regression for meshed AC microgrid. *IEEE International Conference on Computing, Power and Communication Technologies, GUCON 2020*, 724-728. DOI: 10.1109/GUCON48875.2020.9231261
16. Behera R.K., Chikondra B., Sanjeevikumar P., Leonowicz Z., Gao D.W. (2020). Implementation of a High Power PMSG for Wind Power Interface using TLNPC Converter. *Proceedings - 2020 IEEE International Conference on Environment and Electrical Engineering and 2020 IEEE Industrial and Commercial Power Systems Europe, IEEEIC / I and CPS Europe 2020*. DOI: 10.1109/IEEEIC/ICPSEurope49358.2020.9160570
17. Ranjan R., Pareek P., Pandey S.K., Kumar S., Mishra J.K. (2020). Investigation of GeSn/SiGeSn nanostructured layer for sensors in mid-infrared application. *Proceedings of SPIE - The International Society for Optical Engineering*, 11345. DOI: 10.1117/12.2555931
18. Pandey, A., Sequeira, R., and Kumar, S. (2021). Joint Localization and Radio Map Generation using Transformer Networks with Limited RSS Samples. *IEEE International Conference on Communications Workshops, (ICC)*. Montreal.
19. Chowdary K.V.V.S.R., Kumar K., Behera R.K., Banerjee S., Kumar R.R. (2020). Load independent characteristics of dynamic wireless charging system through higher order compensation. *9th IEEE International Conference on Power Electronics, Drives and Energy Systems, PEDES 2020*. DOI: 10.1109/PEDES49360.2020.9379697
20. Prakash A., Parida S.K. (2020). LQR based PI controller for load frequency control with distributed generations. *21st National Power Systems Conference, NPSC 2020*. DOI: 10.1109/NPSC49263.2020.9331761
21. Prakash S., Singh J.K., Behera R.K. (2020). Lyapunov function based control strategy for single-phase grid-connected PV system with LCL-filter. *9th IEEE International Conference on Power Electronics, Drives and Energy Systems, PEDES 2020*. DOI: 10.1109/PEDES49360.2020.9379547
22. Banerjee M., Majhi S. (2020). Multi-class heart sounds classification using 2D-convolutional neural network. *Proceedings of the 2020 International Conference on Computing, Communication and Security, ICCCS 2020*. DOI: 10.1109/ICCCS49678.2020.9277204
23. Singh P., Parida S.K., Chauhan B., Choudhary N. (2020). Online voltage stability assessment using artificial neural network considering voltage stability indices. *21st National Power Systems Conference*. DOI: 10.1109/NPSC49263.2020.9331954
24. Chikondra B., Muduli U.R., Behera R.K. (2020). Open-Phase Fault-Tolerant Direct Torque Control for Five-Phase Three-Level NPC VSI fed Induction Motor Drive. *9th IEEE International Conference on Power Electronics, Drives and Energy Systems, PEDES 2020*. DOI: 10.1109/PEDES49360.2020.9379786
25. Gandhi G.A.S., Prakash R., Sivasubramani S. (2020). Optimal allocation of DG for minimization of power loss and total investment cost using an analytical approach. *21st National Power Systems Conference, NPSC 2020*. DOI: 10.1109/NPSC49263.2020.9331891
26. Joshi S.S., Prashanth G.R., Jadoun V.K., Agarwal A., Pandey S.K. (2020). Optimal Non-convex Combined Heat and Power Economic Dispatch Using Particle Swarm Optimization. *International Conference on Emerging Frontiers in Electrical and Electronic Technologies, ICEFEET 2020*. DOI: 10.1109/ICEFEET49149.2020.9186986
27. Gaurav P., Prashant, Singh S., Pandey S.K. (2020). Parity Generator Parity Checker Using Sub-threshold Adiabatic Logic. *7th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering, UPCON 2020*. DOI: 10.1109/UPCON50219.2020.9376407.
28. Pareek P., Ranjan R., Pandey S.K., Mishra J.K., Kushwaha A.K. (2020). Performance comparison of tin-based group IV SQWIP and MQWIP in dark conditions. *Proceedings of SPIE - The International Society for Optical Engineering*, 11345. DOI: 10.1117/12.2555449

29. Hasan M.A., Parida S.K. (2020). Referring PV Source Dynamics on AC Side of A Three Phase Solar PV Fed Inverter. *IEEE International Conference on Computing, Power and Communication Technologies, GUCON 2020*, 773-777. DOI: 10.1109/GUCON48875.2020.9231253
30. Behera S., Kumar B., Behera R., Panigrahi B.P., Behera R.K., Bagarty D.P. (2020). Regulated Soft-Switching Power Supply Using Buck-Boost Converter. *International Conference on Computational Intelligence for Smart Power System and Sustainable Energy, CISPSSE 2020*. DOI: 10.1109/CISPSSE49931.2020.9212245
31. Pandey P., Tiwary P., Kumar S., Das S.K. (2020). Residual Neural Networks for Heterogeneous Smart Device Localization in IoT Networks. *Proceedings - International Conference on Computer Communications and Networks, ICCCN. 2020*. DOI: 10.1109/ICCCN49398.2020.9209703
32. Nitika, Kumari S., Kumar V., Behera R.K. (2020). Solar Powered Smart Home Design with IoT. *Proceedings of 2020 IEEE-HYDCON International Conference on Engineering in the 4th Industrial Revolution, HYDCON 2020*. DOI: 10.1109/HYDCON48903.2020.9242901
33. Trivedi I., Majhi S. (2020). Span level model for the construction of scientific knowledge graph. *Proceedings of the 2020 International Conference on Computing, Communication and Security, ICCCS 2020*. DOI: 10.1109/ICCCS49678.2020.9276945
34. Chouksey M., Jha R.K. (2020). Variational Mode Decomposition based Image Segmentation using Sine Cosine Algorithm. *Asia-Pacific Signal and Information Processing Association Annual Summit and Conference, APSIPA ASC 2020 – Proceedings*, 1177-1181.
35. Saini M., Satija U., Upadhyay M.D. (2020). Variational Mode Decomposition Based Mental Task Classification from Electroencephalogram. *IEEE 17th India Council International Conference, INDICON 2020*. DOI: 10.1109/INDICON49873.2020.9342140
36. Kumar, P., Bhaskar, D.V., Behera, R.K. and Muduli, U. (2020). Novel closed loop speed control of permanent magnet brushless dc motor drive. *IEEE ICIT 2020*, Bonus Aries, Argentina.
37. Kumar, K. and Bhaumik, S. (2020). Nonlinear Filter for a System with Randomly Delayed Measurements and Inputs. *7th International Electronic Conference on Sensors and Applications*. DOI: 10.3390/ecsa-7-08236
38. Prakash, C., Pandey, S.K. and Singh, J. (2021). Body Connection Assessment of MOS-Diodes for MOS Quadrupler based RF Energy Harvesting Circuit. *4th International Conference DevIC 2021*, Kalyani Engineering College.
39. S. Pal, S. Saha and S. Gupta, "Electrostatic Doping Assisted Push-Pull Mach Zehnder Modulator for Optical Interconnects," *2020 XXXIIIrd General Assembly and Scientific Symposium of the International Union of Radio Science, 2020*, pp. 1-4, doi: 10.23919/URSIGASS49373.2020.9232009.
40. D. P. Jana and S. Gupta, "Machine Learning Enabled Detection for QPSK-PD-NOMA System Employing Single Mode Fiber," *2020 National Conference on Communications (NCC), 2020*, pp. 1-5, doi: 10.1109/NCC48643.2020.9056053.
41. A. M. Shukla and S. Gupta, "Simultaneous Measurement of Atmospheric Turbulence Induced Intensity and Polarization Fluctuation for Free Space Optical Communication," *2020 National Conference on Communications (NCC), 2020*, pp. 1-4, doi: 10.1109/NCC48643.2020.9056060

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8. Meghna Dutta (2016) Indian Society of Labour Economics
9. Nalin Bharti (Life Time) Indian Society of Labour Economics
10. Nalin Bharti (Life Time) The Indian Science Congress Association
11. Nalin Bharti (Life Time) Indian Economic Association
12. Nalin Bharti (2020) Virtual Institute UNCTAD
13. Nalin Bharti (2020) American Economic Association
14. Papia Raj (2007) Canadian Association for Study of International Development
15. Papia Raj (2013) Indian Sociological Society
16. Papia Raj (2018) Womens and Gender Studies et Recherches Féministes
17. Papia Raj (2018) Indian Social Science Academy
18. Priyanka Tripathi (2020) Postcolonial Association Indian Society for Commonwealth Studies
19. Priyanka Tripathi (2013) FORTELL - Forum of Teaching English Language and Literature
20. Priyanka Tripathi (2019) ELTAI - English Language Teachers Association of India
21. Priyanka Tripathi (2015) MELUS-MELOW- (The Society for the Study of the Multi-Ethnic Literatures of the World)
22. Priyanka Tripathi (2019) FSLE(Foundation for the Study of Literature and Environment)-India: Member and Coordinator-Bihar Chapter (<http://www.fsleindia.org/dr-priyanka-tripathi/>)
23. Priyanka Tripathi (2013) IACLALS- Indian Association for Commonwealth Literature and Language Studies(Officially recognized as Indian Chapter of the International ACLALS)
24. Richa Chaudhary (2020) Academy of Management
25. Smriti Singh (2009) ELT@I
26. Smriti Singh (2009) Forum for Contemporary Theory
27. Smriti Singh (2018) Postcolonial studies Association
28. Sweta Sinha (Life Time) Linguistic Society of India
29. Sweta Sinha (Life Time) International Pragmatics Association
30. Sweta Sinha (Life Time) Indian Society of Teacher Educators
31. Sweta Sinha (Life Time) All India Association for Educational Research
32. Sweta Sinha (Life Time) Social Science and Humanities Research Association

Member - Editorial Board

- Aditya Raj (2013) *Member, Editorial Board* - International Journal of Critical Pedagogy
- Meghna Dutta (2020) *Member, Editorial Board* - DGMC Journal of Media Studies
- Nalin Bharti (2020) *Member* - International Journal of Humanities and Social Sciences (IJHSS)
- Nalin Bharti (2020) *Member* - Indian Journal of Economics and Business
- Nalin Bharti (2020) *Member* - Issues and Ideas in Education
- Nalin Bharti (2020) *Member* - Journal of Management & Public Policy (JMPP)
- Papia Raj (2018) *Editorial Review Board* - Amity Journal of Health Care Management
- Papia Raj (2020) *Article Editor* - Sage Open Journal
- Papia Raj (2020) *Reviewer* - Waste Management and Research
- Priyanka Tripathi (2020) *Member* - Journal of International Women's Studies
- Priyanka Tripathi (2019) *Book Reviews Editor* - Rupkatha Journal on Interdisciplinary Studies in Humanities
- Richa Chaudhary (2017) Editor of special issue on Engaging Knowledge workers: Causes, Concerns, and Consequences in Journal of Global Operations and Strategic Outsourcing, Emerald.
- Richa Chaudhary (2021) *Editor of special issue on Corporate Innovations in Response to the COVID-19 Crisis within South Asia* - South Asian Journal of Business Studies, Emerald.
- Richa Chaudhary (2017) *Member, Editorial Board* - Indonesian Journal of Corporate Social Responsibility and Environmental Management
- Richa Chaudhary (2017) *Member, Editorial Board* - Indonesian Journal of Sustainability Accounting and Management (ESCI)
- Richa Chaudhary (2015) *Member, Editorial Advisory Board* - Review of HRM Journal
- Richa Chaudhary (2017) *Member, Editorial Advisory Board* - Samvad: An International Journal of Management
- Sweta Sinha (2017), *Member, Editorial Board* - Indian Journal of Applied Linguistics

Sponsored Research Projects

- Designing Disaster Preparedness Training Modules using Indigenous Knowledge and Increasing Community Awareness through Contextualized Techniques in Bihar (ICSSR, Rs.5.25 Lakhs) (PI : Dr. Sweta Sinha)
- Green Human Resource Management in Automobile Industry in Tamilnadu state of India (ICSSR, Rs. 6.45 Lakhs) (PI: Dr. Richa Chaudhary)
- Diffusion of Environmental Sustainability Innovations in Hospitals of Bihar state in India (ICSSR and MHRD (IMPRESS Scheme), Rs.15.75 Lakhs) (PI : Dr. Richa Chaudhary)
- Farmers income: Issues Determinants and Strategies (ICSSR, Rs.7.75 Lakhs) (Co : PI : Dr. Meghna Dutta)
- Mapping Domestic Abuse and Violence in the time of Covid-19: A Study from Bihar (ICSSR , Rs.5.00 Lakhs) (PI : Dr. Priyanka Tripathi)
- mHealth technologies for gender empowerment in Bihar (ICSSR, Rs.7.35 Lakhs) (PI : Dr. Papia Raj)
- Rural Telephonic Time Use Survey Study in Bihar-life in the Era of COVID19 : Impact on village makers of Bihar and Future prospects (IMPRI New Delhi, Rs.0.00 Lakhs) (Co-PI : Dr Nalin Bharti)

Consultancy Projects

- GuruCool Ion course (Introduction to Business Finance) (Tata Consultancy Services (TCS), Rs.3.60 Lakhs) Consultant Name: Dr. Rajendra N. Paramanik

Invited Lectures by Faculty Members

- Representation of Women in Media *by* Meghna Dutta (2021)
- Language- Gender- Power: What not to teach in a language classroom *by* Sweta Sinha (Patna Womens College, Patna) (2020)
- Integrating Traditional Ecological Knowledge in Mainstream Education: Perspectives *by* Sweta Sinha (Nandkunverba mahila College, Gujarat) (2020)
- AFemaleFieldWorker:CopingwithChallenges *by* Sweta Sinha (Lucknow University) (2021)

5. Increasing Students Online Engagement in Remote Learning **by** Richa Chaudhary (MNIT Jaipur) (2020)
6. Quantitative and Qualitative Research Methodology in an FDP on "New Age HR Analytics" **by** Richa Chaudhary (Utkal University) (2021)
7. Managing Stress and Overcoming Fears in ATAL FDP on Personal Effectiveness (IIITDM Jabalpur) **by** Richa Chaudhary (2021)
8. Team Building in ATAL FDP (IIT Patna) **by** Richa Chaudhary (2021)
9. Stress and Conflict Management in ATAL FDP (IIT Patna) **by** Richa Chaudhary (2021)
10. FinMod (Financial Modeling) Workshop at Dpartment of Economics Science, IIT Kanpur **by** Rajendra N. Paramanik (2021)
11. Perspective of Effective Teaching **by** Nalin Bharti (NIT Patna) 2020)
12. Modern Teaching Approach **by** Nalin Bharti (NIT Patna) (2020)
13. How to Deal with International Trade Data **by** Nalin Bharti (Jaipuria Institute Management Conference (JIMC) (2020)
14. Nudging in Different Context of Life **by** Nalin Bharti (Harisingh Sagar Vishwavidyalaya) (2020)
15. Dark and Bright Side of Patent **by** Nalin Bharti (Harisingh Sagar Vishwavidyalaya) (2020)
16. Presentation on Scope of IPR Through Cross Country Illustration **by** Nalin Bharti (MSME Patna) (2020)
17. Life is a Journey ...Enjoy the Drive **by** Nalin Bharti (Bhagalpur College of Engineering) (2020)
18. Indias Digital Readiness and The Way Ahead **by** Nalin Bharti (Gaya College of Engineering) (2020)
19. Patent and Copyright Cross Country Illustrations for the Research **by** Nalin Bharti (Sona College of Engineering Salem) (2020)
20. Belling the C.A.T.: Challenges in Implementing Inclusive Education in India **by** Smriti Singh (Ramkrishna Mission College of Education) (2020)
21. Communication Skills: Life Saving Skills **by** Smriti Singh (Bhagalpur College of Engineering) (2020)
22. The Aesthetics of Gothic Fiction **by** Smriti Singh (Midnapore college) (2020)
23. The Growth and Development of Gothic fiction **by** Smriti Singh (Ram Jaipal College Chapra) (2020)
24. Going Green – Practices in ELT Classrooms **by** Smriti Singh (Nandkunvarba Mahila College, Bhavnagar, Gujrat) (2020)
25. Time to Think Beyond the Box: Thinking Skills and Problem Solving in Current Times **by** Smriti Singh (ethiraj College for Women) (2021)
26. Mapping Women Writers and Figures in Indian Writings in English **by** Smriti Singh (Kumarguru College of Liberal Arts and Science) (2021)
27. Shadow Pandemic: Women's Married Life During the Time of Covid-19 **by** Priyanka Tripathi (Shastri Indo-Canadian Institute's Golden Jubilee Conference and Lecture Series Grant (GJCLSG)organised **by** Indian Institute of Technology Madras and University of Guelph) (2021).
28. Indian Women's Short Fiction in English **by** Priyanka Tripathi(Sahitya Akademi) (2021)
29. Literature as the Harbinger of Happiness **by** Priyanka Tripathi (IIT Jammu) (2021)
30. At the Margins: Experience of Indian Women in COVID-19 **by** Priyanka Tripathi (SVNIT Surat) (2021)
31. Women at Working PLaces **by** Priyanka Tripathi (NIT Jamshedpur) (2020)
32. Cultural and Linguistic Intersections: A Study of Dell Hymes Ethnography of Communication **by** Priyanka Tripathi (MNIT Allahabad) (2020)
33. Blurring Boundaries: Impact of COVID-19 on Higher Education **by** Priyanka Tripathi (Osaka University Japan) (2021)
34. Navigating Contemporary Research Methods **by** Papia Raj (Patna Women's College) (2020)
35. Qualitative Inquiry **by** Papia Raj (Calcutta University) (2020)
36. Women's Health: Issues and Challenges **by** Papia Raj (Patna Women's College) (2021)
37. Educational Intervention for Human Development in Bihar **by** Aditya Raj (Bihar Sociological Society) (2020)
38. Developing New Academic Model Post COVID-19 Pandemic vis-à-vis Issues of Adaptability, Efficiency, **by** Aditya Raj (Patna Women's College) (2020)
39. India and Her Internal Diaspora **by** Aditya Raj (Department of Sociology, University of Kerala) (2020)
40. The Overlooked Children of Migrants **by** Aditya Raj (RC 4, Indian Sociological Society) (2020)

Short-Term Courses, Training Programmes and Workshops organised

1. Educational Technology and Language Classes by Dr. Smriti Singh and Dr. Sweta Sinha (1st-2nd June, 2020) (Self sponsored)
2. Exploring Frontiers in Applied Linguistics (3 days (June 29, 2020- July 1, 2020)) by Dr. Sweta Sinha and Dr. Smriti Singh

Journal Publications (Scopus – Indexed)

1. Chaudhary R. (2020). Authentic leadership and meaningfulness at work: Role of employees' CSR perceptions and evaluations. *Management Decision*. 59(8), 2024-2039. DOI: 10.1108/MD-02-2019-0271
2. Biswas S.K., Tripathi P. (2020). 'Cartographies of struggle': remapping the plight of Bengali women in/ after the 1971 war in Kamila Shamsie's Kartography. *Journal of Gender Studies*, 29(08), 937-948. DOI: 10.1080/09589236.2020.1833184
3. Youkta K., Paramanik R.N. (2020). Convergence analysis of health expenditure in Indian states: Do political factors matter? *GeoJournal*. DOI: 10.1007/s10708-020-10313-1
4. Chaudhary R. (2020). Corporate social responsibility and employee performance: a study among indian business executives. *International Journal of Human Resource Management*, 31(21), 2761-2784. DOI: 10.1080/09585192.2018.1469159
5. Lata M., Chaudhary R. (2020). Dark Triad and instigated incivility: The moderating role of workplace spirituality. *Personality and Individual Differences*, 166. DOI: 10.1016/j.paid.2020.110090
6. Chaudhary R. (2020). Deconstructing work meaningfulness: sources and mechanisms. *Current Psychology*. DOI: 10.1007/s12144-020-01103-6
7. Firoz M., Chaudhary R., Khan A. (2020). Desolated milieu: exploring the trajectory of workplace loneliness (2006-2019). *Management Research Review*, 44(05), 757-780. DOI: 10.1108/MRR-01-2020-0051
8. Youkta K., Paramanik R.N. (2021). Epidemiological model for India's COVID-19 pandemic. *Journal of Public Affairs*. DOI: 10.1002/pa.2639.
9. Das C., Tripathi P. (2020). Experiencing the Riverscape: An Eco-Spiritual Decoding of Gangetic 'Triveni-Sangam' in select writings of Neelum Saran Gour. *Open Cultural Studies*, 4(01), 96-106. DOI: 10.1515/culture-2020-0009
10. Chaudhary R. (2020). Green Human Resource Management and Employee Green Behavior: An Empirical Analysis. *Corporate Social Responsibility and Environmental Management*, 27(02), 630-641. DOI: 10.1002/csr.1827
11. Biswas S.K., Tripathi P. (2020). History and/or through oral narratives: Relocating women of the 1971 war of Bangladesh in Neelima Ibrahim's A War heroine, i speak. *Journal of International Women's Studies*, 21(01), 119-130.
12. Bhattacharjee P., Tripathi P., Pal B. (2021). 'The problem of gender violence in India... was not a legal problem, but a cultural problem': a conversation with comics creator Ram Devineni. *Journal of Graphic Novels and Comics*. DOI: 10.1080/21504857.2021.1918736
13. Mahela R., Sinha S. (2021). Morphological processes in Sanzari Boro. *Journal of Language and Linguistic Studies*, 17(02), 686-696. DOI: 10.52462/jlls.47
14. Bhattacharjee P., Tripathi P. (2020). 'My drawing enables my catharsis...': in conversation with Sarah Lightman. *Journal of Graphic Novels and Comics*, 1-12. DOI: 10.1080/21504857.2020.1793789
15. Bhattacharjee P., Tripathi P. (2020). 'My methodology is friendship; my lens is feminist': interview with Nicola Streeten. *Journal of Graphic Novels and Comics*. DOI: 10.1080/21504857.2020.1863240
16. Kumar K., Paramanik R.N. (2020). Nexus between indian economic growth and financial development: A non-Linear ARDL approach. *Journal of Asian Finance, Economics and Business*, 7(06), 109-116. DOI: 10.13106/JAFEB.2020.VOL7.NO6.109
17. Kumar C., Bharti N. (2021). Post-SAFTA NTMs for Agricultural Trade: Revelations from the India-South Asia Approach. *Foreign Trade Review*, 56(01), 117-135. DOI: 10.1177/0015732520961309
18. Dutta M., Dhar N.S. (2021). Property Rights Documentation in Determining Credit Availability for Informal Firms: A Study of Indian Firms. *Journal of Quantitative Economics*, 19(01), 123-138. DOI: 10.1007/s40953-020-00221-z
19. Das C., Tripathi P. (2020). Reconstructing the changing urban landscape beyond spatio-temporal dimensions: Post-colonial 'Allahabad' in Neelum Saran Gour's Invisible Ink. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, 12(01). DOI: 10.21659/rupkatha.v12n1.07
20. Biswas S.K., Tripathi P. (2020). Representation of gendered violence in the Bangladesh liberation war of 1971. *IUP Journal of English Studies*, 15(02), 59-67.

21. Das C., Tripathi P. (2020). Silhouetting the self and society: An interview with neelum saran gour. *English*, 69(265), 178-188. DOI: 10.1093/ENGLISH/EFAA005
22. Mandal S., Singh S. (2020). Stor(Y)ing the reality: (con) textualization of myth in easterine kire's son of the thundercloud. *IUP Journal of English Studies*, 15(04), 17-25.
23. Bisai S., Singh S. (2020). Towards a holistic and inclusive pedagogy for students from diverse linguistic backgrounds. *Teflin Journal*, 31(01), 139-161. DOI: 10.15639/teflinjournal.v31i1/139-161
24. Dwivedi P.S., Tripathi P. (2020). Understanding the gender biases in modern and pre-modern times through mrcchakatika and utsav. *Rupkatha Journal on Interdisciplinary Studies in Humanities*, 12(04). DOI: 10.21659/rupkatha.v12n4.17c
25. Kumari M., Bharti N. (2020). What Drive Trade Costs? South Asia and Beyond. *South Asia Economic Journal*, 21(02), 258-280. DOI: 10.1177/1391561420968543
26. Kumar C., Bharti N. (2020). Why NTM is a Challenge in Trade Relations? Evidence from India-Africa Agricultural Trade. *Insight on Africa*, 12(02), 79-103. DOI: 10.1177/0975087819898582
27. Kumari M., Nalin Bharti N & Kamiike A., Japan's investment in India: post covid-19 investment opportunities in pharmaceuticals, Transnational Corporations Review, Volume 13, 2021 - Issue 2. <https://doi.org/10.1080/19186444.2021.1898860>
28. Kumari M., Bharti N., Linkages Between Trade Facilitation and Governance: Relevance for Post-COVID-19 Trade Strategy, Millennial Asia, Jan, 2021, Sage. <https://doi.org/10.1177/0976399620972346>
29. Lata M., Chaudhary R. (2020). Workplace Spirituality and Experienced Incivility at Work: Modeling Dark Triad as a Moderator. *Journal of Business Ethics*. DOI: 10.1007/s10551-020-04617-y
30. Firoz, M. and Chaudhary, R. (2021). Impact of workplace loneliness on employee outcomes: What role does psychological capital play? *Personnel Review*. DOI: <https://doi.org/10.1108/PR-03-2020-0200>
31. Firoz, M., Chaudhary, R., and Lata, M. (2021). The socio-demographic determinants of workplace loneliness in India. Evidence Based HRM: A global forum for empirical scholarship. DOI: <https://doi.org/10.1108/EBHRM-08-2020-0116>
32. Chaudhary, R. and Kumar, C. Innovations and Eco-sustainability: Exploring the role of organizational environment. *Social Responsibility Journal*. DOI: <https://doi.org/10.1108/SRJ-12-2020-0497>
33. Paramanik, R.N. and Singhal, V. (2020). Sentiment Analysis of Indian Stock Market Volatility. *Procedia Computer Science, Elsevier*.
34. Mahela, R and Sinha, S (2021). Morphological processes in Sanzari Boro. *Journal of Language and Linguistic Studies*.
35. Begum, N and Sinha, S (2021). The Languages of the Divine Space: A Case Study from India. *Dialectologia*.
36. Mahela, R and Sinha, S (2021). A Phonological Investigation of Sanzari Boro. *Studies in Language*.
37. Sinha, S and Begum, N. (2021). Mother Tongue marginalization: an empirical study on language visibility and vitality in public space of an Indian satellite town. *International Journal of Multilingualism*.

Journal Publications (Other)

1. Chaudhary, R. and Chandan, C. (2020). Determinants of diffusion of environmental sustainability innovations in hospitals of Bihar state in India. *Journal of Global Responsibility*, 12, 76-99.
2. Kumari, M. and Bharti, N. (2020). Does bureaucracy affect the outcome of logistics performance? Empirical evidence from South Asia. *American Journal of Business*.
3. Bhattacharjee, M. and Sinha, S. (2021). Ecosophy through Jataka tales. *Language and Ecology*.
4. Saha, S. and Singh, S. (2020). Effectiveness of Language Games in Enrichment and Retention of Vocabulary In ESL Classroom. *Fortell*, 60-73.
5. Ghosh, S. and Singh, S. (2020). Finding Nature in the Cities: An Ecocritical Study of Sarah Ladipo Manyika's Like a Mule Bringing Ice Cream to the Sun. *Literary oracle*, 93-102.
6. Rana, C. and Raj, A. (2020). Forgotten Migrants Children and their Education During Pandemic. *Global Research Forum on Diaspora and Transnationalism*.
7. Dutta, M. (2020). Gendered Migration - Does the Better World Exist. *Economic and Political Weekly*, 55(49).
8. Dutta, M. Is Informality the Key to Growth and Stability. *Applied Economics Quarterly*, 66(1).
9. Gupta, P and Raj, P. (2021). Lifestyle Diseases among Girl Child in Urban India. *Indian Journal of Public Health Research & Development*, 12(7).
10. Kumari, M. and Bharti, N. (2021). Linkages Between Trade Facilitation and Governance: Relevance for Post-COVID-19 Trade Strategy. *Millennial Asia*.
11. Raj, A. and Gohain, M.M. (2020). Mapping the terrain of child migration and boarding school education in India. *Journal of Social Sciences*, 43(8).
12. Gohain, M.M. and Raj, A. (2020). Plight of Children of Migrants During COVID-19 Pandemic. *Countercurrents*, July, 20.

13. Das, C and Tripathi, P. (2020). Re-contextualizing the lives of Courtesans' in Neelum Saran Gour's Requiem in Raga Janki and Vikram Sampath's My Name is Gauhar Jaan. *Indian Literature*, 315.
14. Tripathi, P and Das, C. (2020). Social Distancing and Sex Workers in India. *Economic & Political Weekly*, 55(31).
15. Tripathi, P. and Kumar, U. Translated Rajinder Singh Bedi's short story "Quarantine" in English. *Indian Literature*.
16. Mawdkhap, L.L., Kumari, R., Kumar, M., Sinha, S., Singh, S. and Singhal, V. (2020). Importance of Contextualized Communication for Better Disaster Preparedness and Disaster Risk Reduction: A Case Study from Bihar. *International Journal of Interdisciplinary and Multidisciplinary Studies*, 7(02), 03-122.
17. Mawdkhap, L.L., Kumari, R., Kumar, M., Sinha, S. and Singh, S. Folklore and Indigenous Knowledge for Sustainable Living: A Case Study of Disaster Preparedness and Management. *Language in India*. 20 (9).
18. Bhattacharjee, Monalisa & Sweta Sinha, (2021), "Ecosophy through Jataka Tales", in *Language & Ecology*, International Ecolinguistics Association. <http://ecolinguisticsassociation.org/journal/4563035324>

Conference Papers/Book Chapters

1. Firoz, M. and Chaudhary, R. (2021). Antecedent and outcomes of workplace loneliness: Role of perceived organizational support. 81st *Academy of Management Annual Meeting*.
2. Rashmi and Aditya Raj (2020). Understanding the Challenges of Pre-service Teacher Education Internship Programme Amidst COVID-19. *Education, Society, and Global Challenges*, Department of Education, L. N. Mithila University, Dharbhanga, Bihar.
3. Mamta Kumari and Nalin Bharti (2020). Does Bureaucratic Efficiency Affect the Outcome of Logistics Performance? Empirical Evidence From South Asia. *Jaipuria Institute of Management Conference* (JIMC), Indore.
4. Lata, M. and Chaudhary, R. (2021). Does meaningful work curb onset of workplace incivility? Examining the role of psychopathy Sub-theme 79: Violence and Organization. 37th EGOS (*European Group of Organizational Studies*) *Colloquium 2021*, VU University Amsterdam, Netherlands.
5. Lata, M. and Chaudhary, R. (2020). Does Spiritual Work Environment Reduce Workplace Incivility? The Mediating Role of Prosociality. *80th Academy of Management Annual Meeting*, Vancouver, Canada, USA.
6. Priyanka Tripathi (2021). Gender Politics, Menstruating Women and Utopian form of Cultural Resistance: Sucharita Dutta Asane's "Cast Out". *IACLALS 2021*.
7. Rashmi and Aditya Raj (2020). Implications of Social Determinants of Education for Teacher Education: Lessons from Bihar. *The Southeast Asian Conference on Education (SEACE2020)*, NUS Singapore.
8. Madhu M Gohain and Aditya Raj (2020). Learning environment in JNV, Human Development in Bihar.
9. Priyanka Tripathi (2021). Shadow Pandemic: Women's Married Life during the time of Covid-19, Towards New Visions: Women in Films, Media and Beyond. University of Guelph.
10. Lata, M. and Chaudhary, R. (2021). Spiritual workspace and incivility: unraveling the psychological mechanisms and boundary conditions. *81st Academy of Management Annual Meeting*.
11. Firoz, M. and Chaudhary, R. (2020). Workplace Loneliness, Quality of Interpersonal relationship, and Work-Family Conflict: Moderating Influence of Psychological Capital. 36th EGOS (*European Group of Organizational Studies*) *Colloquium 2020*, Hamburg, Germany.
12. Mahela, R. and Sinha, S. (2020). "Code Mixing in Sanzari Boro" in *The Interplays of Language, Society and Culture*. ICOSAL 40.

Mathematics

HEAD: DR. OM PRAKASH



DR. ASHISH KUMAR UPADHYAY

Associate Professor

Combinatorial Topology and Geometry, Geometric Topology, Algebraic Topology, Algorithmic and Combinatorial aspects of Low - dimensional Manifolds, Graphs on Surfaces, Automorphism Groups, Coding theory over rings, Spectra of Graphs and Surfaces



DR. AMIT KUMAR VERMA

Assistant Professor

Monotone Iterative Techniques in Abstract Spaces, Upper and Lower Solution Techniques, Nonlinear Singular Boundary Value Problems, Multi Point Boundary Value Problems, Wavelet Transforms, Theoretical Numerical Analysis



DR. BALENDU BHOOSHAN UPADHYAY

Assistant Professor

Nonlinear Optimization, Variational Inequality Semi-infinite Programming, Fixed Point Theory, Differential Manifolds



DR. K. SALONI

Assistant Professor

Commutative Algebra



DR. NUTAN KUMAR TOMAR

Associate Professor

Mathematical Control Theory, Nonlinear Functional Analysis, Optimal Control



DR. OM PRAKASH

Associate Professor

Rings and Modules (Skew Polynomial Rings, Associated Prime Rings), Algebraic Coding Theory, Algebraic Graph Theory, Algebraic Number Theory

**DR. PRASHANT KUMAR SRIVASTAVA****Associate Professor**

Mathematical Modeling in Ecology and Epidemiology, Applications of Differential Equations in Biology, Stability and Bifurcation, Mathematical Modeling of HIV dynamics: in vivo

**DR. PRATIBHAMOY DAS****Assistant Professor**

Numerical Analysis, Moving Mesh Methods, Singular Perturbation, A posteriori Error Estimates, r-refinement Strategy Ordinary and Partial Differential Equations, System of differential Equations, Integral Equations, Fractional Order Equations, Nonlinear Problems

**DR. RAHUL KUMAR SINGH****Assistant Professor**

Differential Geometry

**DR. SHAILESH KUMAR TIWARI****Assistant Professor**

Associative Rings and Algebras

**DR. SUBHABRATA PAUL****Assistant Professor**

Algorithmic Graph Theory

**DR. YOGESH MANI TRIPATHI****Associate Professor**

Statistical Decision Theory, Statistical Inference

Member - Professional Bodies

1. Amit Kumar Verma Bharat Ganita Parishad
2. Amit Kumar Verma Indian Mathematical Society
3. Nutan Kumar Tomar Indian Mathematical Society
4. Nutan Kumar Tomar IEEE
5. Nutan Kumar Tomar Indian Society of Industrial and Applied Mathematicians (ISIAM)
6. Om Prakash (2005) Indian Science Congress Association
7. Om Prakash (2010) Calcutta Mathematical Society
8. Om Prakash (2012) The Indian Mathematical Society
9. Om Prakash (2019) Ramanujan Mathematical Society
10. Prashant Kumar Srivastava (2017) NASI, Allahabad
11. Prashant Kumar Srivastava (2021) Society of Mathematical Biology
12. Prashant Kumar Srivastava (2021) American Mathematical Society
13. Prashant Kumar Srivastava (2012) Indian Mathematical Society
14. Prashant Kumar Srivastava (2018) Indian Science Congress Association
15. Prashant Kumar Srivastava (2010) Indian Academy for Mathematical Modelling and Simulation
16. Pratibhamoy Das (2018) Indian Mathematical Society
17. Pratibhamoy Das (2019) Quarterly Franklin Membership, London Journals Press
18. Pratibhamoy Das Indian Mathematical Society
19. Pratibhamoy Das Society of Industrial and Applied Mathematics
20. Pratibhamoy Das American Mathematical Society
21. Pratibhamoy Das Indian Science Congress Association
22. Balendu Bhooshan Upadhyay International Society on Multiple criteria Decision Making (MCDM)
23. Balendu Bhooshan Upadhyay Indian Mathematical Society

Awards & Honours

1. N. K. Tomar - Session co-chair, Observers, American Control Conference 2021 (ACC 2021), New Orleans, Louisiana, USA during May 26-28, 2021

Sponsored Research Projects

1. Algorithmic aspects of vertex-edge domination and its variation (CSIR, Rs.15.16 Lakhs) (PI : Dr. Subhabrata Paul)
2. Algorithmic study of upper domatic number (SERB, Rs.6.60 Lakhs) (PI : Dr. Subhabrata Paul)
3. Estimation and Prediction with Constrained and Unconstrained Observations (SERB, India, Rs.3.96 Lakhs) (PI : Dr. Yogesh Mani Tripathi)
4. Impact of information of disease prevalence on the dynamics of diseases: A mathematical study (DST (MATRICS), Rs.6.60 Lakhs) (PI : Dr. Prashant Kumar Srivastava)
5. Parameter uniform numerical analysis for singularly perturbed differential equations based on mesh adaptivity (SERB Govt of India, Rs.24.27 Lakhs) (PI : Dr. Pratibhamoy Das)
6. Skew cyclic codes over the extension of Z_4 and their applications in quantum and DNA computing (SERB DST, Govt. of India, Rs.20.74 Lakhs) (PI : Dr. Om Prakash)
7. Systems described by differential and algebraic equations together: Analysis and Design (SERB, Rs.6.60 Lakhs) (PI : Dr. Nutan Kumar Tomar)
8. Towards New Platform on Generalized Vector Variational Inequalities: Scope in Optimization and Bilevel Programming (DST-SERB, Rs.14.94 Lakhs) (PI : Dr. Balendu Bhooshan Upadhyay)

Invited Lectures by Faculty Members

1. DAEs: A General Mathematical Framework for Modeling and Control **by** Nutan Kumar Tomar (Pandit Deendayal Petroleum University, Gandhinagar, Gujarat, India)
2. Applied Linear Algebra **by** Nutan Kumar Tomar (IIT Roorkee)
3. TEQIP-III FDP on Essential Mathematics for Machine Learning **by** Nutan Kumar Tomar (IIT Roorkee)
4. DAEs: Modelling, Analysis, and Control **by** Nutan Kumar Tomar (NIT Jamshedpur)
5. Some Unconventional Funs with Mathematics by Pratibhamoy Das (LNJPIT Chapra)
6. Some Applications of Algebra in Coding Theory **by** Om Prakash (GVPCEW, Visakhapatnam) (2020).
7. Applications of Mathematics in Information Communications **by** Om Prakash (Government Polytechnic College Purnia) (2020).
8. Applications of Algebra in Coding Theory **by** Om Prakash (Gaya College of Engineering, Gaya) (2020).
9. Some Applications of Algebra in Coding Theory **by** Om Prakash (Jaipur Engineering College, Jaipur) (2020).
10. Introduction to Algebraic Coding Theory and MAGMA Computations **by** Om Prakash (MMMUT, Gorakhpur) (2020).
11. Applications of Algebra in Coding Theory by Om Prakash (Bhagalpur College of Engineering, Bhagalpur) (2020).
12. Constacyclic Codes Over Rings and Their Application to Quantum Codes **by** Om Prakash (Mahatma Gandhi University, Nalgonda) (2020).
13. Constacyclic Codes over an Extension of \mathbb{Z}_4 and Related Quaternary Codes by Om Prakash (Department of Mathematics, Anantpur) (2020).
14. Mixed Alphabets $\mathbb{Z}_4 \times \mathbb{Z}_4$ [u]-Additive Cyclic and Constacyclic Codes **by** Om Prakash (Department of Mathematics, NIT Manipur) (2021).
15. On Generalized Vector Variational Inequalities and Nonsmooth Multiobjective Programming Problems in **by** Balendu Bhooshan Upadhyay (Washington Convention Center, Washington DC, USA)
16. Nonlinear Optimization Problems with Equality and Inequality Constraints **by** Balendu Bhooshan Upadhyay (NIT Manipur)
17. Linear Programming Problem and Its Solution **by** Matlab by Balendu Bhooshan Upadhyay (RRS College, Patliputra University)
18. Nonlinear Optimization with Equality and Inequality Constraints **by** Balendu Bhooshan Upadhyay (NIT Andhra Pradesh)
19. Convexity and Its Applications in Constrained Optimization **by** Balendu Bhooshan Upadhyay (IIT Indore)
20. Convexity and Its Applications in Nonlinear Optimization **by** Balendu Bhooshan Upadhyay (Manav Rachna University Haryana)
21. System of Linear Equations and Invertible Matrices **by** Rahul Kumar Singh (Jabalpur Engineering College, MP, India)
22. Zero Mean Curvature (ZMC) Surfaces and Euler-Ramanujan's Identities **by** Rahul Kumar Singh (ICTS-TIFR, Bangalore, India)
23. Class Room Teaching: Learning Mathematical Methods for Engineering and Science **by** Amit Kumar Verma (FDP by Jaipur National University, Jaipur)
24. On the Existence of Solutions for a Class of Nonlinear Singular Bvps Arising in Real Life **by** Amit Kumar Verma (Drakhilins Seminar on Functional Differential Equations, March 3 2021 organized by Ariel University)
25. Mathematics, Mathematicians and Some Unsolved Problems **by** Amit Kumar Verma (Humanities, Invertis University, Bareilly)
26. Numerical Study of Stokes-Brinkman Systems with varying Liquid Viscosity **by** Amit Kumar Verma (Gubkin University, Russia)
27. Non-standard Finite Difference Techniques **by** Amit Kumar Verma (MMMUT, Gorakhpur)
28. Mathematica **by** Amit Kumar Verma (Faculty Development Program (21 September - 25 September) at Department of Mathematics and Scientific Computing, Madan Mohan Malaviya University of Technology, Gorakhpur, TEQIP-III sponsored)
29. Modeling of Heat Conduction in Human Mind **by** Amit Kumar Verma (Pandit Deen Dayal Upadhyay Girls PG College)
30. Modeling with Mathematica **by** Amit Kumar Verma (Invertis University, Bareilly)
31. Teaching and Learning Mathematics with Mathematica **by** Amit Kumar Verma (RMLU Ayodhya)
32. A Moving Mesh Algorithm based Optimal Accurate Mesh Equidistribution Approach for Boundary Layer Originated Parabolic Systems", International Conference on Computational Science and Numerical Algorithms (29th-31st May, 2021, Guilin, China) **by** Pratibhamoy Das

33. Numerical Analysis of Approximate Solutions for Nonlinear Problems with Convergent & Divergent Experimental Data, (Adamas University, Kolkata, 17th June, 2021) **by** Pratibhamoy Das
34. How to Prepare for GATE Mathematics for Engineering Stream Students" at Loknaya Jai Prakash Institute of Technology, Chapra, 24th January, 2020 **by** Pratibhamoy Das
35. Generalized Nonsmooth Stampacchia Vector Variational Inequalities and Nonsmooth Multiobjective Optimization Problems using Michel Penot subdifferential at Department of Mathematics Institute of Science, Banaras Hindu University, Varanasi, India from February 2nd-4th, 2020 **by** Balendu Bhooshan Upadhyay

Journal Publications (Scopus – Indexed)

1. Shakti D., Mohapatra J., Das P., Vigo-Aguiar J. (2020). A moving mesh refinement based optimal accurate uniformly convergent computational method for a parabolic system of boundary layer originated reaction–diffusion problems with arbitrary small diffusion terms. *Journal of Computational and Applied Mathematics*. DOI: 10.1016/j.cam.2020.113167
2. Maurya R.K., Tripathi Y.M. (2020). Reliability estimation in a multicomponent stress-strength model for burr XII distribution under progressive censoring. *Brazilian Journal of Probability and Statistics*, 34(02), 345-369. DOI: 10.1214/18-BJPS426
3. Kumar K., Podila P.C., Das P., Ramos H. (2021). A graded mesh refinement approach for boundary layer originated singularly perturbed time-delayed parabolic convection diffusion problems. *Mathematical Methods in the Applied Sciences*. DOI: 10.1002/mma.7358
4. Verma A.K., Rawani M.K., Agarwal R.P. (2020). A high-order weakly l-stable time integration scheme with an application to burgers' equation. *Computation*, 8(03), 1-22. DOI: 10.3390/computation8030072
5. Srivastav A.K., Tiwari P.K., Srivastava P.K., Ghosh M., Kang Y. (2020). A mathematical model for the impacts of face mask, hospitalization and quarantine on the dynamics of COVID-19 in India: Deterministic vs. stochastic. *Mathematical Biosciences and Engineering*, 18(01), 182-213. DOI: 10.3934/MBE.2021010
6. Chandrasekhar A., Tiwari S.K. (2020). A note on generalized derivations as a Jordan homomorphisms. *Bulletin of the Korean Mathematical Society*, 57(03), 709-737. DOI: 10.4134/BKMS.b190429
7. Verma A.K., Kayenat S., Jha G.J. (2020). A note on the convergence of fuzzy transformed finite difference methods. *Journal of Applied Mathematics and Computing*, 63, 143-170. DOI: 10.1007/s12190-019-01312-8
8. Verma A.K., Rawani M.K., Agarwal R.P. (2021). A novel approach to compute the numerical solution of variable coefficient fractional Burgers' equation with delay. *Journal of Applied and Computational Mechanics*, 7(03), 1550-1564. DOI: 10.22055/jacm.2021.35574.2689
9. Das P., Rana S., Ramos H. (2020). A perturbation-based approach for solving fractional-order Volterra–Fredholm integro differential equations and its convergence analysis. *International Journal of Computer Mathematics*, 97(10), 1994-2014. DOI: 10.1080/00207160.2019.1673892
10. Verma A.K., Pandit B., Verma L., Agarwal R.P. (2020). A review on a class of second order nonlinear singular BVPs. *Mathematics*, 8(07). DOI: 10.3390/MATH8071045
11. Verma A.K., Kayenat S. (2020). An efficient Mickens' type NSFD scheme for the generalized Burgers Huxley equation. *Journal of Difference Equations and Applications*, 26, 1213-1246. DOI: 10.1080/10236198.2020.1812594
12. Verma A.K., Pandit B., Agarwal R.P. (2021). Analysis and computation of solutions for a class of nonlinear sbvps arising in epitaxial growth. *Mathematics*, 9(07). DOI: 10.3390/math9070774
13. Verma A.K., Kayenat S. (2020). Applications of modified Mickens-type NSFD schemes to Lane–Emden equations. *Computational and Applied Mathematics*, 39(03). DOI: 10.1007/s40314-020-01257-w
14. Prakash O., Yadav S., Verma R.K. (2020). Constacyclic and linear complementary dual codes over $F_q + uF_q$. *Defence Science Journal*, 70(06), 626-632. DOI: 10.14429/DSJ.70.15691.
15. Mahto A.K., Tripathi Y.M., Kızılaslan F. (2020). Estimation of Reliability in a Multicomponent Stress–Strength Model for a General Class of Inverted Exponentiated Distributions Under Progressive Censoring. *Journal of Statistical Theory and Practice*, 14(04). DOI: 10.1007/s42519-020-00123-6
16. Mahto A.K., Tripathi Y.M. (2020). Estimation of reliability in a multicomponent stress-strength model for inverted exponentiated Rayleigh distribution under progressive censoring. *OPSEARCH*, 57(04), 1043-1069. DOI: 10.1007/s12597-020-00448-7
17. Verma A.K., Pandit B., Agarwal R.P. (2020). Existence and nonexistence results for a class of fourth-order coupled singular boundary value problems arising in the theory of epitaxial growth. *Mathematical Methods in the Applied Sciences*. DOI: 10.1002/mma.6905

18. Bishnu A., Desai S., Ghosh A., Mishra G., Paul S. (2020). Existence of planar support for geometric hypergraphs using elementary techniques. *Discrete Mathematics*, 343(06). DOI: 10.1016/j.disc.2020.111853
19. Bishnu A., Ghosh A., Mathew R., Mishra G., Paul S. (2020). Grid obstacle representation of graphs. *Discrete Applied Mathematics*, 296, 39-51. DOI: 10.1016/j.dam.2020.09.027
20. Verma A.K., Kumar N., Tiwari D. (2020). Haar wavelets collocation method for a system of nonlinear singular differential equations. *Engineering Computations*, 38(02), 659-698. DOI: 10.1108/EC-04-2020-0181
21. Das P., Rana S., Vigo-Aguiar J. (2020). Higher order accurate approximations on equidistributed meshes for boundary layer originated mixed type reaction diffusion systems with multiple scale nature. *Applied Numerical Mathematics*, 148, 79-97. DOI: 10.1016/j.apnum.2019.08.028
22. Swati, Singh K., Verma A.K., Singh M. (2020). Higher order Emden–Fowler type equations via uniform Haar Wavelet resolution technique. *Journal of Computational and Applied Mathematics*, 376. DOI: 10.1016/j.cam.2020.112836
23. Sen T., Bhattacharya R., Tripathi Y.M., Pradhan B. (2020). Inference and optimum life testing plans based on Type-II progressive hybrid censored generalized exponential data. *Communications in Statistics: Simulation and Computation*, 49(12), 3254-3282. DOI: 10.1080/03610918.2018.1538456
24. Wang L., Tripathi Y.M., Wu S.-J., Zhang M. (2020). Inference for confidence sets of the generalized inverted exponential distribution under k-record values. *Journal of Computational and Applied Mathematics*, 380. DOI: 10.1016/j.cam.2020.112969
25. Wang L., Tripathi Y.M., Lodhi C. (2020). Inference for Weibull competing risks model with partially observed failure causes under generalized progressive hybrid censoring. *Journal of Computational and Applied Mathematics*, 368. DOI: 10.1016/j.cam.2019.112537
26. Lodhi C., Tripathi Y.M. (2020). Inference on a progressive type I interval-censored truncated normal distribution. *Journal of Applied Statistics*, 47(08), 1402-1422. DOI: 10.1080/02664763.2019.1679096
27. Ghosh A., Prakash O. (2020). Jordan Left $\{g, h\}$ -Derivation over Some Algebras. *Indian Journal of Pure and Applied Mathematics*, 51(04), 1433-1450. DOI: 10.1007/s13226-020-0475-8.
28. Kumar S., Kumar Tomar N. (2020). Mild solution and controllability of second-order non-local retarded semilinear systems. *IMA Journal of Mathematical Control and Information*, 33(01), 39-49. DOI: 10.1093/imamci/dny037
29. Islam H., Prakash O. (2020). New Z_4 codes from constacyclic codes over a non-chain ring. *Computational and Applied Mathematics*, 40(01) Paper No. 12, 17 pp. DOI: 10.1007/s40314-020-01398-y.
30. Islam H., Prakash O. (2020). New quantum codes from constacyclic and additive constacyclic codes. *Quantum Information Processing*, 19(09), Paper No. 319, 17 pp. DOI: 10.1007/s11128-020-02825-z.
31. Alahmadi A., Islam H., Prakash O., Solé P., Alkenani A., Muthana N., Hijazi R. (2021). New quantum codes from constacyclic codes over a non-chain ring. *Quantum Information Processing*, 20(02), Paper No. 60, 17 pp. DOI: 10.1007/s11128-020-02977-y.
32. Verma A.K., Pandit B., Escudero C. (2020). Numerical solutions for a class of singular boundary value problems arising in the theory of epitaxial growth. *Engineering Computations*, 37(07), 2539-2560. DOI: 10.1108/EC-08-2019-0360
33. Verma A.K., Pandit B., Agarwal R.P. (2020). On approximate stationary radial solutions for a class of boundary value problems arising in epitaxial growth theory. *Journal of Applied and Computational Mechanics*, 6(04), 713-734. DOI: 10.22055/JACM.2019.30982.1806
34. Kayal T., Tripathi Y.M., Dey S., Wu S.-J. (2020). On estimating the reliability in a multicomponent stress-strength model based on Chen distribution. *Communications in Statistics - Theory and Methods*, 49(10), 2429-2447. DOI: 10.1080/03610926.2019.1576886
35. Verma A.K., Pandit B., Agarwal R.P. (2020). On multiple solutions for a fourth order nonlinear singular boundary value problems arising in epitaxial growth theory. *Mathematical Methods in the Applied Sciences*, 44(07), 5418-5435. DOI: 10.1002/mma.7119
36. Das P., Rana S., Ramos H. (2020). On the approximate solutions of a class of fractional order nonlinear Volterra integro-differential initial value problems and boundary value problems of first kind and their convergence analysis. *Journal of Computational and Applied Mathematics*. DOI: 10.1016/j.cam.2020.113116
37. Mani Tripathi Y., Petropoulos C., Sen T. (2020). Quantile estimation for a progressively censored exponential distribution. *Communications in Statistics - Theory and Methods*, 49(16), 3919-3932. DOI: 10.1080/03610926.2019.1593456
38. Rani S., Verma R.K., Prakash O. (2020). Quantum Codes from Repeated-Root Cyclic and Negacyclic Codes of Length $4p^a s$ Over $\text{GF}(p^m)$. *International Journal of Theoretical Physics*, 60(04), 1299-1327. DOI: 10.1007/s10773-021-04757-5.
39. Mukherjee R., Singh R.K. (2021). Rational cuspidal curves in a moving family of \mathbb{P}^2 . *Complex Manifolds*,

- 8(01), 125-137. DOI: 10.1515/coma-2020-0110
40. Verma A.K., Singh M., Agarwal R.P. (2020). Regions of existence for a class of nonlinear diffusion type problems. *Applicable Analysis and Discrete Mathematics*, 14(01), 106-121. DOI: 10.2298/AADM190219013V
 41. Ma J., Wang L., Tripathi Y.M., Rastogi M.K. (2021). Reliability inference for stress-strength model based on inverted exponential Rayleigh distribution under progressive Type-II censored data. *Communications in Statistics: Simulation and Computation*. DOI: 10.1080/03610918.2021.1908552
 42. Jha M.K., Dey S., Tripathi Y.M. (2020). Reliability estimation in a multicomponent stress-strength based on unit-Gompertz distribution. *International Journal of Quality and Reliability Management*, 37(03), 428-450. DOI: 10.1108/IJQRM-04-2019-0136
 43. Wang L., Dey S., Tripathi Y.M., Wu S.-J. (2020). Reliability inference for a multicomponent stress-strength model based on Kumaraswamy distribution. *Journal of Computational and Applied Mathematics*, 376. DOI: 10.1016/j.cam.2020.112823
 44. Yadav S., Islam H., Prakash O., Solé P. (2021). Self-dual and LCD double circulant and double negacirculant codes over $F_q + uF_q + vF_q$. *Journal of Applied Mathematics and Computing*. DOI: 190-021-01499-9.
 45. De Filippis V., Prajapati B., Tiwari S.K. (2021). Some Generalized Identities on Prime Rings and their Application for the Solution of Annihilating and Centralizing Problems. *Quaestiones Mathematicae*. DOI: 10.2989/16073606.2020.1854887
 46. Prajapati B., Tiwari S.K. (2021). Some commutativity theorems on Banach algebras. *Rendiconti del Circolo Matematico di Palermo*, 70(02), 1041-1049. DOI: 10.1007/s12215-020-00543-0
 47. Sen T., Bhattacharya R., Pradhan B., Tripathi Y.M. (2021). under Type-II unified hybrid censoring scheme. *Quality and Reliability Engineering International*, 37(01), 78-89. DOI: 10.1002/qre.2721
 48. Mahto A.K., Tripathi Y.M., Wu S.-J. (2021). Statistical inference based on progressively type-II censored data from the Burr X distribution under progressive-stress accelerated life test. *Journal of Statistical Computation and Simulation*, 91(02), 368-382. DOI: 10.1080/00949655.2020.1815021
 49. Yadav A., Srivastava P.K. (2021). The impact of information and saturated treatment with time delay in an infectious disease model. *Journal of Applied Mathematics and Computing*, 66. DOI: 10.1007/s12190-020-01436-2
 50. Das P., Rana S. (2021). Theoretical prospects of fractional order weakly singular Volterra Integro differential equations and their approximations with convergence analysis. *Mathematical Methods in the Applied Sciences*, 44(11), 9419-9440. DOI: 10.1002/mma.7369
 51. Jaiswal J., Tomar N.K. (2021). Existence conditions for ODE functional observer design of descriptor systems. *IEEE Control Systems Letters*. DOI: 10.1109/LCSYS.2021.3076024
 52. Jaiswal J., Gupta M.K., Tomar N.K. (2021). Necessary and sufficient conditions for ODE observer design of descriptor systems. *Systems and Control Letters*, 151. DOI: 10.1016/j.sysconle.2021.104916
 53. Paul S., Pradhan D., Verma S. (2021). Vertex-Edge Domination in Interval and Bipartite Permutation Graphs. *Discussiones Mathematicae - Graph Theory*. DOI: 10.7151/dmgt.2411

Journal Publications (Other)

1. Verma, A.K., Pandit, B., Agarwal, R.P. (2021). An effective numerical technique to solve Lane-Emden type equations based on the Galerkin finite element method. *Advances in Mathematical Sciences and Applications*, 30(01), 39.
2. Alotaibi, R.M., Tripathi, Y.M., Dey, S., Rezk, H.R. (2020). Bayesian and non-Bayesian reliability estimation of multicomponent stress-strength model for unit Weibull distribution. *Journal of Taibah University for Science*, 14(01), 1164-1181. DOI: 10.1080/16583655.2020.1806525
3. Filippov, A.N., Koroleva, Y.O., Verma, A.K. (2020). Cell Model of a Fibrous Medium (Membrane). Comparison between Two Different Approaches to Varying Liquid Viscosity. *Membranes and Membrane Technologies*, 2(04), 230-243. DOI: 10.1134/S2517751620040058
4. Islam, H., Prakash, O. (2020). Construction of reversible cyclic codes over \mathbb{Z}_p . *Journal of Discrete Mathematical Sciences and Cryptography*. DOI: 10.1080/09720529.2020.1815341.
5. Verma, A.K., Urus, N., Singh, M. (2020). Monotone Iterative Technique for a Class of Four Point BVPs with Reversed Ordered Upper and Lower Solutions. *International Journal of Computational Methods*, 17(09). DOI: 10.1142/S021987621950066X
6. Islam, H., Prakash, O., Verma, R.K. (2020). New quantum codes from constacyclic codes over the ring $R_{\{q,m\}}$. *Advances in Mathematics of Communications*. DOI: 10.3934/amc.2020097.
7. Islam, H., Prakash, O., Solé, P. (2020). \mathbb{Z}_{4Z_4} [u]-additive cyclic and constacyclic codes. *Advances in Mathematics of Communications*. DOI: 10.3934/amc.2020094.
8. Singh, R.K., Sarma, R., Dey, R. (2020). On Euler-Ramanujan formula, Dirichlet series and minimal surfaces. Proceedings of Indian Academy of Sciences - Mathematical Sciences, 130. DOI: 10.1007/s12044-020-00590-8

9. Upadhyay, B.B., Mishra, P. (2020). On Generalized Minty and Stampacchia Vector Variational-Like Inequalities and Nonsmooth Vector Optimization Problem Involving Higher Order Strong Invexity. *Journal of Scientific Research*, 64(1), 182-191. DOI: 10.37398/JSR.2020.640139
10. Patel, S., Prakash, O. (2020). Repeated-root bidimensional (μ, ν) -constacyclic codes of length $4p^t 2^r$. *International Journal of Information and Coding Theory*, 5(03-4). DOI: 10.1504/IJICOT.2020.110738.
11. Das, P., Rana, S. (2021). Theoretical prospects of fractional order weakly singular Volterra Integro differential equations and their approximations with convergence analysis. *Mathematical Methods in the Applied Sciences*, 44(11). DOI: 10.1002/mma.7369
12. Tiwari, S.K., Singh, S.K. (2020). A note on generalized derivations with multilinear polynomials in prime rings. *Communications in Algebra*, 48(04), 1770-1788. DOI: 10.1080/00927872.2019.1705473
13. Tiwari, S.K. (2020). Identities with Generalized Derivations and Multilinear Polynomials. *Bulletin of the Iranian Mathematical Society*, 46(02), 425-440. DOI: 10.1007/s41980-019-00267-7

Conference Papers/Book Chapters

1. Upadhyay, B.B. and Shrivastava, A. (2020). Characterization of the solution sets for constrained pseudolinear semi-infinite programming problems, *Soft Computing, Theories and Applications*, NIT Patna.
2. Prakash, O. and Islam, H. (2020). Constacyclic codes over an extension of \mathbb{Z}_4 and related quaternary codes. *Recent Applications in Mathematical Sciences (NCRAMS-2020)*, S. V. Degree and PG College Jesus Nagar-AP.
3. Prakash, O. (2020). Constacyclic codes over rings and their application to quantum codes. *National Conference on Mathematics and its Applications (NCMA-2020)*, Mahatma Gandhi University, Nalgonda.
4. Prakash, O. and Islam, H. (2021). Mixed alphabets \mathbb{Z}_4 $\mathbb{Z}_q[u]$ -additive cyclic and constacyclic codes. *National Conference on Pure and Applied Mathematics*, NIT Manipur.
5. Upadhyay, B.B. and Mishra, P. (2020). On vector variational inequalities and vector optimization problems. *Soft Computing, Theories and Applications*, NIT Patna.
6. Verma, R.K., Prakash, O. and Singh, A. (2020). Quantum codes from skew constacyclic codes over $F_p^m + vF_p^m + v^2F_p^m$. *IEEE Algebraic and Combinatorial Coding Theory (ACCT-2020)*, Bulgaria.
7. Jaiswal, J., Gupta, M.K. and Tomar, N.K. (2021). On Functional Observers for Descriptor Systems. *Proceedings of American Control Conference 2021 (ACC 2021)*, New Orleans, Louisiana, USA.
8. Gupta, M.K., Tomar, N.K., Sharma, D. and Jaiswal, J. (2020). PD observer design for Descriptor Systems with Unknown Inputs. *Proceedings of 5th IEEE Conference on Recent Advances and Innovations in Engineering (ICRAIE 2020)*, Poornima College of Engineering, Rajasthan, India.

Mechanical Engineering

HEAD: DR. MOHD. KALEEM KHAN



DR. AKHILENDRA SINGH

Associate Professor

FEM, XFEM, Meshfree Method, Computational Mechanics, Fracture & Fatigue, Thermal Engineering.



DR. ATUL THAKUR

Associate professor

Bio-inspired Robotics, Physics aware planning of Robotics system and application of Robotics techniques for Micro- manipulation of Biological cell



DR. ANIRBAN BHATTACHARYA

Assistant professor

Incremental Sheet metal Forming, Rapid prototyping. Conventional Machining, Grinding, Non-Conventional machining Welding, Modeling and simulation of manufacturing process



DR. ABHISHEK RAJ

Assistant professor

Microfluidics, Bio mechanics, BioMEMS



DR. ASHWANI ASSAM

DST Inspire Faculty

Computational Fluid Dynamics (CFD), Compressible Fluid Flow, Turbulence Modeling, Rarefield gas flow, Numerical Methods for flow and heat transfer.



DR. ANIRBAN MAHTO

Assistant professor

Manufacturing Processes, Material processing, Tribology



DR. CHIRANJIT SARKAR

Assistant professor

Magnetorheological (MR) Fluids and devices, Tribology, CFD of Grease flow, Design of Bio Medical Devices, Economic in Design



DR. DEEPU.P

Assistant professor

Hydrodynamics Stability, Bio- Physical Aerodynamics, Multi phase Flow



DR. KARALI PATRA

Associate professor

Micro Machining techniques, Micro grinding Smart Sensor and actuators, Energy Harvesting.



DR. MOHD. KALEEM KHAN

Associate professor

Nuclear Reactor Safety, Solar Thermal Collectors, Flow boiling in Microchannels, Pool boiling heat transfer enhancement using, Non-Newtonian Fluid Mechanics, Thermohydraulics of Chaotic coils



DR. MANABENDRA PATHAK

Associate professor

Computational Fluid dynamics and heat Transfer, Turbulence Modeling, Two Phase flow in Micro and Mini Channels, Dispersion of Particles, Droplets & Bubbles at Micro & Nano Scales, Rheological & Heat Transfer Characteristics of viscoplastic fluids, Nuclear Materials, Solar Thermal Technology



DR. MAYANK TIWARI

Associate professor

Machine Dynamics- Rotor Dynamics, Acoustics, Tribology-Rolling Sliding, Fretting and Vacuum Tribology



DR. MURSHID IMAM

Assistant professor

Additive manufacturing, Plastic Deformation, Superplasticity, Friction Stir processing / Welding, Micro structural characterization of Deformed Metals, Finite Element Modeling of Welding machine



DR. PROBIR SAHA

Associate professor

Conventional and Non-Conventional Machining, Welding, Soft Computing in manufacturing process



DR. RISHI RAJ

Associate professor

Boiling Heat Transfer for Thermal Management Application, Colloids and Interfacial Science, Energy Water Food Nexus.



DR. SOMNATH SARANGI

Associate professor

Continuum Mechanics



DR. SUBRATA KUMAR

Associate professor

Heat transfer, Laser Material Processing, Flow of Granular material, CFD



DR. SUDHANSHU SEKHAR PANDA

Associate professor

Tool Condition Monitoring, Soft Computing, Metal cutting and machining, Industrial application of soft computing, Technique in machining, Designing Experiments, Statistical Modeling, Bio Machining, Sensor Calibration



DR. SURAJIT KUMAR PAUL

Assistant professor

Computational Plasticity, Fatigue and Fracture, Sheet metal Forming, Crashworthiness, Finite Element Analysis, Molecular Dynamics

Member - Professional Bodies

1. Akhilendra Singh (2012) Indian Society of Theoretical and Applied Mechanics
2. Akhilendra Singh (2012) Society of Automotive Engineers
3. Atul Thakur (2009) ASME
4. Atul Thakur (2011) IEEE
5. Manabendra Pathak (2018) National Society of Fluid Mechanics and Fluid Power
6. Manabendra Pathak (2010) American Society of Mechanical Engineers
7. Manabendra Pathak (2013) Indian Society for Heat and Mass Transfer
8. Mayank Tiwari (2006) Tribology Society of India
9. Mayank Tiwari (2018) ASME
10. Mohd. Kaleem Khan (2010) American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
11. Mohd. Kaleem Khan (2018) National Society for Fluid Mechanics and Fluid Power (NSFMFP)
12. Mohd. Kaleem Khan (2018) International Solar Energy Society (ISES)
13. Mohd. Kaleem Khan (2011) American Society of Mechanical Engineers (ASME)
14. Murshid Imam (2021) Member of the Alumni Association of JWRI, Osaka University, Japan
15. Sudhansu Sekhar Panda (2020) Bihar Vikas Mission
16. Surajit Kumar Paul (2011-2012) Indian Institute of Metals

Member - Editorial Board

1. Atul Thakur (2020) **Associate Editor** - Journal of Computing and Information Science in Engineering
2. Mayank Tiwari (2019) **Editor** - Journal of Tribology India
3. Murshid Imam (2020) **Editor** - High Temperature Materials and Processes

Awards & Honours

1. Piyush Kumar and Manabendra Pathak (2020) **Best Paper Award in 5th World Congress on Momentum, Heat and Mass Transfer (MHMT20)**
2. Madhu Ranjan Gunjan, Alok Kumar, and Rishi Raj (2020) **Best Poster Award for the paper titled "Constant Mean Curvature Based Framework for Modeling Droplet Evaporation on Lubricant-Infused Surfaces," 10th International Colloids Conference, Mallorca, Spain (Conducted Online), December 6-9, 2020.**
3. Mohd. Kaleem Khan (2021) **Chief Guest of the valedictory function of the STC Computational and Experimental Techniques in Heat transfer and Fluid Flows organized by NIT Uttarakhand on 5th March 2021.**
4. Mohd. Kaleem Khan (2020) **Recognized Reviewer Award by Applied Energy Journal**
5. Mohd. Kaleem Khan (2020) **Recognized Reviewer Award by ETFS Journal**
6. Mohd. Kaleem Khan (2020) **Recognized Reviewer Award by IJHMT Journal**
7. Mohd. Kaleem Khan (2020) **Recognized Reviewer Award by Renewable Energy Journal**

Sponsored Research Projects

1. Controlling the vibrational dynamics of fluid-carrying flexible tubes via acoustic irradiation (SERB-DST, Rs.26.50 Lakhs) (PI : Dr. Deepu P)
2. Design and development hybrid magnetorheological brake and its Tribo effectiveness studies on a brake inertia dynamometer (SERB, Rs.37.23 Lakhs) (PI : Dr. Chiranjit Sarkar)
3. Design of a hybrid magneto rheometer operating under compression and shear mode for characterizing rheological and tribological properties of nano sma (DST Nano-mission, Rs.22.41 Lakhs) (PI : Dr. Chiranjit Sarkar)
4. Design of an Integral Squeeze Film Damper (Aeronautic and R&D Board, Rs. 36.41 Lakhs) (PI : Dr. Mayank Tiwari)
5. Design of Asperity for Textured Metal Surfaces to Improve Tribological Characteristic in Sliding: An In Situ Imaging Approach (SERB, Rs.28.96 Lakhs) (PI : Dr. Anirban Mahato)
6. Design of Novel SMA bearing Supports and Retrofit for Enhanced Performance of Rotating Machinery (MHRD, Ministry of Power, General Electric, Rs.100.00 Lakhs) (PI : Dr Mayank Tiwari)

7. Developing Interfacial Characterization Facilities (DST-FIST, Rs. 290 lakhs) (PI : HoD, ME)
8. Development of an agricultural waste based off-the-grid climate control unit for storage and processing of agricultural produce (IMPRINT-2A, Rs.108 lakhs) (PI: Dr. Rishi Raj)
9. Development of an Ionic Liquid-based Ultra-High Heat Dissipation Module for Energy Efficient Boiling Systems (SERB CRG, Rs.47.00 Lakhs) (PI: Dr. Rishi Raj)
10. Development of cryogenic micromachining for fabrication of soft and stretchable polymer based artificial skin with multi-modal sensing capability (DST, Rs. 53.67 Lakhs) (PI : Dr. Karali Patra)
11. Development of Lizard-like Robotic Spy Surveillance System (SERB, Rs. 101.5 lakhs) (PI : Dr. Raju Halder, Co-PI: Dr Atul Thakur)
12. Development of Low Cost, Efficient Mechanism for Collection of Garbage and Dirt for Municipal corporations, Panchayat (MHRD, Rs.16.71 Lakhs) (PI : Dr. Mayank Tiwari)
13. Development of low friction rolling element bearings for enhanced Reliability and Efficiency (IMPRINT SERB, Rs.64.60 Lakhs) (PI: Dr. Mayank Tiwari)
14. Development of Multi-layered Microstructure Gradient Functionally Graded Composite Material using Friction stir Additive Manufacturing (SERB-ECR, Department of Science and Technology, Govt. of India, Rs.24.96 Lakhs) (PI : Dr. Murshid Imam)
15. Development of novel SMA bearing performances and durability of rotating machinery (UAY, Rs.182.26 Lakhs) (PI: Dr. Mayank Tiwari)
16. Direct Metal Laser Sintering of C103 Refractory Alloy (Defense Research and Development Laboratory, DRDO, Govt. of India, Rs.72.80 Lakhs) (PI : Dr. Viswanath Chinthapentha, IIT Hyderabad, Co-PI: Dr. Murshid Imam)
17. Effect of burnup and ballooning and burst behavior of Zircaloy-4 cladding tubes under simulated LOCA (BRNS, Rs.32.99 Lakhs) (PI : Dr. Mohd. Kaleem Khan)
18. Effect of cyclic creep in rolling contact fatigue of railways (ASEAN-India STI Cooperation (AISTDF), Rs.20.07 Lakhs) (PI : Dr. Surajit Kumar Paul)
19. Experiments and Modelling of Wall-Bounded flow of Lubricating Magnetorheological Grease (SERB, Rs.19.20 Lakhs) (PI : Dr. Chiranjit Sarkar)
20. Fabrication of functionally gradient composite materials (FGCMs) using wire arc additive manufacturing (R V Machine Tools, Coimbatore, Rs.1.00 Lakhs) (PI : Dr. Murshid Imam)
21. Hybrid 3D printing with GMAW-twin wire-based additive layer enhanced by friction stir processing (UK-India Education and Research Initiative, Rs.12.84 Lakhs) (PI : Dr. Murshid Imam)
22. Hybrid 3D printing with GMAW-twin wire-based additive layer enhanced by friction stir processing (Ministry of Human Resource Development (MHRD), Govt. of India, Rs.43.19 Lakhs) (PI : Dr. Murshid Imam)
23. Improvement of fatigue and ductile fracture behavior of steel and aluminium alloy specimens by application of pulsed electric current [Science & Engineering Research Board (SERB), Rs.21.96 Lakhs] (PI : Dr. Surajit Kumar Paul)
24. Influence of hydrogen on fatigue and fracture performance of ferritic-martensitic steel (P91) both at room and elevated temperature (Science & Engineering Research Board (SERB), Rs.36.41 Lakhs) (PI : Dr. Akhilendra Singh)
25. Interaction of vesicles with the deformable boundary mimicking cell-wall interaction in cardiovascular diseases (Science and Engineering Research Board, GOI, Rs.30.00 Lakhs) (PI : Dr. Abhishek Raj)
26. Passive Two-Phase Heat Spreader for Hotspot Mitigation in Microgravity of Space (ISRO HSFC, Rs.24.00 Lakhs) (PI : Dr. Rishi Raj)
27. Permanent Dropwise Condensation via Amphiphilic Additives in Vapor Phase (DST Indo-Korea Scheme, Rs.30.00 Lakhs) (PI : Dr. Rishi Raj)
28. Psychrometry Driven Design and Fabrication of An All-Season Optimal Atmospheric Water Harvester (DST WTI, Rs.32.00 Lakhs) (PI : Dr. Rishi Raj)
29. Surface Active Additives for Enhanced Flow Boiling in Microchannels (DST Indo-Russia Scheme, Rs.16.00 Lakhs) (PI : Dr. Rishi Raj)
30. Mechanical and micro-structural characterization of additive friction stirred (AFS) 3D structures made of Al6061 T6 aluminium powder" (PI: Dr. ProbirSaha, SERB, 21.7 lakhs, 2019-2022)

Consultancy Projects

1. A novel Friction stir processing Tool for In-situ powder deposition (R V Machine Tools, Coimbatore, Rs.0.50 Lakhs) Consultant Name: Dr. Murshid Imam
2. Analysis of Rolling Element bearing Friction Torque (National Engineering Industry Jaipur, Rs.2.10 Lakhs) Consultant Name: Dr. Mayank Tiwari
3. Determine hole expansion ratio (HER) from notch tensile test (Tata Steel Limited, R&D, Jamshedpur, Rs.17.70 Lakhs) Consultant Name: Dr. Surajit Kumar Paul
4. Establish correlation between specimen level fatigue and cornering fatigue test (Tata Steel Limited, R&D, Jamshedpur, Rs.17.70 Lakhs) Consultant Name: Dr. Surajit Kumar Paul
5. Predelivery Inspection of 03 truck mounted road sweeping machines (Pyara Singh and Sons, Rs.1.32 Lakhs) Consultant Name: Dr. Manabendra Pathak, Dr. Mohd. Kaleem Khan, Dr. Anirban Bhattacharya, Dr. Anirban Mahato
6. Predelivery Inspection of 75 units of Fogging Machine for Patna Municipal Corporation (Applied Communication and Control, Rs.0.35 Lakhs) Consultant Name: Dr. Manabendra Pathak, Dr. Mohd. Kaleem Khan, Dr. Anirban Bhattacharya, Dr. Anirban Mahato
7. Technical Vetting of the DPC for Redevelopment of Bhagalpur Townhall (Bhagalpur Smart City Limited, Rs. 5.07 Lakhs) Consultant Name: Dr. Sudhir Varma (Civil part), Dr. Mohd. Kaleem Khan (HVAC part), Dr. Siva Subramani (Electrical part), Dr. Rajib Jha (Audio visual part)
8. Vetting of design and drawing of water transporting system from Vaishali Branch Canal to Abhishek Pushkarni Sarovar (Water Resource Department, Government of Bihar, Rs.1.42 Lakhs) Consultant Name: Dr. Manabendra Pathak and Dr. Mohd. Kaleem Khan

Patents (filed / granted)

1. Patent Name: A cutting tool; Patent Owner: Dr. Anirban Mahato (Application No.:202031032781 and Status: Not Published)
2. Patent Name: A hybrid tracking system for portable parabolic trough collector; Patent Owner: Dr. Manabendra Pathak (Application No.:202031022971 and Status: Published)
3. Patent Name: A method of joining polymer rod through deformation technique; Patent Owner: Dr. Sudhansu Sekhar Panda (Application No.: 201831007503 and Status: Published)
4. Patent Name: Cryogenic micromachining apparatus and method thereof; Patent Owner: Dr. Karali Patra (Application No.: 202031020431 and Status: Published)
5. Patent Name: Curved Serpentine Flow Inverter; Patent Owner: Dr. Mohd. Kaleem Khan (Application No.: 201931031533 and Status: Published)
6. Patent Name: High Concentration Fresnel Lens with Spherical Facets; Patent Owner: Dr. Mohd. Kaleem Khan (Application No.: 202031047971 and Status: Published)
7. Patent Name: Stepped Microchannel Heat Sink for Cooling an Electronic Device; Patent Owner: Dr. Manabendra Pathak and Dr. Mohd. Kaleem Khan (Application No.: 201931000706 and Status: Published)
8. Patent Name: Variable frequency driven biaxial testing device; Patent Owner: Dr. Karali Patra (Application No.: 202031020867 and Status: Published)

Invited Lectures by Faculty Members

1. Performance Enhancement of Solar Collectors **by** Mohd. Kaleem Khan (LNJPIT Chhapra TEQIP-III sponsored Faculty Development Program on Advances in Mechanical Engineering on 26th June 2020)
2. Performance Evaluation of Solar Collectors **by** Mohd. Kaleem Khan (NIT Jamshedpur TEQIP-III sponsored short term course on Computational Fluid Dynamics on 1st July 2020)
3. Evolutionary Multi-Objective Optimization **by** Probir Saha (Department of Production Engineering, VSSUT, Burla) (17th November, 2020)
4. Novel Numerical Techniques for Thermo Mechanical System **by** Akhilendra Singh (Lecture at Govt Engineering College Raipur) Dec 23, 2020
5. Convergence and Error Estimation in FEM and Numerical Integration **by** Akhilendra Singh (MNIT Jaipur) Jan 01, 2021.
6. Bubble Dynamics during Boiling with Foaming Solutions: Implications on Earth and Microgravity Heat **by** Rishi Raj (Department of Mechanical and Materials Engineering, University of Cincinnati) (2021)
7. Enhancement of Boiling Heat Transfer via the Suppression of Coalescence in Microgravity **by** Rishi Raj (ISRO Academia Day 2021)

8. Novel Insights on Fluidic Interfaces in Thermal Applications, Bubble Dynamics during Boiling **by** Rishi Raj (Science Connect: Langmuir, The ACS Journal of Fundamental Interface Science) (2020)
9. Boiling Heat Transfer in Earth and Space **by** Rishi Raj (TEQIP-3 Webinar, Bhagalpur College of Engineering, Gaya, Bihar) (2020)
10. Boiling Heat Transfer in Earth and Space **by** Rishi Raj (TEQIP-3 Webinar, Gaya College of Engineering, Gaya, Bihar) (2020)
11. Performance Evaluation of Solar Concentrating Collectors **by** Mohd. Kaleem Khan (NIT Uttarakhand, TEQIP-III Sponsored Short-Term Course on Computational and Experimental Techniques in Heat transfer and Fluid Flows on 5th March 2021)
12. Soft and Stretchable Polymers for Smart Sensors and Smart Actuators Applications **by** Karali Patra (PEC, Chandigarh) (2020)
13. The Effects of Tool Textures and Minimum Quantity Lubrication in Micro-grinding of BK7 glass **by** Karali Patra (IIT BHU, Varanasi) (2020)
14. A Concentrated Solar Receiver Tube with Axially Oriented Porous Medium **by** Manabendra Pathak (Organizer: National Institute of Technology Jamshedpur) (2020)
15. A Thermal Energy Storage System for Solar Thermal Applications **by** Manabendra Pathak (Organizer: National Institute of Technology Patna) (2020)
16. Lecture on Hydraulic Turbines-1 **by** Manabendra Pathak (Loknaya Jai Prakash Institute of Technology, Chapra) (2020)
17. Lecture on Hydraulic Turbines-2 **by** Manabendra Pathak (Loknaya Jai Prakash Institute of Technology, Chapra) (2020)
18. Microchannel Heat Sinks for Thermal Management of Electronic Devices **by** Manabendra Pathak (Organizer: Madan Mohan Malaviya University of Technology) (2020)
19. Renewable Energy based Technologies for Rural Development in Assam **by** Manabendra Pathak (Organizer: Gauhati University) (2020)
20. A CFD Analysis of PCM based Energy Storage System for Solar Energy Applications **by** Manabendra Pathak (Organizer: A. D. Patel Institute of Technology, Ahmadabad) (2021)
21. Design and Development of a Portable Parabolic trough Collector For Household Applications **by** Manabendra Pathak (Organizer: Rajiv Gandhi Memorial College of Engineering and Technology, Nandyal) (2021)
22. Computational Fluid Dynamics (CFD) Simulation of a Closed-loop Two-phase Thermosyphon (CLTPT) System **by** Manabendra Pathak (Organizer: National Institute of Technology Uttarakhand) (2021)
23. Effects of Loop Components in Mitigating Flow Boiling Instabilities in Microchannel Heat Sinks **by** Manabendra Pathak (Organizer: National Institute of Technology Uttarakhand) (2021)
24. Actuation and Control of Micro- and Nano- Robots for Biomedical Applications **by** Atul Thakur (IIT Indore) (2020)
25. Bio-Inspired Underwater Robotics **by** Atul Thakur (Maulana Azad National Institute of Technology, Bhopal) (2020)
26. Actuation and Control of Micro- and Nano- Robots for Biomedical Applications **by** Atul Thakur (National Institute of Technology Silchar) (2020)
27. Underwater Robotics at various size scales **by** Atul Thakur (Indian Institute of Technology BHU) (2021)
28. Evolution of Surface Topography in Tribological Components **by** Mayank Tiwari (International Conference on Engineering Tribology and Applied Technology Taiwan) (2020)
29. Wear Evolution with Operational Cycles **by** Mayank Tiwari (India Trib 2019 IISc Bangalore)
30. Vibration of Mechanical Components Due to Wear **by** Mayank Tiwari (Short Term Course on Noise and Vibration of Mechanical Systems IIT Indore) (2020)
31. Vibration of Mechanical Components Due to Wear **by** Mayank Tiwari (TEQIP-III Sponsored Short Term Course on Industrial Noise and Vibration Control IIT Indore 26th-28th November 2020)
32. Surface Topography Variation During Wear Process **by** Mayank Tiwari (Tribology Society of India 12th Summer School in Tribology July, 2020)
33. Tribology of Machine Elements: Experimental and Computational Approach **by** Mayank Tiwari (Workshop on "Interdisciplinary Approach of Tribology in Engineering and Biomedical Research" NIT Silchar 7th August, 2020)
34. Wear of Gear and Bearing- Surface Characterisation, Fretting **by** Mayank Tiwari (TEQIP-III STTP on "Basics of Tribology and Its Industrial Engineering Applications (BTIEA-2021)" Sardar Vallabhbhai National Institute of Technology (SVNIT) 4th to 8th Jan 2021)
35. Vacuum /Space Tribology **by** Mayank Tiwari (Recent Advances in Tribology and Surface Engineering: Series 3 of 4 6-Day AICTE Sponsored Short Term Training Programme (STTP) Series SAINTGITS COLLEGE OF ENGINEERING, Kottayam 16th October 2020)
36. Gear and Bearing Wear **by** Mayank Tiwari (RBS – 2020, 26th November, 2020 SRM Chennai)
37. Recent Trends in Metal based 3D Printing **by** Murshid Imam (Lakireddy Bali Reddy College of Engineering) (2021)
38. Hybrid 3d Metal Printing **by** Murshid Imam (Lakireddy Bali Reddy College of Engineering) (2021)
39. Metal Additive Manufacturing **by** Murshid Imam (Loknaya Jai Prakash Institute of Technology) (2020)

Short-Term Courses, Training Programmes and Workshops organised

1. Mobile Robotics by Dr. Atul Thakur (10th –12th November, 2020) (*Self-sponsored*)

Journal Publications (Scopus – Indexed)

1. Ahmad I., Pathak M., Khan M.K. (2021). Electrowetting induced microdroplet oscillation over interdigitated electrodes for hotspot cooling applications. *Experimental Thermal and Fluid Science*, 125. DOI: 10.1016/j.expthermflusci.2021.110372
2. Syreyschikova N.V., Guzeev V.I., Ardashev D.V., Pimenov D.Y., Patra K., Kaponek W., Nadolny K. (2020). A study on the machinability of steels and alloys to develop recommendations for setting tool performance characteristics and belt grinding modes. *Materials*, 13(18). DOI: 10.3390/ma13183978
3. Kumar N., Raza Q., Sinha K.N.R., Seth D., Raj R. (2020). Amphiphilic additives to enhance pool boiling heat transfer in confined spaces. *Journal of Enhanced Heat Transfer*, 27(06), 545-560. DOI: 10.1615/JENHHEATTRANSF.2020034432
4. Feng R., Li X., Zhu L., Thakur A., Wei X. (2021). An Improved Two-Level Support Structure for Extrusion-Based Additive Manufacturing. *Robotics and Computer-Integrated Manufacturing*, 67. DOI: 10.1016/j.rcim.2020.101972
5. Ghosh D.P., Sharma D., Kumar A., Saha S.K., Raj R. (2020). An ingenious fluidic capacitor for complete suppression of thermal fluctuations in two-phase microchannel heat sinks. *International Communications in Heat and Mass Transfer*, 110. DOI: 10.1016/j.icheatmasstransfer.2019.104347
6. Singh R.K., Tiwari M., Saksena A.A., Srivastava A. (2020). Analysis of a compact squeeze film damper with magneto-rheological fluid. *Defence Science Journal*, 70(02). 122-130. DOI: 10.14429/dsj.70.12788
7. Kesharwani R., Imam M., Sarkar C. (2020). Clarification on the choice of sheet positioning in friction stir welding of dissimilar materials. *Manufacturing Letters*, 24, 100-104. DOI: 10.1016/j.mfglet.2020.04.008
8. Hedau G., Dey P., Raj R., Saha S.K. (2020). Combined effect of inlet restrictor and nanostructure on two-phase flow performance of parallel microchannel heat sinks. *International Journal of Thermal Sciences*, 153. DOI: 10.1016/j.ijthermalsci.2020.106339
9. Pratap A., Patra K. (2020). Combined effects of tool surface texturing, cutting parameters and minimum quantity lubrication (MQL) pressure on micro-grinding of BK7 glass. *Journal of Manufacturing Processes*, 54, 374-392. DOI: 10.1016/j.jmapro.2020.03.024
10. Gupta D., Saha P., Roy S. (2021). Computational analysis of perforation effect on the thermo-hydraulic performance of micro pin-fin heat sink. 163. DOI: 10.1016/j.ijthermalsci.2021.106857
11. Sharma K., Deepu P., Kumar S. (2020). Convective heat transfer in a tube filled with homogeneous and inhomogeneous porous medium. *International Communications in Heat and Mass Transfer*, 117. DOI: 10.1016/j.icheatmasstransfer.2020.104791
12. Paul S.K. (2020). Correlation between endurance limit and cyclic yield stress determined from low cycle fatigue test. *Materialia*, 11. DOI: 10.1016/j.mtla.2020.100695
13. Das B., Singh A., Paul S.K., Arora K.S., Shome M. (2020). Correlation between fatigue response of preformed bend DP600 steel specimen and wheel disc. *Fatigue and Fracture of Engineering Materials and Structures*, 43 (12), 2842-2853. DOI: 10.1111/ffe.13299
14. Gupta R.K., Mahato A., Bhattacharya A. (2021). Damage analysis of carbon fiber reinforced aluminum laminate under short beam and single edge notch beam bend test. *International Journal of Mechanical Sciences*, 198. DOI: 10.1016/j.ijmecsci.2021.106393
15. Sinha K.N.R., Kumar V., Kumar N., Thakur A., Raj R. (2021). Deep learning the sound of boiling for advance prediction of boiling crisis. *Cell Reports Physical Science*, 2(03). DOI: 10.1016/j.xcrp.2021.100382
16. Rajput A., Paul S.K. (2021). Deformation inhomogeneity at the crack tip of polycrystalline copper. *Materials Today Communications*, 26. DOI: 10.1016/j.mtcomm.2020.101781
17. Singh A., Kumar Thakur M., Sarkar C. (2020). Design and development of a wedge shaped magnetorheological clutch. *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, 234(09), 1252-1266. DOI: 10.1177/1464420720931886
18. Kumar N., Sinha K.N.R., Raza M.Q., Verma A., Seth D., Jasvanth V.S., Raj R. (2020). Design, fabrication, and performance evaluation of a novel orientation independent and wickless heat spreader. *International Journal of Heat and Mass Transfer*, 153. DOI: 10.1016/j.ijheatmasstransfer.2020.119572
19. Verma A., Kumar N., Raj R. (2021). Direct prediction of foamability of aqueous surfactant solutions using property values. *Journal of Molecular Liquids*, 323. DOI: 10.1016/j.molliq.2020.114635

20. Gunjan M.R., Kumar A., Raj R. (2020). Droplets on Lubricant-Infused Surfaces: Combination of Constant Mean Curvature Interfaces with Neumann Triangle Boundary Conditions. *Langmuir*, 36(11), 2974-2983. DOI: 10.1021/acs.langmuir.9b03927
21. Sarode A., Raj R., Bhargav A. (2020). Effect of confinement and heater surface inclination on pool boiling performance of patterned wettability surfaces. *Journal of Enhanced Heat Transfer*, 27(08), 711-727. DOI: 10.1615/JENHHEATTRANSF.2020033852
22. Maurya C.S., Sarkar C. (2020). Effect of Fe₃O₄ Nanoparticles on Magnetorheological Properties of Flake-Shaped Carbonyl Iron Water-Based Suspension. *IEEE Transactions on Magnetics*, 56(12), DOI: 10.1109/TMAG.2020.3031239
23. Hedau G., Raj R., Saha S.K. (2021). Effect of outlet plenum design on flow boiling heat transfer in microchannel heat sinks. *Thermal Science and Engineering Progress*, 23. DOI: 10.1016/j.tsep.2021.100868
24. Rajput A., Paul S.K. (2021). Effect of soft and hard inclusions in tensile deformation and damage mechanism of Aluminum: A molecular dynamics study. *Journal of Alloys and Compounds*. 869. DOI: 10.1016/j.jallcom.2021.159213
25. Ghosal P., Paul S.K. (2020). Effect of specimen orientation to the rolling direction on uniaxial tensile forming and failure limits. *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, 234 (13), 1598-1603. DOI: 10.1177/0954405420937507
26. Pratap A., Patra K. (2020). Evolution of chemo-mechanical effects during single grit diamond scratching of monocrystalline silicon in the presence of potassium hydroxide. *Wear*, 452-453. DOI: 10.1016/j.wear.2020.203292
27. Singh K., Tiwari M., Mahato A. (2020). Evolution of regimes of wear in zircaloy-4/inconel-600 contact subjected to fretting loading. *Tribology International*, 147. DOI: 10.1016/j.triboint.2020.106274
28. Prajapati D.K., Tiwari M. (2020). Experimental analysis of contact fatigue damage using fractal methodologies. *Wear*, 450-451. DOI: 10.1016/j.wear.2020.203262
29. Hedau G., Dey P., Raj R., Saha S.K. (2020). Experimental and numerical investigation of the effect of number of parallel microchannels on flow boiling heat transfer. *International Journal of Heat and Mass Transfer*, 158. DOI: 10.1016/j.ijheatmasstransfer.2020.119973
30. Thakur M.K., Sarkar C. (2020). Experimental and numerical study of magnetorheological clutch with sealing at larger radius disc. *Defence Science Journal*, 70(06), 575-582. DOI: 10.14429/DSJ.70.15778
31. Raj S., Pathak M., Khan M.K. (2020). Flow boiling characteristics in different configurations of stepped microchannels, *Experimental Thermal and Fluid Science*, vol. 119, 110217 (2020). (DOI: 10.1016/j.expthermflusci.2020.110217)
32. Garg A., Bhattacharya A. (2020). Friction stir spot welding of AA6061-T6 and Cu with preheating: Strength and failure behavior at different test temperatures. *International Journal of Advanced Manufacturing Technology*. 108(5th June), 1613-1629. DOI: 10.1007/s00170-020-05498-1
33. Kumar A., Paul S.K. (2020). Healing of fatigue crack in steel with the application of pulsed electric current. *Materialia*, 14. DOI: 10.1016/j.mtla.2020.100906
34. Bhattacharyya S., Pathak M., Sharifpur M., Chamoli S., Ewim D.R.E. (2021). Heat transfer and exergy analysis of solar air heater tube with helical corrugation and perforated circular disc inserts. *Journal of Thermal Analysis and Calorimetry*, 145(03), 1019-1034. DOI: 10.1007/s10973-020-10215-x
35. Kapłonek W., Mikołajczyk T., Pimenov D.Y., Gupta M.K., Mia M., Sharma S., Patra K., Sutowska M. (2020). High-accuracy 3D optical profilometry for analysis of surface condition of modern circulated coins. *Materials*, 13(23), 1-19. DOI: 10.3390/ma13235371
36. Gundupalli, S.P., Shukla, R., Gupta, R., Hait, S., Thakur, A., (2021). Optimal Sequence Planning for Robotic Sorting of Recyclables from Source-Segregated Municipal Solid Waste, *Journal of Computing and Information Science in Engineering*, 21(1), 014502
37. Feng, R., Li, X., Zhu, L., Thakur, A., Wei, X., (2021). An Improved Two-Level Support Structure for Extrusion-Based Additive Manufacturing, *Robotics and Computer-Integrated Manufacturing*, 67, 101972
38. Raj A., Thakur A. (2020). Hydrodynamic Parameter Estimation for an Anguilliform-inspired Robot. *Journal of Intelligent and Robotic Systems: Theory and Applications*, 99 (3rd April), 837-857. DOI: 10.1007/s10846-020-01154-8
39. Srivastava A.K., Tiwari M., Singh A. (2021). Identification of rotor-stator rub and dependence of dry whip boundary on rotor parameters. *Mechanical Systems and Signal Processing*, 159. DOI: 10.1016/j.ymssp.2021.107845
40. Kumar A., Paul S.K. (2021). Improvement in tensile properties of pre-strained steel specimen by applying pulsed electric current. *Materialia*, 15. DOI: 10.1016/j.mtla.2020.100960
41. Ghosal P., Paul S.K., Raj A. (2021). Influence of uniaxial and biaxial pre-straining on the high cycle fatigue performance of DP590 steel. *International Journal of Fatigue*, 151. DOI: 10.1016/j.ijfatigue.2021.106369

42. Rahman O.S.A., Mukherjee B., Priyadershini S., Gunjan M.R., Raj R., Aruna S.T., Keshri A.K. (2020). Investigating the wetting phenomena and fabrication of sticky, para-hydrophobic cerium oxide coating. *Journal of the European Ceramic Society*, 40(15), 5749-5757. DOI: 10.1016/j.jeurceramsoc.2020.06.028
43. Kumar R., Singh A., Tiwari M. (2020). Investigation of crack repair using piezoelectric material under thermo-mechanical loading. *Journal of Intelligent Material Systems and Structures*, 31(19), 2243-2260. DOI: 10.1177/1045389X20943946
44. Thakur M.K., Sarkar C. (2020). Investigation of Different Groove Profile Effects on Torque Transmission in Shear Mode Magnetorheological Clutch: Numerical Simulation and Experimental Study. *Journal of Tribology*, 143(09). DOI: 10.1115/1.4049255
45. Shah M.S., Saha P. (2020). Investigation on performance characteristics of micro-EDM dressing for the fabrication of micro-rod(s) on Ti-6Al-7Nb biomedical material. *Machining Science and Technology*, 25(03), 398-421. DOI: 10.1080/10910344.2020.1815050
46. Saraf B., Garg A., Saurav S., Bhattacharya A. (2020). Joining of ABS parts built by material extrusion: Analysis of strength and fracture behaviour. *CIRP Journal of Manufacturing Science and Technology*, 31, 459-466. DOI: 10.1016/j.cirpj.2020.07.008
47. Kumar V., Sinha K.N.R., Raj R. (2020). Leidenfrost phenomenon during quenching in aqueous solutions: Effect of evaporation-induced concentration gradients. *Soft Matter*, 16(26), 6154-6154. DOI: 10.1039/d0sm00622j
48. Suthar H., Bhattacharya A., Paul S.K. (2020). Local deformation response and failure behavior of AA6061-AA6061 and AA6061-AA7075 friction stir welds. *CIRP Journal of Manufacturing Science and Technology*, 30, 12-24. DOI: 10.1016/j.cirpj.2020.03.006
49. Raturi M., Bhattacharya A. (2021). Mechanical strength and corrosion behavior of dissimilar friction stir welded AA7075-AA2014 joints. *Materials Chemistry and Physics*, 262. DOI: 10.1016/j.matchemphys.2021.124338
50. Garg A., Raturi M., Garg A., Bhattacharya A. (2020). Microstructure evolution and mechanical properties of double-sided friction stir welding between AA6061-T6 and AA7075-T651. *CIRP Journal of Manufacturing Science and Technology*, 31, 431-438. DOI: 10.1016/j.cirpj.2020.07.005
51. Kumar R., Pathak H., Singh A., Tiwari M. (2021). Modeling of crack repair using piezoelectric material: XFEM approach. *Engineering Computations*, 38(02), 586-617. DOI: 10.1108/EC-01-2020-0001
52. Sahoo P., Patra K., Singh V.K., Mittal R.K., Singh R.K. (2020). Modeling Dynamic Stability and Cutting Forces in Micro Milling of Ti6Al4V Using Intermittent Oblique Cutting Finite Element Method Simulation-Based Force Coefficients. *Journal of Manufacturing Science and Engineering, Transactions of the ASME*, 142(09). DOI: 10.1115/1.4047432
53. Hassan M.A., Pathak M., Khan M.K., Khan N.H. (2020). Natural convection of viscoplastic fluids in an enclosure with partially heated bottom wall. *International Journal of Thermal Sciences*, 158. DOI: 10.1016/j.ijthermalsci.2020.106527
54. Ghosal P., Paul S.K., Das B., Chinara M., Arora K.S. (2020). Notch fatigue performance of DP600 steel under different pre-straining paths. *Theoretical and Applied Fracture Mechanics*, 108. DOI: 10.1016/j.tafmec.2020.102630
55. Sarode A., Raj R., Bhargav A. (2020). On the role of confinement plate wettability on pool boiling heat transfer. *International Journal of Heat and Mass Transfer*, 156. DOI: 10.1016/j.ijheatmasstransfer.2020.119723
56. Kumar A., Gunjan M.R., Raj R. (2020). On the validity of force balance models for predicting gravity-induced detachment of pendant drops and bubbles. *Physics of Fluids*, 32(10). DOI: 10.1063/5.0025488
57. Gundupalli S.P., Shukla R., Gupta R., Hait S., Thakur A. (2020). Optimal Sequence Planning for Robotic Sorting of Recyclables from Source-Segregated Municipal Solid Waste. *Journal of Computing and Information Science in Engineering*, 21(01). DOI: 10.1115/1.4047485
58. Gouda R.K., Pathak M., Khan M.K. (2020). Pool boiling heat transfer characteristics of a biosurfactant particle deposited heating surface. *International Journal of Heat and Mass Transfer*, 163. DOI: 10.1016/j.ijheatmasstransfer.2020.120455
59. Kumar P., Pathak M. (2020). Pressure Transient during Wettability-Mediated Droplet Formation in a Microfluidic T-Junction. *Industrial and Engineering Chemistry Research*, 59(25), 11839-11850. DOI: 10.1021/acs.iecr.0c01504
60. Ahmed S., Verma M., Saha P. (2020). Process responses during μ FSW of AA6061-T6 under the influence of triple-spiral micro-grooves on shoulder end-surface. *Journal of Materials Processing Technology*, 290. DOI: 10.1016/j.jmatprotec.2020.116984
61. Maurya C.S., Sarkar C. (2021). Rheological response of soft flake-shaped carbonyl iron water-based MR fluid containing iron nanopowder with hydrophilic carbon shell. *Rheologica Acta*, 60(05), 277-290. DOI: 10.1007/s00397-021-01268-2

62. Sarode A., Raj R., Bhargav A. (2020). Scalable macroscale wettability patterns for pool boiling heat transfer enhancement. *Heat and Mass Transfer*, 56(03), 989-1000. DOI: 10.1007/s00231-019-02783-y
63. Nishant Ranjan Sinha K., Ranjan D., Kumar N., Qaisar Raza M., Raj R. (2020). Simultaneous audio-visual-thermal characterization of transition boiling regime. *Experimental Thermal and Fluid Science*, 118. DOI: 10.1016/j.expthermflusci.2020.110162
64. Arya K., Bhattacharyya R., Sarangi S. (2021). Small superimposed radial oscillations for a class of damaged limited elastic tubes. *Acta Mechanica*, 232(07), 2765-2780. DOI: 10.1007/s00707-021-02980-z
65. Islam M., Raj A., McFarland B., Brink H.M., Ciciliano J., Fay M., Myers D.R., Flowers C., Waller E.K., Lam W., Alexeev A., Sulchek T. (2020). Stiffness based enrichment of leukemia cells using microfluidics. *APL Bioengineering*, 4(03). DOI: 10.1063/1.5143436
66. Ali Anshari M.A., Imam M., Khan Yusufzai M.Z., Chinthapenta V., Mishra R. (2021). Stir zone anisotropic work hardening behavior in friction stir processed EN8 medium carbon steel. *Materials Science and Engineering A*, 805. DOI: 10.1016/j.msea.2020.140582
67. Gupta R.K., Mahato A., Bhattacharya A. (2020). Strength and failure behavior of carbon fiber reinforced aluminum laminates under flexural loading. *Mechanics of Advanced Materials and Structures*, 1-15. DOI: 10.1080/15376494.2020.1786754
68. Garg A., Raturi M., Bhattacharya A. (2020). Strength, failure and microstructure development for friction stir welded AA6061-T6 joints with different tool pin profiles. *CIRP Journal of Manufacturing Science and Technology*, 29, 99-114. DOI: 10.1016/j.cirpj.2020.03.001
- Maurya C.S., Sarkar C. (2021). Synthesis and characterization of novel flake-shaped carbonyl iron and water-based magnetorheological fluids using Iaponite and oleic acid with enhanced sedimentation stability. *Journal of Intelligent Material Systems and Structures*. DOI: 10.1177/1045389X20987001
69. Prajapati D.K., Tiwari M. (2021). The correlation between friction coefficient and areal topography parameters for AISI 304 steel sliding against AISI 52100 steel. *Friction*, 9(01), 41-60. DOI: 10.1007/s40544-019-0323-1
70. Das B., Kumar Paul S., Singh A., Singh Arora K., Shome M. (2020). The effect of thickness variation and pre-strain on the cornering fatigue life prediction of a DP600 steel wheel disc. *International Journal of Fatigue*, 139. DOI: 10.1016/j.ijfatigue.2020.105799
71. Raj A., Sarkar C., Pathak M. (2021). Thermal and multiphase flow simulations of polytetrafluoroethylene-based grease flow in restricted geometry. *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*. DOI: 10.1177/13506501211009406
72. Reddy D.S., Khan M.K., Awasthi K. (2020). Thermohydraulic performance of a novel curved serpentine coil. *Physics of Fluids*, 32(08). DOI: 10.1063/5.0007469
73. Pratap T., Patra K. (2020). Tribological performances of symmetrically micro-textured Ti-6Al-4V alloy for hip joint. *International Journal of Mechanical Sciences*, 182. DOI: 10.1016/j.ijmecsci.2020.105736
74. Kumar A., Gunjan M.R., Jakhar K., Thakur A., Raj R. (2020). Unified framework for mapping shape and stability of pendant drops including the effect of contact angle hysteresis. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 597. DOI: 10.1016/j.colsurfa.2020.124619
75. Kumar D., Sarangi S., Bhattacharyya R. (2020). Universal relations in nonlinear electro-magneto-elasticity. *Archive of Applied Mechanics*, 90(07), 1643-1657. DOI: 10.1007/s00419-020-01688-1
76. Kumar A., Patra K., Hossain M. (2021). Silicone composites cured under a high electric field: an electromechanical experimental study. *Polymer Composites*, 42(02), 914-930. DOI: 10.1002/pc.25875

Journal Publications (Other)

1. Sharma, N.K., Tiwari, M., Thakur, A., Ganguli, A.K. (2021). A systematic review of methodologies and techniques for integrating ergonomics into development and assessment of manually operated equipment. *International Journal of Occupational Safety and Ergonomics*. DOI: 10.1080/10803548.2020.1862552
2. Paul, S.K. (2021). Controlling factors of forming limit curve: A review. *Advances in Industrial and Manufacturing Engineering*, 2. DOI: 10.1016/j.aime.2021.100033

Conference Papers/Book Chapters

1. Sachi S., Zaitsev D.V., Raj R. (2020). Effect of ionic liquid additives on temperature and pressure fluctuations during water flow boiling in microchannels. *Journal of Physics: Conference Series*, 1677(01). DOI: 10.1088/1742-6596/1677/1/012093
2. Kumar R., Singh A., Tiwari M. (2020). Investigation of crack repair in orthotropic composite by piezoelectric patching. *Materials Today: Proceedings*, 21, 1303-1312. DOI: 10.1016/j.matpr.2020.01.167

3. Gujan, M. R., Kumar, A., and Raj, R. (2020). Constant Mean Curvature Based Framework for Modeling Droplet Evaporation on Lubricant-Infused Surfaces. *10th International Colloids Conference*, Mallorca, Spain.
4. Awasthi K., Reddy D.S., and Khan M.K. (2020). Design of fresnel lens with constant height spherical facets. *ASME 2020 14th International Conference on Energy Sustainability, ES 2020*. DOI: 10.1115/ES2020-1652
5. Kumar, N., and Bhattacharya, A. (2020). Dissimilar friction stir welding between AA2024-T3 and copper with threaded tool pin. *2nd International Conference on Materials Science and Manufacturing Technology 2020 (ICMSMT 2020)*. Coimbatore, Tamilnadu, India.
6. Hedau, G., Raj, R., and Saha, S.K. (2020). Effect of Outlet Plenum Volume During Flow Boiling Inside Plain Parallel Microchannel. *Proceedings of the 5th World Congress on Momentum, Heat and Mass Transfer (MHMT20)*, Lisbon, Portugal.
7. Gouda, R.K., Pathak, M., and Khan, M.K. (2020). Enhancement of Pool Boiling Heat Transfer Performance by an Eco-Friendly Surfactant. *5th World Congress on Momentum, Heat and Mass Transfer (MHMT20)*.
8. Chrit, F.E., Raj, A., Young, K., Stone, N. Shankles, P., Alexeev, A. and Sulchek, T. (2020). Experimental and numerical study of microfluidic label-free viability cell sorting. *73rd Annual Meeting of the APS Division of Fluid Dynamics*, Chicago.
9. Chaitanya, B., Gunjan, M. R., Thakur, A. D., and Raj, R. (2020). Fabrication of Robust and PFC Free Superhydrophobic Copper Surfaces. *10th International Colloids Conference*, Mallorca, Spain.
10. Singh, A., Dubey, A. and Pathak, M. (2020). Heat Transfer Characteristics of a Modified Closed-loop Two-phase Thermosyphon System. *8th International and 47th National Conference on Fluid Mechanics and Fluid Power (FMFP)*.
11. Imam, M. (2020). Hybrid Additive Manufacturing - Experimental and Numerical Study. *India-UK SPARC Webinar*, Indian Institute of Technology Patna.
12. Kumar, P. and Pathak, M. (2020). Influence of Capillary Number on Pressure Profile Evolution in Microfluidic T-Junction. *5th World Congress on Momentum, Heat and Mass Transfer (MHMT20)*.
13. Raturi, M. and Bhattacharya, A. (2020). Post corrosion tensile strength and failure of dissimilar friction stir welded aluminium alloys. *17th International Conference on Aluminium Alloys 2020 (ICAA17)*, Grenoble, France.
14. Kumar, A., Gunjan, M.R., and Raj, R (2020). Unified Tool for Mapping the Evolution of Sessile Drop Under the Influence of Gravity. *10th International Colloids Conference*, Mallorca, Spain.
15. Nishad, S., Halder, R., Banda, G., Ray, R., Bhattacharya, A., and Thakur, A., A Lizard-Inspired Quadruped Robot Based on Pressure Sensitive Adhesion Mechanism for Wall Climbing, Proceedings of the 5th International Conference on Advances in Robotics 2021, June 30-July 4, 2021. Kanpur, UP, India.
16. Darekar, A. Y., and Thakur, A., Trajectory planning in the presence of dynamic obstacles for Anguilliform-inspired robots, Proceedings of the 5th International Conference on Advances in Robotics 2021, June 30-July 4, 2021. Kanpur, UP, India.
17. Kumar, B., Bhatt, C., and Thakur, A., Deep Learning Based Real-Time Computation of Thrust for a Robotic Fish, Proceedings of the 5th International Conference on Advances in Robotics 2021, June 30-July 4, 2021. Kanpur, UP, India.
18. Pedapudi, B. R. B., Hait, S., and Thakur, A., Multi-Layer Perceptron-Based Classification of Recyclable Plastics from Waste Using Hyperspectral Imaging for Robotic Sorting, Proceedings of the 5th International Conference on Advances in Robotics 2021, June 30-July 4, 2021. Kanpur, UP, India.

Metallurgical and Materials Engineering

HEAD: DR. ANUP KUMAR KESHRI



DR. ANIRBAN CHOWDHURY

Associate professor

Materials Chemistry - chemical synthesis - structural and spectroscopic characterisations - thin films & coatings - nanomaterials- sol gel – ceramics



DR. ANUP KUMAR KESHRI

Assistant Professor

Plasma spraying, Mechanical and Tribological property of coatings, Graphene Coating, Tailoring Wettability, Thermal Barrier Coatings, Nitride Coatings, Corrosion Resistant Coatings, Wear Resistant Coatings



DR. AJAY KUMAR KALAYNI

Assistant professor

Electroceramic materials- find application in Actuators, Transducers, Optical, Memory and many energy conversion devices. Research includes: Structure- Property correlation of Dielectric, Ferroelectric, Piezoelectric, Relaxors, Multiferroic, Electrocaloric and other energy conversion Materials.



DR. DINESH KUMAR KOTNEES

Assistant professor

Polymer Science and Technology with specialization in Adhesion, Blends, Composites, Fillers and Bulk/Surface properties of Polymers



DR. DEVINDER YADAV

Assistant Professor

Flash sintering of ceramics, Thermomechanical processing, Electron microscopy, EBSD and texture, Friction stir processing, Structure-property correlation



DR. TAMOGHNA CHAKRABARTI

Assistant Professor

Processing, sintering, characterization and mechanical behavior of ceramics, Ultra High Temperature Ceramics (UHTCs), Computational modelling of sintering and related phenomena, Phase field modelling study of microstructural evolution in phase transformations

Sponsored Research Projects

1. Development and optimization of cost effective and scalable near net shape plasma sprayed membrane with graded porosity for microfiltration application (DST-IMPRINT, Rs.65.00 Lakhs) (PI : Dr. Anup K Keshri, Co-PI : Dr. Anirban Chowdhury)
2. High Temperature Materials for Thermal Protection Systems (DST-IMPRINT, Rs.44.48 Lakhs) (With IIT Kanpur) (Co-PI : Dr. Anup K Keshri)
3. Development of Optically Transparent & Translucent Zirconia Ceramic Products for Advanced Technological Applications (CRG-DST, Rs.62.24 Lakhs) (PI : Dr. Anirban Chowdhury)
4. Fire Retardant Materials: Investigation on Mechanistic & Thermo-physical props. & synthesis process (BRNS, Rs.31.93 Lakhs) (PI : Dr. Anirban Chowdhury)
5. Flash sintering of oxide ceramics: Effect of electrical parameters on densification mechanism,

- microstructure and mechanical properties (SERB, Rs.32.00 Lakhs) (PI : Dr. Devinder Yadav)
6. Graphene Based Membrane for Water Desalination with Improved Properties (CRG-SERB, Rs.33.11 Lakhs) (PI : Dr. Anup Kumar Keshri)
 7. Optimization of corrosion and wear properties in plasma sprayed Fe-based metallic glass protective coating (With IIT Kharagpur) (CRG-SERB, Rs.46.31 Lakhs) (Co-PI : Dr. Anup Kumar Keshri)
 8. Plasma sprayed CNT reinforced Graphene Coated electrode for the Supercapacitor Applications Towards Industrialization (DST (International Division), Rs.28.20 Lakhs) (PI : Dr. Anup Kumar Keshri)
 9. Plasma Sprayed Nano-diamond reinforced NiCrBSi Nanocomposite Coatings: Substitute to Electroplated Hard Chromium (BRNS, Rs.29.51 Lakhs) (PI : Dr. Anup Kumar Keshri)
 10. Study of novel carbonaceous nanofillers like carbon dots on polyurethane elastomers (Manali Petrochemicals Ltd., Chennai, Tamil Nadu, India, Rs.20.00 Lakhs) (PI : Dr. Dinesh Kumar Kotnees)
 11. Study on the densification and fracture properties of piezoelectric ceramics produced by novel flash sintering technique (DST-INSPIRE, Rs.35.00 Lakhs) (PI : Dr. Tamoghna Chakrabarti)
 12. Cold Sintering (Carborundum Universal Limited (CUMI), Tamil Nadu, India)(PI: Dr. Dinesh Kumar Kotnees and Dr. Tamoghna Chakrabarti)

Consultancy Projects

1. Factors influencing the tack behaviour of rubbers used in tyres (MRF Tyres, Chennai, Tamilnadu, India, Rs.23.00 Lakhs) Consultant Name: Dr. Dinesh Kumar Kotnees
2. To synthesize the Fe-based robust superhydrophobic coating by one-step and scalable technique (Tata Steel Limited, Rs.12.50 Lakhs) Consultant Name: Dr. Anup Kumar Keshri

Patents (filed / granted)

1. Patent Name: A Method For Depositing Hydrophobic Metallic Coating On A Substrate; Patent Owner: Dr. Anup Kumar Keshri (Application No.:202131014777 and Status: Submitted)
2. Patent Name: A method for exfoliation of graphite under low shear; Patent Owner: Dr. Dinesh Kumar Kotnees (Application No.: 202031006319 and Status: Submitted)
3. Patent Name: Chloroprene rubber having excellent cold resistance; Patent Owner: Dr. Dinesh Kumar Kotnees (File No.:WO 2020/226135 A1 and Status:Granted)
4. Patent Name: Unmodified Fullers Earth Reinforced Cured Elastomeric Composite And Method Thereof; Patent Owner: Dr. Dinesh Kumar Kotnees (Application No.:WO/2020/202178 and Status: Granted)

Invited Lectures by Faculty Members

1. Analyzing Materials' Surfaces: Issues and Case Studies **by** Anirban Chowdhury (SCTA 2020, at NIT Surathkal)
2. Materials Science in Nanotechnology **by** Anirban Chowdhury (Centre for Nanoscience & Nanotechnology at Aryabhata Knowledge University, Patna,) (2021)
3. Tuning the Wettability of Metallic Coating **by** Anup Kumar Keshri (key Note Lecture in DHATVIKA'2021, BIT Sindri)
4. Characterization of Tribological Properties of Coatings **by** Anup Kumar Keshri (QIP course on Materials Characterization Techniques, IIT Indore) (2021)
5. Advances in Plasma Spraying: Beyond Traditional Coating **by** Anup Kumar Keshri (Vaishwik Bharatiya Vaigyanik Summit in panel discussions) (2020)
6. Advancement in Plasma Spraying for Fabricating the Pristine Graphene Coating **by** Anup Kumar Keshri (Short Term Course by TEQIP III, MNIT Jaipur) (2020)
7. Wetting Phenomena in Plasma Sprayed Rare Earth Oxide Coating **by** Anup Kumar Keshri (SICE 2020, IIT Bombay)
8. Advancement in Plasma Spray Coatings Discussion Meeting on Thermal Spray Coating **by** Anup Kumar Keshri (IIT Bombay) (2020)
9. Flash Sintering: A Novel Way to Sinter Ceramics **by** Devinder Yadav (NIT Patna) (2020)
10. Aspects of Scanning Electron Microscopy **by** Devinder Yadav (MNIT Bhopal) (2020)

11. Friction Stir Processing: A Tool to Homogenize In-Situ Composites **by** Devinder Yadav (IIT Patna) (2020)
12. Sustainability of Material and Technologies **by** Devinder Yadav (Reva University, Bangalore) (2020)
13. Rietveld Refinement Method **by** Dr Ajay Kalyani (IIT Indore) (2021)
14. Pushing the Limits of Thermal Analyses Tools: Issues, Concerns and Possible Solutions **by** Anirban Chowdhury (THERMANS- 2020, 22nd DAE – BRNS Workshop & Symposium on Thermal Analysis at BARC, Mumbai)
15. Insights into the Remarkable Ionic Conductivity Obtained for a Textured La₂Ce₂O₇ Ceramic via Pressureless Sintering **by** Anirban Chowdhury (International Conference on Functional Materials 2020, IIT Kharagpur)

Book Published

1. Dinesh Kumar Kotne and Anil K. Bhowmick (2021). Rubber to rubber adhesion. Wiley-Scrivener Publishing, USA, 448p. ISBN: 9781119768890

Journal Publications (Scopus – Indexed)

1. Swarnima Singh, Swati Sharma, Anup Kumar Keshri, Tribological Behaviour of Plasma-Sprayed Graphene Nanoplatelets Reinforced Hydroxyapatite Nanocomposite Coating, **Transactions of the Indian Institute of Metals** (2021), DOI:org/10.1007/s12666-021-02367-7
2. Krishna Kant Pandey, Dipak Kumar Shukla, Rahul Verma, Anup Kumar Keshri, Mechanical Property and Adhesion Strength of Carbon Nanofillers Reinforced Alumina Single Splats using In-situ Picoindentation and Nanoscratch Test, **Ceramics International** (2021), DOI:10.1016/j.ceramint. 2021.06.088
3. Dipak Kumar Shukla, Biswajyoti Mukherjee, Aminul Islam, Anup Kumar Keshri, Peculiar high temperature tribological behaviour of plasma sprayed graphene nanoplatelets reinforced cerium oxide coatings, **Ceramics International** (2021), DOI:10.1016/j.ceramint.2021.03.096
4. Sumit Choudhary, Aminul Islam, Biswajyoti Mukherjee, Anup Kumar Keshri, Plasma sprayed Lanthanum zirconate coating over additively manufactured carbon nanotube reinforced Ni-based Composite: Unique performance of thermal barrier coating system without bondcoat, **Applied Surface Science** (2021), DOI:10.1016/j.apsusc.2021.149397
5. Aminul Islam, Biswajyoti Mukherjee, Krishna Kant Pandey, Anup Kumar Keshri, Ultra-Fast, Chemical-Free, Mass Production of High Quality Exfoliated Graphene, **ACS Nano** (2021), DOI: 10.1021/acsnano.0c09451
6. Shreshtha Ranjan, Biswajyoti Mukherjee, Aminul Islam, Krishna Kant Pandey, Rohit Gupta, Anup Kumar Keshri, The Microstructure, mechanical and high temperature tribological behaviour of graphene nanoplatelets reinforced plasma sprayed titanium nitride coating, **Journal of the European Ceramic Society** (2020), DOI: 10.1016/j.jeurceramsoc.2019.10.043
7. Singh S., Pandey K.K., Islam A., Keshri A.K. (2020). Corrosion behaviour of plasma sprayed graphene nanoplatelets reinforced hydroxyapatite composite coatings in simulated body fluid. **Ceramics International**, 46(09), 13539-13548. DOI: 10.1016/j.ceramint.2020.02.139
8. Singh S., Pandey K.K., Keshri A.K. (2020). Effect of Plasma Power on Corrosion Behaviour of Plasma Sprayed Hydroxyapatite Coatings. **Metals and Materials International**. DOI: 10.1007/s12540-020-00704-x
9. Singh S., Pandey K.K., Bose S.K., Keshri A.K. (2020). Role of surface nanocrystallization on corrosion properties of low carbon steel during surface mechanical attrition treatment. **Surface and Coatings Technology**, 396. DOI: 10.1016/j.surfcoat.2020.125964
10. Kumar L., Arun A., Chowdhury A. (2021). Can a shape factor in bulk ceramics mitigate unwanted phase transformations? **Scripta Materialia**, 190, 52-56. DOI: 10.1016/j.scriptamat.2020.08.039
11. Sreenath P.R., Mandal S., Panigrahi H., Das P., Dinesh Kumar K. (2020). Carbon dots: Fluorescence active, covalently conjugated and strong reinforcing nanofiller for polymer latex. **Nano-Structures and Nano-Objects**, 23. DOI: 10.1016/j.nanoso.2020.100477
12. Kalyani A.K. (2021). Enhanced piezoelectric response in ferroelectric solid solution with rhombohedral end members. **Materials Today Communications**, 27. DOI: 10.1016/j.mtcomm.2021.102274
13. Rani S., Kumar K.D., Mandal S., Kumar R. (2020). Functionalized carbon dot nanoparticles reinforced soy protein isolate biopolymeric film. **Journal of Polymer Research**, 27(10). DOI: 10.1007/s10965-020-02276-1
14. Kumar R., Pathak A., Singh P., Kumar K.D. (2021). In-situ Production and Collection of Bacterial Cellulose on Jute and Flax Mats by Static Cultivation. **Journal of Natural Fibers**. DOI: 10.1080/15440478.2020.1870638

15. Pandey K.K., Singh R.K., Rahman O.A., Choudhary S., Verma R., Keshri A.K. (2020). Insulator-conductor transition in carbon nanotube and graphene nanoplatelets reinforced plasma sprayed alumina single splat: Experimental evidence by conductive atomic force microscopy. *Ceramics International*, 46(15), 24557-24563. DOI: 10.1016/j.ceramint.2020.06.243
16. Rahman O.S.A., Mukherjee B., Priyadershini S., Gunjan M.R., Raj R., Aruna S.T., Keshri A.K. (2020). Investigating the wetting phenomena and fabrication of sticky, para-hydrophobic cerium oxide coating. *Journal of the European Ceramic Society*, 40(15), 5749-5757. DOI: 10.1016/j.jeurceramsoc.2020.06.028
17. Singh S., Pandey K.K., Asiq Rahman O.S., Haldar S., Lahiri D., Keshri A.K. (2020). Investigation of crystallinity, mechanical properties, fracture toughness and cell proliferation in plasma sprayed graphene nanoplatelets reinforced hydroxyapatite coating. *Materials Research Express*, 7(01). DOI: 10.1088/2053-1591/ab6c23
18. Pandey K.K., Singh S., Choudhary S., Zhang C., Agarwal A., Li L.H., Chen Y., Keshri A.K. (2021). Microstructural and mechanical properties of plasma sprayed boron nitride nanotubes reinforced alumina coating. *Ceramics International*, 47(07), 9194-9202. DOI: 10.1016/j.ceramint.2020.12.045
19. Shukla D.K., Mukherjee B., Islam A., Keshri A.K. (2021). Peculiar high temperature tribological behaviour of plasma sprayed graphene nanoplatelets reinforced cerium oxide coatings. *Ceramics International*, 47(12), 17809-17812. DOI: 10.1016/j.ceramint.2021.03.096
20. Mishra S., Kumar K., Patra A., Chowdhury A., Roy A. (2020). Phase integrity of zinc oxide doped zirconia under low compacting pressure. *Journal of Alloys and Compounds*, 843. DOI: 10.1016/j.jallcom.2020.155927
21. Choudhary S., Islam A., Mukherjee B., Richter J., Arold T., Niendorf T., Kumar Keshri A. (2021). Plasma sprayed Lanthanum zirconate coating over additively manufactured carbon nanotube reinforced Ni-based Composite: Unique performance of thermal barrier coating system without bondcoat. *Applied Surface Science*, 550. DOI: 10.1016/j.apsusc.2021.149397
22. Rani S., Singh A.K., Paswan R.R., Kumar K.D., Kumar R. (2020). Preparation, Characterization and Antibacterial Evaluation of Soy Protein Isolate Biopolymeric Films Loaded with Nalidixic Acid. *Journal of Polymers and the Environment*, 28(07), 1841-1850. DOI: 10.1007/s10924-020-01729-4
23. Kar A., Yadav D., Suwas S., Kailas S.V. (2020). Role of plastic deformation mechanisms during the microstructural evolution and intermetallics formation in dissimilar friction stir weld. *Materials Characterization*, 164. DOI: 10.1016/j.matchar.2020.110371
24. Kumar K., Srivastava S., Chowdhury A. (2020). Role of various alcohol washing media in obtaining a remarkable texture for La₂Ce₂O₇ powders and ceramics. *Journal of the American Ceramic Society*, 103(03), 1563-1574. DOI: 10.1111/jace.16880
25. Kumari K., Kumar A., Kotne D.K., Balakrishnan J., Thakur A.D., Ray S.J. (2020). Structural and resistive switching behaviour in lanthanum strontium manganite - Reduced graphene oxide nanocomposite system. *Journal of Alloys and Compounds*, 815. DOI: 10.1016/j.jallcom.2019.152213
26. Arun A., Kumar L., Chowdhury A. (2021). Structure-property relations for a phase-pure, nanograined tetragonal zirconia ceramic stabilized with minimum CaO doping. *Journal of the American Ceramic Society*, 104(07), 3497-3507. DOI: 10.1111/jace.17683
27. Uthayakumar A., Pandiyan A., Mathiyalagan S., Keshri A.K., Moorthy S.B.K. (2020). The effect of space charge on blocking grain boundary resistance in an yttrium-doped barium zirconate electrolyte for solid oxide fuel cells. *Journal of Physical Chemistry C*, 124(10), 5591-5599. DOI: 10.1021/acs.jpcc.0c00166
28. Islam A., Mukherjee B., Pandey K.K., Keshri A.K. (2021). Ultra-Fast, Chemical-Free, Mass Production of High Quality Exfoliated Graphene. *ACS Nano*, 15(01), 1775-1784. DOI: 10.1021/acsnano.0c09451
29. Panigrahi H., Sreenath P.R., Kotne D.K. (2020). Unique Compatibilized Thermoplastic Elastomer with High Strength and Remarkable Ductility: Effect of Multiple Point Interactions within a Rubber-Plastic Blend. *ACS Omega*, 5(22), 12789-12808. DOI: 10.1021/acsomega.0c00423
30. Kumar K., Chowdhury A. (2021). Reviewing the cases of Nanoscale Heterogeneity in Ceramics: Boon or Bane? *Materialia*, 16. DOI: 10.1016/j.mtla.2021.101109
31. Kalsar, R., Yadav, D., Sharma, A., Brokmeier, H.G., May, J., Höppel, H.W., Skrotzki, W., Suwas, S. (2020). Effect of Mg content on microstructure, texture and strength of severely equal channel angular pressed aluminium-magnesium alloys. *Materials Science and Engineering: A*, 797. DOI: 10.1016/j.msea.2020.140088
32. R. Damodaram, Pranav Rai, S.C.J. Daniel, R. Bauri, Devinder Yadav, Friction surfacing: A tool for surface crack repair. *Surface and Coatings Technology*, Jul 2021, 127482. doi.org/10.1016/j.surfcoat.2021.127482

Conference Papers/Book Chapters

1. Kumar, Kundan and Chowdhury, Anirban (2021). Nano scale Heterogeneity in Amorphous and Semi-crystalline Materials: A Technical Perspective. *Encyclopedia of Materials: Plastics and Polymers*, Elsevier. <https://doi.org/10.1016/B978-0-12-820352-1.00107-3>
2. Kumar, Kundan and Chowdhury, Anirban (2020). Use of Novel Nano structured Photocatalysts for the Environmental Sustainability of Wastewater Treatments. *Reference Module in Materials Science and Materials Engineering*. Elsevier, [Encyclopedia of Renewable and Sustainable Materials, Volume 1], 949-964.
3. Kumar, Kundan and Chowdhury, Anirban (2020). Pushing the Limits of Analytical Characterization Tools: How Much is too much? *Handbook on Miniaturization in Analytical Chemistry: Application of Nanotechnology*, Chapter 11, 239-275, Elsevier. ISBN: 978-0-12-819763-9
4. Sravan Bokka and Anirban Chowdhury (2021). Evolving Trends of Nanotechnology for Medical and Biomedical Applications: A Review. *Reference Module in Materials Science and Materials Engineering*, Elsevier. <https://doi.org/10.1016/B978-0-12-820352-1.00098-5>

Physics

HEAD: DR. VENKATA RAMANAIAH DANTHAM



DR. AJAY D. THAKUR

Associate professor

Condensed Matter Physics, advanced electronic materials for energy harvesting and sensing applications



DR. ALPANA NAYAK

Assistant Professor

Condensed matter physics (experimental), Nanoionic devices; atomic switches, Scanning probe microscopy, Organic thin films



DR. ARGHYA CHOUDHURY

Assistant professor

Particle Physics, Collider Physics, Physics beyond the Standard Model, Supersymmetry, Higgs Physics, Dark Matter.



DR. AWALENDRA K. THAKUR

Associate Professor

Renewable Energy Resources, Composite Nano Structures, Solid State Ionics, Dielectrics and Ferroelectrics, Super Capacitors, E.M.I. Shielding.



DR. AYASH KANTO MUKHERJEE

Assistant Professor

Transport in conjugated polymers, Organic electronic devices, Molecular electronics



DR. JOBIN JOSE

Assistant Professor

Computational atomic and molecular physics



DR. MANAS KUMAR SARANGI

Assistant Professor

Biophysics and Ultrafast Spectroscopy



DR. MANORANJAN KAR

Associate professor

Magnetic materials, Nanostructured ferrites, Multiferroic Materials, Composites



DR. NAVEEN KUMAR NISHCHAL

Associate Professor

Applied Optics (Optical Information Processing, Image Encryption, Watermarking, Digital Holography, Fractional Fourier Transform-based Signal Processing, Correlation-based Optical Pattern Recognition)



DR. NEHA KIRITKUMAR SHAH

Assistant Professor

Experimental High Energy Physic, Heavy-ion Collisions: Understanding strong interactions using two-particle correlation functions, Understanding QCD phase diagram with strangeness production, Hypernuclei and antimatter production, Exotics: Dibaryons, pentaquarks and Hadron spectroscopy



DR. PRASHANT KUMAR

Ramanujan Faculty

Laser-based photo-chemical and photo-physical transformations, Graphene and its analogues, CNTs and Nanodiamond, Hybrid nanomaterials, Nanoplasmonics, Trace level molecular detection, Straintronics



DR. PRAKASH PARIDA

Assistant Professor

Condensed Matter Theory, Quantum Transport, Two-Dimensional Layered Materials, Topological Insulators, Charge-Spin-Heat Transport, Strong Correlated Electronic Systems, Light-Matter Interaction



DR. RAGHAVAN K EASWARAN

Assistant Professor

Quantum Optics (Experiment and Theory)



DR. SOUMYA JYOTI RAY

Assistant Professor

Two-dimensional Layered Materials, Nanoelectronics, Spintronics, Superconductivity, Magnetism



DR. UTPAL ROY

Associate Professor

Bose-Einstein condensate, Nonlinear Optics, Quantum Optics, Quantum Physics



DR. VENKATA R. DANTHAM

Associate Professor

Bio-Photonics, Nanophotonics, Ultrasensitive optical biosensors, Photonic atoms

Fellow - Professional Bodies

1. Naveen Kumar Nishchal (2005) Optical Society of India

Member - Professional Bodies

1. A K Thakur (2016) Vice President of Asian Solid State Ionics Society
2. A K Thakur (2017) Indian Solid State Ionics Society
3. Ajay D. Thakur (life membership) Magnetics Society of India
4. Ajay D. Thakur (2021) American Physical Society
5. Ajay D. Thakur (life membership) Indian Physics Association
6. Jobin Jose (2009) Indian Society of Atomic and Molecular Physics
7. Jobin Jose (2020) Center for Atomic, Molecular and Optical Sciences & Technologies (CAMOST)
8. Manas Kumar Sarangi (life membership) Indian Society for Radiation and Photochemical Sciences
9. Manas Kumar Sarangi (life membership) Indian Biophysical Society
10. Naveen Kumar Nishchal (2003) Lasers And Spectroscopy Society of India
11. Naveen Kumar Nishchal (2015) OSA - The Optical Society
12. Naveen Kumar Nishchal (2015) SPIE, USA
13. Naveen Kumar Nishchal (2011) Indian Science Congress Association
14. Soumya Jyoti Ray (2020) Institute of Electrical and Electronic Engineers (IEEE)
15. Soumya Jyoti Ray (2020) Institute of Scholars
16. Soumya Jyoti Ray (2020) London Journals Press, UK
17. Soumya Jyoti Ray (2020) Institute of Physics, UK
18. Soumya Jyoti Ray (2020) Neutron Scattering Society of India
19. Soumya Jyoti Ray (2020) Magnetic Society of India
20. Utpal Roy (2006) Indian Society of Atomic and Molecular Physics
21. Utpal Roy (2020) Indian Society of Optics, Atomic & Molecular Physics
22. Manoranjan Kar (2002) Magnetic Society of India
23. Manoranjan Kar (2016) Indian Crystallographic Association
24. Manoranjan Kar (2014) Materials Research Society of India
25. Manoranjan Kar (2020) Indian Association of Physics Teacher

Member - Editorial Board

1. Naveen Kumar Nishchal (2020) *Associate Editor* - Optical Engineering
2. Naveen Kumar Nishchal (2019) *Associate Editor* - Asian Journal of Physics
3. Soumya Jyoti Ray (2021) *Section Editor* - Current Material Science
4. Soumya Jyoti Ray (2021) *Editorial Board Member* - Current Chinese Science
5. Soumya Jyoti Ray (2021) *Editorial Board Member* - Current Graphene Science
6. Soumya Jyoti Ray (2021) *Editor*- Special Issue on "Novel 2D Energy Materials and Devices", MDPI [IF: 3.004]
7. Utpal Roy (2020) *Member* - World Research Journal of Applied Physics
8. Utpal Roy (2020) *Member* - International Journal of Recent Developments in Sciences

Awards & Honours

1. A. K. Thakur (2021) Member of the National Committee on Advanced Energy Research Centre
2. A. K. Thakur (2021) Member of the National Committee on RCI Technology Roadmap
3. Naveen Kumar Nishchal (2020) *Best Teacher (Under Graduate), Spring Semester*
4. Raghavan K E (2020) *Best Teacher Award for teaching first year B.Tech Physics 1 course*
5. Naveen Kumar Nishchal (2020) *Name appeared in World's Top 2% Scientists List in Optics by Stanford University, USA*
6. Soumya Jyoti Ray (2020) *Outstanding Researcher Award in Nanotechnology and Condensed Matter Physics*
7. Soumya Jyoti Ray (2020) *Research Excellence Award*
8. Dr. Venkata Ramanaiah Dantham (2020) *Selected as Best PG Teacher in the Department of Physics on Teachers' Day 2020 based on the teaching feedback score given by the students*
9. Jobin Jose (2020) *Selected as the Best PG Teacher in the Spring Semester 2020 in the Department of Physics.*
10. Manoranjan Kar(2018) *Best Teacher Award, IAPT*
11. Manoranjan Kar(2011) *DAE Young Scientist Award*

Fellowships

1. Soumya Jyoti Ray, *Reviewer - DST-INSPIRE*
2. Soumya Jyoti Ray, *Expert Reviewer - Gandhian Young Technology Innovation Award*

Sponsored Research Projects

1. Crystal structure and magnetic properties of nanorods (DST under FIST program, Government of India, Rs.290.00 Lakhs) (PI : Dr. Alpana Nayak, Dr. Manoranjan Kar, Dr. Ajay D. Thakur, Dr. S. J. Ray)
2. Design and Implementation of Orbital Angular Momentum (OAM) Assisted Spectrally Efficient Wavelength Division Multiplexed Communication System Using C (IMPRINT-II, Rs.73.00 Lakhs) (PI : Dr. Sumanta Gupta and Co-PI: Dr. Venkata Ramanaiah Dantham)
3. Development of an agricultural waste based off-the-grid climate control unit for storage and processing of agricultural produce (IMPRINT-II SERB, Rs.98.36 Lakhs) (PI : Dr. Rishi Raj and Co-PI: Dr. Ajay D. Thakur)
4. Development of Indigenous Technology for High Energy Density LiPo Battery for Low Temperature Applications (RCI (DRDO), Hyderabad, Rs.599.84 Lakhs) (PI : Dr. A. K. Thakur)
5. Electromagnetically Induced Transparency and Slow Light in a Two dimensional Magneto Optical Trap (2D MOT) (SERB (Project completed in 2020), Rs.21.20 Lakhs) (PI : Dr. Raghavan K Easwaran)
6. Enhancement of Raman scattering signal of single molecules using photonic nanojet mediated surface enhanced Raman scattering (SERS) technique (CSIR, Rs.22.00 Lakhs) (PI : Dr. Venkata Ramanaiah Dantham)
7. Generation, Imaging and Control of Novel Coherent Electronic States in Artificial Ferromagnetic-Superconducting Hybrid Structures and Devices (DST, Rs.50.00 Lakhs) (PI : Dr. S. J. Ray)
8. Investigations on Thin Films of Discotic Liquid Crystal Molecules for Applications in Organic Electronics (SERB DST, Rs.40.70 Lakhs) (PI : Dr. Alpana Nayak)

9. Novel Spin-triplet superconductivity using Ferromagnetic-Superconducting heterostructures (UGC-DAE) (PI : Dr. S. J. Ray)
10. Plasma Sprayed CNT Reinforced Graphene Coated Electrode for the Super Capacitor Applications: Towards industrialization. (DST, Rs.28.20 Lakhs) (PI : Dr. Anup Kumar Keshri and Co-PI : Dr. Raghavan K Easwaran)
11. Polarised Neutron Reflectivity measurements of thin film heterostructures for Spin-triplet superconducting state generation. (UGC-DAE) (PI : Dr. S. J. Ray)
12. Psychrometry Driven Design and Fabrication of An All Season Optima Atmospheric Water Harvester (DST(TMD), Rs.32.40 Lakhs) (PI : Dr. Rishi Raj and Co-PI: Dr. Ajay D. Thakur)
13. Respect Bihar (Revitalization of Physics education through concept oriented teaching in Bihar (Bihar Education Project Council, Rs.269.00 Lakhs) (PI : Dr Manoranjan Kar)
14. Setting up of an advanced multimode scanning probe microscopy facility for device applications. (DST FIST program, Rs.269.00 Lakhs) [PI : Alpana Nayak (project coordinator)]
15. Superconducting Spintronics using hybrid Superconducting-Ferromagnetic Metamaterials (DST, Rs.35.00 Lakhs) (PI : Dr. S. J. Ray)
16. Technology Development for High Energy Density Rechargeable Lithium Battery Materials for Device Applications (DST, New Delhi, Rs.384.00 Lakhs) (PI : Dr. A. K. Thakur)
17. Two-dimensional nanomaterial based hybrid structures for switching and memory applications (DST, Rs.50.00 Lakhs) (PI : Dr. S. J. Ray)
18. Valleytronics in Gapped Dirac Material (DST-SERB, Rs.38.00 Lakhs) (PI : Dr. Prakash Parida)

Patents (filed / granted)

1. Patent Name: A Composition and a Process for Preparing Tin (IV) Sulphide Hexagonal Nanosheet Anode; Patent Owner: Dr. A. K. Thakur (Application No.:_202011007366__ and Status: Filed on 20.02.2020)
2. Patent Name: A Process for Heteroatom Doping in Graphene and a Heteroatom Doped Graphene Material ; Patent Owner: Dr. A. K. Thakur (Application No.:_202131011566__ and Status:_ Filed on 18.03.2021_)
3. Patent Name: Protection Circuit for Battery Pack ; Patent Owner: Dr. A. K. Thakur (Application No.:_202111008804__ and Status:_ Filed on 02.03.2021__)
4. Patent Name: System and Method for Heat Recovery in Gasification Process; Patent Owner: Dr. Ajay D. Thakur (Application No.:_E-1/12145/2018-KOL__ and Status: __Hearing complete__)
5. Patent Name: A method for the synthesis of pure phase multiferroic bismuth ferrite, BiFeO₃ (BFO) ceramics; Patent Owner: Dr. Manoranjan Kar (Application No.: 201631037965 and Status: Not Published)
6. Patent Name: Multiple Materials Coating On Flat Surfaces In Enclosed Environment, Patent Owner: Dr. Manoranjan Kar (Application No.: 201931018390 and Status: Published)

Invited Lectures by Faculty Members

1. Light as a Tool for Development **by** Naveen Kumar Nishchal (2020)
2. Photonics in the Digital Era UV Light Killer of Corona Virus **by** Naveen Kumar Nishchal (2020)
3. Photonics for Society **by** Naveen Kumar Nishchal (2020)
4. Magnetic Interaction in Composite **by** Manoranjan Kar (MGCU) (2020)
5. Magnetic Composite **by** Manoranjan Kar (NIT Nagaland) (2020)
6. Magnetic Composite for Memory Device Application **by** Manoranjan Kar (NIT Tripura) (2020)
7. Composite for Solar Cell Application **by** Manoranjan Kar (Purnima Institute of Technology) (2020)
8. Role of Soft Magnetic Phase in Magnetic Composite **by** Manoranjan Kar (CV Raman) (2020)
9. Polymer Composites **by** Manoranjan Kar (Centurian University) (2020)
10. Magnetic Interaction in the Composite **by** Manoranjan Kar (MIT Mysore) (2020)
11. Role of Filler in Polymer **by** Manoranjan Kar (Sambalpur University) (2021)
12. Probing Free and Confined Atoms : A Computational Approach **by** Jobin Jose (ISAMP YSA presentation) (2021)
13. Emergence of Quantum Nature: A Numerical Perspective **by** Jobin Jose (Justice Basheer Ahmed Sayeed College for Women, Teynampet, Chennai - 18) (2021)
14. Study of Correlation Effects in Ground and Excited States of A@C₆₀: Analysis Employing Shannon Entropy **by** Jobin Jose (AAMOS 2020)

15. Panel Discussion, IEEE-IPA Event on International Day of Women and Girls in Science **by** Neha Shah (2020)
16. "Women in Science" under the Vigyan Joyti Program: Initiative of Gol **by** Neha Shah (2020)
17. Graphene Oxide: Prospects and Challenges **by** Ajay D. Thakur (St Johns College, Agra) (2020)
18. Sustainability: A Value Proposition **by** Ajay D. Thakur (Induction Program IIT Patna) (2020)
19. Advancements in Bolometry: From Superconducting Transition Edge Sensors to Thermoelectric Membranes **by** Ajay D. Thakur (Tripura University) (2020)
20. Insights from Similarities in Physical Phenomenon – Intuition and beyond **by** Ajay D. Thakur (Jawahar Navodaya Vidyalaya) (2020)
21. Strange world of fluids: Archimedes and Beyond **by** Ajay D. Thakur (Jawahar Navodaya Vidyalaya) (2020)
22. Tunable Magnetism in 2D materials by Soumya Jyoti Ray (2021)
23. Single Electronic Devices and Aspects in Sensing **by** Soumya Jyoti Ray (2021)
24. Light-Mater Interaction in 2-D materials **by** Dr. Prakash Parida (CIPET Bhubaneswar) (2021)
25. Electronics in Flatland **by** Dr. Prakash Parida (STAM, NIT Arunachal Pradesh) (2021)
26. Ultracold Atoms in Disordered Optical Super-Lattices **by** Utpal Roy (Young Investigator Meet on Quantum Condensed Matter Theory", NISER Bhubaneswar) (2020)
27. Entangled States with Ultracold Atoms **by** Utpal Roy (International Teleconference on Einstein's Determinism (EPR)) (2021)
28. Quantum Precision Measurements in Trapped Ultracold Atoms **by** Utpal Roy (International Conference on Complex Quantum Systems (ICQ5-2020), BARC, Mumbai)
29. Negative Temperature in Bi-chromatic Optical Lattice **by** Utpal Roy (2nd International Conference on Laser Technology 2020, London, UK)
30. Special Invited Webinar on Quantum Simulation and Quantum Sensors of matter Waves **by** Utpal Roy (PSG College of Arts and Science, Coimbatore) (2020).

Journal Publications (Scopus – Indexed)

1. Sivaprakash P., Esakki Muthu S., Singh A.K., Dubey K.K., Kannan M., Muthukumaran S., Guha S., Kar M., Singh S., Arumugam S. (2020). Effect of chemical and external hydrostatic pressure on magnetic and magnetocaloric properties of Pt doped Ni₂MnGa shape memory Heusler alloys. *Journal of Magnetism and Magnetic Materials*, 514, 167136. DOI: 10.1016/j.jmmm.2020.167136
2. Rani S., Ray S.J. (2020). Two-dimensional C₃N based sub-10 nanometer biosensor. *Physical Chemistry Chemical Physics*, 22 (10), 11452-11459. DOI: 10.1039/d0cp00546k
3. Kumar P., Fatima A., Nishchal N.K. (2021). Arbitrary Vector Beam Encoding Using Single Modulation for Information Security Applications. *IEEE Photonics Technology Letters*. 33(05), 243-246. DOI: 10.1109/LPT.2021.3052571
4. Nair A.K., Rani S., Kamalakar M.V., Ray S.J. (2020). Bi-stimuli assisted engineering and control of magnetic phase in monolayer CrOCl. *Physical Chemistry Chemical Physics*. 22(22), 12806-12813. DOI: 10.1039/d0cp01204a
5. Kumari K., Kumar A., Thakur A.D., Ray S.J. (2021). Charge transport and resistive switching in a 2D hybrid interface. *Materials Research Bulletin*. 139, 111195. DOI: 10.1016/j.materresbull.2020.111195
6. Kumar A., Sivaprahasam D., Thakur A.D. (2021). Colossal seebeck coefficient in Aurivillius phase-perovskite oxide composite. *Journal of Alloys and Compounds*. 853, 157001. DOI: 10.1016/j.jallcom.2020.157001
7. Ghosh M.P., Datta S., Sharma R., Tanbir K., Kar M., Mukherjee S. (2021). Copper doped nickel ferrite nanoparticles: Jahn-Teller distortion and its effect on microstructural, magnetic and electronic properties. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, 263, 1148864 DOI: 10.1016/j.mseb.2020.114864
8. Datta S., Guha S., Panda S.K., Kar M. (2020). Correlation between Critical Behavior and Magnetocaloric Effect near Paramagnetic to Ferromagnetic Phase Transition of Co₂TiAl_{0.75}Si_{0.25} Heusler Alloy. *Physica Status Solidi (B) Basic Research*, 257(12), 2000123. DOI: 10.1002/pssb.202000123
9. Manglam M.K., Mallick J., Kumari S., Pandey R., Kar M. (2021). Crystal structure and magnetic properties study on barium hexaferrite (BHF) and cobalt zinc ferrite (CZF) in composites. *Solid State Sciences*, 113, 106529. DOI: 10.1016/j.solidstatesciences.2020.106529.
10. Manglam M.K., Kumari S., Mallick J., Kar M. (202). Crystal structure and magnetic properties study on barium hexaferrite of different average crystallite size. *Applied Physics A: Materials Science and Processing*, 127(02), 1-12. DOI: 10.1007/s00339-020-04232-8

11. Kour P., Pradhan S.K., Pandey R., Singh R.K., Kumar P., Kar M. (2020). Effect of Fe Concentration on Ferroelectric and Magnetic Properties of Lead Iron Niobate. *Journal of Electronic Materials*, 49(09), 5631-5637. DOI: 10.1007/s11664-020-08238-z
12. Priya S., Dantham V.R. (2020). Effect of Size-Dependent Damping on Plasmon-Hybridized Modes of Asymmetric Nanosphere Dimers: The Role of Nanogap, Size Ratio, Surrounding Medium, and Substrate. *Plasmonics*, 15(06), 2033-2042. DOI: 10.1007/s11468-020-01216-5
13. Dubey K.A., Srikanth K., Rajagopala Rao T., Jose J. (2020). Effects of anisotropy on the resonant scattering of hydrogen atom from the fullerene C60. *Journal of Physics Communications*, 4(07), 1-17. DOI: 10.1088/2399-6528/ABA476
14. Nair A.K., Ray S.J. (2020). Electronic phase-crossover and room temperature ferromagnetism in a two-dimensional (2D) spin lattice. *RSC Advances*, 11(02), 946-952. DOI: 10.1039/d0ra09726h
15. Barman R.K., Bhattacharjee B., Chakraborty I., Choudhury A., Khan N. (2020). Electroweakino searches at the HL-LHC in the baryon number violating MSSM. *Physical Review D*, 103(01). DOI: 10.1103/PhysRevD.103.015003
16. Nath A., Bera J., Ghosh S., Roy U. (2020). Exact Analytical Model for Bose-Einstein Condensate at Negative Temperature. *Scientific Reports*, 10(01). DOI: 10.1038/s41598-020-65765-9
17. Kumar P., Pal S.K., Nishchal N.K., Senthilkumaran P. (2020). Formation of polarization singularity lattice through dual-phase modulation. *Journal of Optics*, 22(11). DOI: 10.1088/2040-8986/abbb5d
18. Kumar A., Kumari K., Ray S.J., Thakur A.D. (2020). Graphene mediated resistive switching and thermoelectric behavior in lanthanum cobaltate. *Journal of Applied Physics*, 127(23). DOI: 10.1063/5.0009666
19. Kumari P., Majumder S., Rani S., Nair A.K., Kumari K., Kamalakar M.V., Ray S.J. (2020). High efficiency spin filtering in magnetic phosphorene. *Physical Chemistry Chemical Physics*, 22(10), 5893-5901. DOI: 10.1039/c9cp05390e
20. Ghosh M.P., Kumar P., Kar M., Mukherjee S. (2020). Impact of In³⁺ ion substitution on microstructural, magnetic and dielectric responses of nickel-cobalt spinel ferrite nanocrystals. *Journal of Materials Science: Materials in Electronics*, 31(20), 17762-17773. DOI: 10.1007/s10854-020-04330-6
21. Kumar A., Thakur A.D. (2021). Impurity photovoltaic and split spectrum for efficiency gain in Cu₂ZnSnS₄ solar cells. *Optik*, 238. DOI: 10.1016/j.jijleo.2021.166783
22. Mishra L., Behera R.K., Mondal S., Kumar S., Panigrahi A., Sarangi M.K. (2021). Interface and doping in carbon dots influence charge transfer and transport. *Carbon*, 178, 594-605. DOI: 10.1016/j.carbon.2021.03.026
23. Manglam M.K., Kumari S., Pradhan L.K., Kumar S., Kar M. (2020). Lattice strain caused magnetism and magnetocrystalline anisotropy in Zn modified barium hexaferrite. *Physica B: Condensed Matter*, 588. DOI: 10.1016/j.physb.2020.412200
24. Gupta A.K., Nishchal N.K. (2021). Low-light phase imaging using in-line digital holography and the transport of intensity equation. *Journal of Optics*, 23(02). DOI: 10.1088/2040-8986/abe18a
25. Kumar S., Kumar Pradhan L., Kumar Manglam M., Kar M. (2020). Magnetic interaction between BHF (BaFe₁₂O₁₉) and BTO (BaTiO₃) in BTO – BHF nanocomposite. *Journal of Magnetism and Magnetic Materials*. 498. DOI: 10.1016/j.jmmm.2019.166100
26. Bera J., Ghosh S., Salasnich L., Roy U. (2020). Matter-wave fractional revivals in a ring waveguide. *Physical Review A*, 102(6). DOI: 10.1103/PhysRevA.102.063323
27. Chauhan V.S., Manchaiah D., Kumar P., Kumar R., Bhushan S., Easwaran R.K. (2021). Measurement of multi-frequency dispersions of Electromagnetically Induced Transparency windows using Spatial Light Modulator in rubidium vapour. *Optik*, 225. DOI: 10.1016/j.jijleo.2020.165707
28. Pradhan L.K., Kumari S., Manglam M.K., Pandey R., Kar M. (2021). Microstructure-dependent electrical properties of Bi_{0.5}Na_{0.5}TiO₃-BaTiO₃-SrTiO₃ ternary solid solution. *Journal of Materials Science: Materials in Electronics*, 32(05), 6607-6622. DOI: 10.1007/s10854-021-05376-w
29. Chauhan V.S., Kumar R., Manchaiah D., Kumar P., Easwaran R.K. (2020). Narrowing of electromagnetically induced transparency by using structured coupling light in ⁸⁵Rb atomic vapor medium. *Laser Physics*, 30(06). DOI: 10.1088/1555-6611/ab8568
30. Tiwari P., Das G.M., Dantham V.R. (2020). Optical Properties of Au-Ag Bimetallic Nanoparticles of Different Shapes for Making Efficient Bimetallic-Photonic Whispering Gallery Mode Hybrid Microresonators. *Plasmonics*, 15(05), 1251-1260. DOI: 10.1007/s11468-020-01141-7
31. Paswan S.K., Kumari S., Kar M., Singh A., Pathak H., Borah J.P., Kumar L. (2021). Optimization of structure-property relationships in nickel ferrite nanoparticles annealed at different temperature. *Journal of Physics and Chemistry of Solids*, 151. DOI: 10.1016/j.jpcs.2020.109928
32. Gupta A.K., Fatima A., Nishchal N.K., Nomura T. (2020). Phase imaging based on modified transport of intensity equation using liquid crystal variable retarder with partial coherent illumination. *Optical Review*, 27(01), 142-148. DOI: 10.1007/s10043-020-00576-x
33. Saha S., Thuppilakkadan A., Varma H.R., Jose J. (2020). Photoionization phase shift and Wigner time delay of endohedrally confined atoms using transient phase methods. *European Physical Journal Plus*, 135(09). DOI: 10.1140/epjp/s13360-020-00762-5

34. Kumar P., Pal S.K., Nishchal N.K., Senthilkumaran P. (2020). Non-interferometric technique to realize vector beams embedded with polarization singularities. *Journal of the Optical Society of America A: Optics and Image Science, and Vision*, 37(06), 1043-1052. DOI: 10.1364/JOSAA.393027
35. Mandal A., Dantham V.R. (2020). Photonic nanojets generated by single microspheres of various sizes illuminated by resonant and non-resonant focused Gaussian beams of different waists. *Journal of the Optical Society of America B: Optical Physics*, 37(04), 977-986. DOI: 10.1364/JOSAB.385840
36. Pradhan S.K., Kumar A., Kour P., Pandey R., Kumar P., Kar M., Sinha A.N. (2020). Piezoelectric and mechanical properties of PVDF-PZT composite. *Ferroelectrics*, 558(01), 59-66. DOI: 10.1080/00150193.2020.1735889
37. Jose J., Baral S., Deshmukh P.C., Manson S.T. (2020). Relativistic and correlation effects in the photoionization dynamics of oganesson ($Z=118$): Spin-orbit-interaction-activated interchannel coupling effects. *Physical Review A*, 102(02). DOI: 10.1103/PhysRevA.102.022813
38. Dubey K.A., Jose J. (2020). Revival of resonance shape parameter in elastic scattering of H atom with charged fullerenes C_{60}^{z+} . *Chemical Physics*, 539. DOI: 10.1016/j.chemphys.2020.110982
39. Guha S., Datta S., Panda S.K., Kar M. (2020). Room temperature magneto-caloric effect and electron transport properties study on $Ni_{2.14}Mn_{0.55}Sb_{1.31}$ alloy. *Journal of Alloys and Compounds*, 843. DOI: 10.1016/j.jallcom.2020.156033
40. Saha S., Jose J. (2020). Shannon entropy as a predictor of avoided crossing in confined atoms. *International Journal of Quantum Chemistry*, 120(22). DOI: 10.1002/qua.26374
41. Saha S., Jose J. (2020). Shannon entropy as an indicator of correlation and relativistic effects in confined atoms. *Physical Review A*, 102(05). DOI: 10.1103/PhysRevA.102.052824
42. Mandal A., Dantham V.R. (2020). Short and elongated photonic nanojets emerged from single solid/hollow core-shell microparticles illuminated by focused Gaussian beams and plane wave. *Journal of Quantitative Spectroscopy and Radiative Transfer*, 257. DOI: 10.1016/j.jqsrt.2020.107350
43. Mishra S., Rani S., Ray S.J. (2020). Single electron transistor based nanosensor for DNA and RNA detection. *Journal of Applied Physics*, 128(19). DOI: 10.1063/5.0016104
44. Gupta A.K., Mahendra R., Nishchal N.K. (2020). Single-shot phase imaging based on transport of intensity equation. *Optics Communications*, 477. DOI: 10.1016/j.optcom.2020.126347
45. Nath A., Bera J., Ghosh S., Panigrahi P.K., Roy U. (2020). Soliton dynamics for an ingenious trap combination in a Bose-Einstein condensate. *European Physical Journal D*, 74(02). DOI: 10.1140/epjd/e2019-100103-y
46. Rani S., Nair A.K., Venkata Kamalakar M., Ray S.J. (2020). Spin-selective response tunability in two-dimensional nanomagnet. *Journal of Physics: Condensed Matter*, 32(41). DOI: 10.1088/1361-648X/ab8bf4
47. J. Adam, ..., N. Shah, ... et al [The Star Collaboration] (2020). Azimuthal anisotropy measurements of strange and multistrange hadrons in $U+U$ collisions at $\sqrt{s_{NN}}=193$ GeV at the BNL Relativistic Heavy Ion Collider. *Physical Review C*, 103(06). DOI: 10.1103/PhysRevC.103.064907
48. Kumari K., Kumar A., Kotnees D.K., Balakrishnan J., Thakur A.D., Ray S.J. (2020). Structural and resistive switching behaviour in lanthanum strontium manganite - Reduced graphene oxide nanocomposite system. *Journal of Alloys and Compounds*, 815. DOI: 10.1016/j.jallcom.2019.152213
49. Mahata T., Das G.M., Dantham V.R. (2021). Study of surface enhanced Raman scattering of IR-780 Iodide molecules using Au-Ag bimetallic nanostructures with blunt and sharp sprouts. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, 249. DOI: 10.1016/j.saa.2020.119262
50. Das G.M., William R.V., Dantham V.R., Laha R. (2021). Study on SERS activity of Au-Ag bimetallic nanostructures synthesized using different reducing agents. *Physica E: Low-Dimensional Systems and Nanostructures*, 129. DOI: 10.1016/j.physe.2021.114656
51. Kar S., Nair A.K., Ray S.J. (2021). Supreme enhancement of ferromagnetism in a spontaneous-symmetry-broken 2D nanomagnet. *Journal of Physics D: Applied Physics*, 54(10). DOI: 10.1088/1361-6463/abc64c
52. Pandey R., Kumar Pradhan L., Kumari S., Kumar Manglam M., Kumar S., Kar M. (2020). Surface magnetic interactions between $Bi_{0.85}La_{0.15}FeO_3$ and $BaFe_{12}O_{19}$ nanomaterials in $(1-x)Bi_{0.85}La_{0.15}FeO_3-(x)BaFe_{12}O_{19}$ nanocomposites. *Journal of Magnetism and Magnetic Materials*, 508. DOI: 10.1016/j.jmmm.2020.166862
53. Jyoti A., Singh R.K., Kumar N., Aman A.K., Kar M. (2021). Synthesis and properties of amorphous nanosilica from rice husk and its composites. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, 263. DOI: 10.1016/j.mseb.2020.114871
54. Thuppilakkadan A., Jose J., Varma H.R. (2020). Systematic study of Coulomb confinement resonances of atoms trapped inside charged fullerenes. *Physical Review A*, 102(06). DOI: 10.1103/PhysRevA.102.062826
55. Kumari K., Thakur A.D., Ray S.J. (2020). The effect of graphene and reduced graphene oxide on the resistive switching behavior of $La_{0.7}Ba_{0.3}MnO_3$. *Materials Today Communications*, 26. DOI: 10.1016/j.mtcomm.2021.102040

56. Chauhan V.S., Manchaiah D., Bhushan S., Kumar R., Easwaran R.K. (2020). Theoretical design of quantum memory unit for under water quantum communication using electromagnetically induced transparency protocol in ultracold 87 Rb atoms. *International Journal of Quantum Information*, 18(05). DOI: 10.1142/S0219749920500276
57. Gupta A.K., Nishchal N.K., Banerjee P.P. (2020). Transport of intensity equation based photon-counting phase imaging. *OSA Continuum*, 3(02), 236-245. DOI: 10.1364/OSAC.383527
58. Dayen J.-F., Ray S.J., Karis O., Vera-Marun I.J., Kamalakar M.V. (2020). Two-dimensional van der Waals spinterfaces and magnetic-interfaces. *Applied Physics Reviews*, 7(01). DOI: 10.1063/1.5112171
59. Sekhar M.R., Kumar R.R., Kumari S., Laha R., Pandey S.K., Kar M. (2020). Visible light photoconductivity studies of gold nanoparticle embedded ZnO thin films for photo detector application. *Semiconductor Science and Technology*, 35(11). DOI: 10.1088/1361-6641/abac94
60. Priya S., Laha R., Dantham V.R. (2020). Wavelength-dependent angular shift and figure of merit of silver-based surface plasmon resonance biosensor. *Sensors and Actuators, A: Physical*, 315. DOI: 10.1016/j.sna.2020.112289
61. Rani S., Ray S.J. (2021). DNA and RNA detection using graphene and hexagonal boron nitride based nanosensor. *Carbon*, 173, 493-500. DOI: 10.1016/j.carbon.2020.06.061
62. Chauhan V.S., Kumar R., Manchaiah D., Easwaran R.K. (2021). Enhancement of electromagnetically induced transparency and absorption signals in 85Rb atomic vapor medium by using a small external magnetic field. *Journal of the Optical Society of America B: Optical Physics*, 38(02), 630-637. DOI: 10.1364/JOSAB.414012
63. Behera R.K., Sau A., Mishra L., Mondal S., Bera K., Kumar S., Basu S., Sarangi M.K. (2020). Metal nanoparticle alters adenine induced charge transfer kinetics of vitamin K3 in magnetic field. *Scientific Reports*, 10(01). DOI: 10.1038/s41598-020-75262-8
64. Strange hadron production in Au+Au collisions at $\sqrt{s_{NN}} = 7.7, 11.5, 19.6, 27, \text{ and } 39 \text{ GeV}$, J. Adams, ..., N. Shah, ..., Phys. Rev. C 102 (2020) 34909. Appeared as Editors'suggestion on PRC
65. Measurements of W and Z/ γ * cross sections and cross-section ratios in p+p collisions at RHIC, J. Adams, ..., N. Shah, ..., Phys. Rev. D 103 (2021) 12001
66. Beam-energy dependence of the directed flow of deuterons in Au+Au collisions, J. Adams, ..., N. Shah, ..., Phys. Rev. C 102 (2020) 44906
67. Measurement of inclusive J/ ψ polarization in p+p collisions at $\sqrt{s} = 200 \text{ GeV}$ by the STAR experiment, J. Adams, ..., N. Shah, ..., Phys. Rev. D 102 (2020) 92009
68. Investigation of the linear and mode-coupled flow harmonics in Au+Au collisions at $\sqrt{s_{NN}} = 200 \text{ GeV}$, J. Adams, ..., N. Shah, ..., Phys. Lett. B 809 (2020) 135728
69. Measurement of inclusive charged-particle jet production in Au+Au collisions at $\sqrt{s_{NN}} = 200 \text{ GeV}$, J. Adams, ..., N. Shah, ..., Phys. Rev. C 102 (2020) 54913
70. Measurement of the central exclusive production of charged particle pairs in proton-proton collisions at $\sqrt{s} = 200 \text{ GeV}$ with the STAR detector at RHIC, J. Adams, ..., N. Shah, ..., JHEP 7 (2020) 178
71. Results on Total and Elastic Cross Sections in Proton-Proton Collisions at $\sqrt{s}=200 \text{ GeV}$, J. Adams, ..., N. Shah, ..., Phys. Lett. B 808 (2020) 135663
72. Measurement of Groomed Jet Substructure Observables in pp Collisions at $\sqrt{s}=200 \text{ GeV}$ with STAR, J. Adams, ..., N. Shah, ..., Phys. Lett. B 811 (2020) 135846
73. Beam energy dependence of net-Lambda fluctuations measured by the STAR experiment at the BNL Relativistic Heavy Ion Collider, J. Adams, ..., N. Shah, ... Phys. Rev. C 102 (2020) 24903
74. Underlying event measurements in p+p collisions at $\sqrt{s}=200 \text{ GeV}$ at RHIC, J. Adams, ..., N. Shah, ..., Phys. Rev. D 101 (2020) 52004
75. Measurement of D0-meson + hadron two-dimensional angular correlations in Au+Au collisions at $\sqrt{s_{NN}}=200 \text{ GeV}$, J. Adams, ..., N. Shah, ..., Phys. Rev. C 102 (2020) 14905
76. First measurement of Λ_{c} baryon production in Au+Au collisions at $\sqrt{s_{NN}} = 200 \text{ GeV}$, J. Adams, ..., N. Shah, ..., Phys. Rev. Lett. 124 (2020) 172301
77. Bulk Properties of the System Formed in Au+Au Collisions at $\sqrt{s_{NN}} = 14.5 \text{ GeV}$, J. Adams, ..., N. Shah, ..., Phys. Rev. C 101 (2020) 24905.
78. Precise measurement of the mass difference and the binding energy of hypertriton and antihypertriton, J. Adams, ..., N. Shah, ..., Nature Physics 16 (2020) 409.
79. Beam-energy dependence of identified two-particle angular correlations in Au+Au collisions at RHIC, J. Adams, ..., N. Shah, ..., Phys. Rev. C 101 (2020), 014916
80. L.Sharma, M. Kar, R.K. Choubey, S. Mukherjee, Low field magnetic interaction in the transition metals doped CuS quantum dots, Chemical Physics Letters, 2021, 780 (2) 138902.
81. S. Kumari, M. K. Manglam, A. Shukla, L. Kumar, P. Seal, J. P. Borah, and M. Kar, Optimization of magnetic properties and hyperthermia study on soft magnetic nickel ferrite fiber, Physica B Condensed Matter Physics, 2021, 621(5): 413280.

82. S. Kumari, M. K. Manglam, L. K. Pradhan, L. Kumar, J. P. Borah, and M. Kar, Modification in crystal structure of copper ferrite fiber by annealing and its hyperthermia application. *Applied Physics A*, 127 (4), 1-13 (2021).
83. S. Datta, S. Guha, S. K. Panda, Magnetocaloric effect and critical magnetic behavior in Ni-rich Ni-Mn-Sn full heusler alloy, *Applied Phys A*, 2021, 127 (4), 261.
84. K. Tanbir, M. P. Ghosh, M. Kar, and S. Mukherjee, Tailoring the microstructural, magnetic and dielectric properties of vanadium ions substituted nickel ferrite nanocrystals. *Journal of Materials Science: Materials in Electronics*, 32(8), 10140-10150 (2021)
85. L. Chouhan, S. K. Panda, S. Bhattacharjee, B. Das, A. Mondal, B. N. Parida, R. Brahma, M. K. Manglam, M. Kar, G. Bouzerar, and S. K. Srivastava, Room temperature d₀ ferromagnetism, zero dielectric loss and ac-conductivity enhancement in p-type Ag-doped SnO₂ compounds. *Journal of Alloys and Compounds*, 870, 159515 (2021)
86. S. K. Paswan, S. Kumari, M. Kar, A. Singh, H. Pathak, J. P. Borah, L. Kumar, *Journal of physics and chemistry of solids* 151, 109928 (2021).
87. D. Punetha, M. Kar and S. K. Pandey "A new type low-cost, flexible and wearable tertiary nanocomposite sensor for room temperature hydrogen gas sensing" *Scientific Reports*. 10, 2151 (2020).
88. S. Kumar, S. Supriya, L. K. Pradhan, R. Pandey and M. Kar, "Grain size effect on magnetic and dielectric properties of barium hexaferrite (BHF)" *Physica B*, 579, 411908 (2020), .
89. S. K. Srivastava¹, R. Brahma, S. Datta, S. Guha, Aakansha, S. S. Baro, B. Narzary, D. R. Basumatary, M. Kar "Effect of (Ni-Ag) co-doping on Crystal Structure and Magnetic Property of SnO₂" *Mater. Res. Express* 6, 126107 (2019), .
90. S. Guha, R. Kumar, S. Kumar, L. K. Pradhan, R. Pandey, M. Kar Crystal structure and magnetic properties study on ferromagnet Fe₂MnSi_{0.75}Al_{0.25} Heusler alloy" *Physica B* 579, 411805 (2020), .
91. L. K. Pradhan, R. Pandey and M. Kar, Nonstoichiometric charge defect induced relaxor antiferroelectric ordering in La modified Bi_{0.5}(Na_{0.80}K_{0.20})_{0.5}TiO₃ relaxor ferroelectric., *J. Phys. Condensed matter*, 32, 045404 (2020), .
92. S. Chauhan, M. Kar, J. Kumar, S. K. Jaiswal, Cerium induced Raman spectra of (Ba_{0.5}Sr_{0.5})(Fe_{1-x}Ce_x)O_{3-δ} (x=0 - 1), *Materials Chemistry and Physics* 241, 122378 (2020)
93. K. Tanbir · M. P. Ghosh, R. K. Singh, M. Kar and S. Mukherjee, "Effect of doping different rare earth ions on microstructural, optical, and magnetic properties of nickel-cobalt ferrite nanoparticles" *Journal of Materials Science: Materials in Electronics* 31, 435–443 (2020)

Journal Publications (Other)

1. Namboodiri, C.K.R., Bisht, P.B., Dantham, V.R. (2021). Cascaded Förster Resonance Energy Transfer and Role of Relay Dyes. *Journal of Atomic, Molecular, Condensed Matter and Nano Physics*, 8(01), 1-14. DOI: 10.26713%2Fjamcnp.v8i1.1491
2. Kumar, P., Nishchal, N.K., Singh, K. (2020). Role of self-referenced interferometry in measuring the orbital angular momentum of optical vortices: A review. *Asian Journal of Physics*, 29 (10-12)
3. Kumar, P., Nishchal, N.K. (2020). Self-referenced interference of laterally displaced vortex beams for topological charge determination. *Optics Communications*, 459. DOI: 10.1016/j.optcom.2019.125000
- Chaitanya, B., Thakur, A.D. and Raj, R. (2020). Biomass Gasifier-Powered Adsorption Chiller for Atmospheric Water Harvesting: Prospects in Developing World. *Advances in Energy Research*, 1, 451-460.

Conference Papers/Book Chapters

1. Rani S., Ray S.J. (2020). Biosensing using C3N nanoribbon. *AIP Conference Proceedings*, 2265. DOI: 10.1063/5.0017163
2. Saha S., Jose J., Deshmukh P.C., Kheifets A.S., Dolmatov V.K., Manson S.T. (2020). Effects of relativistic interactions in photodetachment time delay of Br-. *Journal of Physics: Conference Series*, 1412(09). DOI: 10.1088/1742-6596/1412/9/092013
3. Saha S., Jose J., Deshmukh P.C. (2020). Entropic uncertainty as a predictor of avoided crossing for confined system. *Journal of Physics: Conference Series*, 1412(12). DOI: 10.1088/1742-6596/1412/12/122029
4. Nair A.K., Kumari P., Ray S.J. (2020). High temperature magnetic ordering in manganese doped phosphorene nanoribbon. *AIP Conference Proceedings*, 2265. DOI: 10.1063/5.0016587
5. Chauhan V.S., Bhushan S., Easwaran R.K. (2020). Magnetic coil design for two dimensional magneto optical trap to realization of efficient quantum memory. *AIP Conference Proceedings*, 2241. DOI: 10.1063/5.0011428
6. Tiwari, P. and Dantham, V.R. (2020). Effect of different plasmonic nanoparticles on the reactive shift of nanoplasmonic-whispering gallery mode hybrid microresonator. *AIP Conference Proceedings*, 2220. DOI: 0.1063/5.0001703

7. Kumari, K., Kumar, A., Thakur, A.D. and Ray, S.J. (2020). Effect of temperature and magnetic field in resistive switching behavior of $\text{La}_{0.7}\text{Ca}_{0.3}\text{MnO}_3/\text{rGO}$ nano-composite. *AIP Conference Proceedings*, 2220. DOI: 10.1063/5.0001331
8. Mandal, A. and Dantham, V. R. (2020). Elongated photonic nanojets generated by spherical shaped single dielectric core-shell microparticles. *AIP Conference Proceedings*, 2220. DOI: 10.1063/5.0005350
9. Priya, S. and Dantham, V.R. (2020). Study of optical properties of single plasmonic nanostructures using developed fiber-optic dark field microscope. *AIP Conference Proceedings*, 2220. DOI: 10.1063/5.0001705
10. Mahata, T., William, R.V. and Dantham, V.R. (2020). Study of single molecule surface enhanced resonance Raman scattering using Au-Ag bimetallic nanostructures. *AIP Conference Proceedings*, 2220. DOI: 10.1063/5.0001701
11. Kumar, A., Kumari, K., Tomy, C.V. and Thakur, A.D. (2020). Magnetic and thermoelectric properties of $\alpha\text{-MnO}_2$ nanorods. *AIP Conference Proceedings*, 2220. DOI: 10.1063/5.0001333
12. Sinha, A. and Thakur, A.D. (2020). Experimental bandgap tuning of graphene oxide with varying degree of oxidation and reduction. *AIP Conference Proceedings*, 2220. DOI: 10.1063/5.0001164
13. Nishchal, N.K. (2020). A practical optical cryptosystem with partially coherent illumination. *Online Summit on Optics and Photonics*, Lisbon, PORTUGAL.
14. Ten, T.B., Zvoda, V., Sarangi, M.K. and Ansari, A. (2021). Bending Fluctuations in Mismatched DNA Revealed by Fluorescence Correlation Spectroscopy. *Annual Meetings of Biophysical Society*.
15. Kumar, P. and Nishchal, N.K. (2021). Creation and detection of singular light beams. *Student Conference on Photonics and Quantum Technology*, NISER, Bhubaneswar.
16. Kumar, P. and Nishchal, N.K. (2020). Cylindrical vector beams by tailoring single polarization component. *OSA Topical Meeting on Digital Holography and 3D Imaging*.
17. Kumar, P. and Nishchal, N.K. (2020). Determining orbital angular momentum of light using self-referenced interferometry. *8th Bihar Science Conference*, Patna University.
18. Datta, S., Guha, S., Mallick, J., Manglam, M.K. and Kar, M. (2020). Enhanced saturation magnetization of $\text{Co}_2\text{TiAl}_{0.75}\text{Si}_{0.25}$ ferromagnetic Heusler alloy. *International conference on Condensed Matter and Applied Physics*, Bikaner, Rajasthan.
19. Chauhan, V. S., Kumar, R., Manchaiah, D. and Easwaran, R.K. (2021). Enhancement of Electromagnetically Induced Transparency and Absorption Signals in 85 Rb Atomic Vapor Medium by using a Small External Magnetic field. *RSD2021*, IIT Patna.
20. Mallick, J., Manglam, M.K., Datta, S. and Kar, M. (2020). Evidence of magnetic interaction between $\text{BaFe}_{12}\text{O}_{19}$ and CuFe_2O_4 in the nanocomposite. *International Conference on Condensed matter and Applied Physics*, Bikaner, Rajasthan.
21. Gupta, A.K., Kumar, P. and Nishchal, N.K. (2020). Fully-phase encryption using transport of intensity equation. *OSA Topical Meeting on Digital Holography and 3D Imaging*.
22. Kumar, P. and Nishchal, N.K. (2020). Generation of singular beams using electrically addressed spatial light modulator. *5th International Conference on Emerging Electronics*, IIT Delhi.
23. Nishchal, N.K. (2020). Laboratory basics. National Online Experimental. *Workshop Simulation in Physics*, Gyanodaya Gurukul, Patna.
24. Gupta, A.K. and Nishchal, N.K. (2021). Low-light quantitative phase imaging using transport of intensity equation. *Research Scholars' Day*, IIT Patna.
25. Guha, S., Datta, S., Panda, S.K., and Kar, M. (2020). Magnetic critical behaviour study on $\text{Fe}_2\text{MnSi}_{0.5}\text{Al}_{0.5}$ Heusler alloy. *International conference on Condensed Matter and Applied Physics*, Bikaner, Rajasthan.
26. Bera, J. and Roy, U. (2020). Matter-wave Fractional Revivals in Waveguide. *Young Investigator Meet on Quantum Condensed Matter Theory*, NISER Bhubaneswar.
27. Chauhan, V. S., Kumar, R., Manchaiah, D., Easwaran, R.K. (2021). Narrowing of Electromagnetically Induced Transparency by Using Structured Coupling Light in 85Rb Atomic Vapor Medium. *Student Conference on Photonics and Quantum Technology (SCPQT-2021)*, NISER.
28. Kumar, P. and Nishchal, N.K. (2021). Information encoding and encryption using vector light fields. *Research Scholars' Day*, IIT Patna.
29. Kumar, P. and Nishchal, N.K. (2020). Optical singularities in tailored light fields. *OSA Siegmán International School on Lasers*, Warsaw, POLAND.
30. Jose, J., Deshmukh, P.C., Razavi, A., Keating, D. and Manson, S.T. (2020). Relativistic effects in the photoelectron angular distribution of s-states of superheavy elements. *DAMOP2020*, US.
31. Jose, J., Deshmukh, P.C., Razavi, A., Keating, D. and Manson, S.T. (2020). Relativistic effects in the photoelectron dynamics of Oganesson ($Z=118$). *DAMOP2020*, US.

32. Kumar, P. and Nishchal, N.K. (2020). Securing multiple images using beams with spatially variant polarization. *Workshop on Optics and Photonics: Theory & Computational Techniques*, IIT Roorkee.
33. Kumar, P. and Nishchal, N.K. (2020). Self-referenced interferometric methods to determine topological charge of vortex beams. *OSA Topical Meeting on Digital Holography and 3D Imaging*.
34. Jose, J. (2020). Shannon Entropy in endohedrally confined atoms: Indicator of Avoided crossing and Correlation energy. *Topical Conference 2020*, IIT Roorkee.
35. Jose, J. (2020). Study of correlation effects in ground and excited states of A@C60: Analysis employing Shannon entropy and Coulomb confinement resonances. *AAMOS20*.
36. Manglam, M.K., Kumari, S., Guha, S., Datta, S. and Kar, M. (2020). Study of magnetic interaction between hard and soft magnetic ferrite in the nanocomposite. *International conference on Condensed matter and Applied Physics*, Bikaner, Rajasthan.
37. Mahata, T., Das, G.M. and Dantham, V.R. (2021). Study of Surface Enhanced Raman Scattering of IR-780 Iodide Molecules using Au-Ag Bimetallic Nanostructures with Blunt and Sharp Sprouts. *Research Scholars Day*, IIT Patna.
38. Priya, S., Mandal, A. and Dantham, V.R. (2021). Theoretical Investigation on Surface Enhanced Ultraviolet Fluorescence Using Indium Nanoparticles. *Research Scholars Day*, IIT Patna.
39. Chauhan, V. S., Manchaiah, D., Bhushan, S., Kumar, R. and Easwaran, R.K. (2021). Theoretical Study of Electromagnetically Induced Transparency (EIT) for Underwater Quantum Communication. *Student Conference on Photonics and Quantum Technology (SCPQT)-2021*, National Institute of Science Education.
40. Kumar, A., Kumari, K., Sivaprahasam, D. and Thakur, A.D. (2020). Thermoelectric properties in spark plasma sintered $\text{La}_{0.7}\text{Sr}_{0.3}\text{Mn}_{0.5}\text{Co}_{0.5}\text{O}_3$. *AIP Conference Proceedings*, 2220. DOI: 10.1063/5.0001334
41. Roy, U. (2020). Ultracold atoms in quasi-periodic optical lattices. *Young Investigator Meet on Quantum Condensed Matter Theory*, NISER, Bhubneswar.
42. Roy, U. (2020). Ultracold Atoms, trap engineering and metrology. *ICCQS-2020*, BARC, Mumbai.
43. Tiwari, P., Mandal, A. and Dantham, V.R. (2021). Whispering Gallery Modes of Hollow and Solid Core-Shell Microspheres Illuminated by Plane Wave and Gaussian Beam: A Theoretical Study. *Research Scholars Day*, IIT Patna.

CENTRALIZED SERVICES, PROGRAMMES AND UNITS

1. COMPUTER CENTRE

Faculty in-Charge:

Dr. Joydeep Chandra (Head of Department, Computer Center)

Dr. Abyayananda Maiti (Ass. Head of Department, Computer Center)

Staff

Mr. Sandip Kishore, Scientific Officer

Mr. Arpit Ashok, JTS

Mr. Rajender Kumar, STS

Mr. Ranjeet Kumar, JT

Mr. Ajay Kumar Sharma, JTS

IIT Patna has a state of the art computer center. There are two computer center labs, CC-1 and CC-2. CC-1 Lab is equipped with 172 desktops having smart audio-video system and CC-2 Lab is equipped with 42 Desktops. These labs operate from 9:00 AM till midnight on all seven days. Additionally, there are twelve UNIX/Linux/VMware based servers that caters to the institute IT services like Mail, Institute Webserver, Intranet, Online recruitment, admissions and students' academic requirements and research purpose. Availability of the servers and resources is ensured with power back up provided by UPS grid.

A local area network with IP telephony is catering to the needs of students, faculty and staff in academic as well as residential areas. Dedicated NKN (National Knowledge Network) link provides for state of the art virtual classroom service as well as internet. High speed and uninterrupted internet access is provided across the campus to everyone through multiple ISP (Internet Service Provider) leased lines provided by RailTel, Reliance and NKN. The bandwidth details of these leased lines are as follows:

SI No	ISP	Bandwidth (Mbps)
1	RAILTEL	75
2	Reliance PRI	--
3	NKN	1000*

*Shared for virtual classroom and internet





CC LAB-1



CC LAB-2



Server Room

2. Hardware Resources

New state of the art hardware resources were added to Computer Center inventory. These resources align with the requirements of faculty, staff and students.

Following is the list of major hardware resources procured in addition to other:

SI No.	Item	Unit	Price (INR)
1	Desktop Computer(Dell)	80	41,36,076
2	Audio-video System for CC Lab-1	01	23,66,748
3	HP Laserjet Printer	10	2,05,320
Total			67,08,144

Overall, hardware resources of value INR 67,08,144 only were procured under major heads to cater for needs of computer Center.

3. Maintenance and Software Resources

Maintenance and renewal of existing H/W and S/W resources was taken up and new Software resources were added to Computer Center inventory. These resources align with the requirements of faculty, staff and students.

Following is the list of Software resources procured:

SI No.	Item	Unit	Price (INR)
1	1 year maintenance contract of online UPS	4	1,41,600
3	Railtel ISP renewal	1	12,81,500
4	Matlab Campus wide License	1	9,02,700
6	Institute Website Upgradation (Under implementation)	-	4,82,620
7	Microsoft Campus Wide License-renewal	1	7,62,317
Total			67,54,706

Overall, Maintenance & Software resources of value INR 67,54,706 only were procured through Computer Center to cater for needs of Institute

4. Network

Network Services provide LAN, internet and telephone service access across the campus of 550 acres. The technical solution being maintained by IBM and CC jointly (CISCO as Original Equipment Manufacturer for active components) has following salient features:

- The complete solution has 3 layers viz. Core with redundancy, Dual homed Distribution layer with redundancy and dual homed PoE (Power on Ethernet) enabled Access layer.
- Interconnection upto access layer is on OFC (Optical Fibre Cable). The bandwidth planned from core to distribution is 10G+10G upgradable to 40G, from distribution to access is 2G+2G upgradable to 10G and from access to LAN ports is 1G.
- Laying of 16 KM outdoor 48 core 4 tubes armored OFC backbone with 3 rings having enough dark fibers for future expansion. 6/12/24 core OFC cables are planned for indoor cabling.
- Around 130 wireless access points with redundant wireless controller.
- UPS (with 1+1 redundancy for core and distribution) and earthing for all active components with total 159 KVA capacity with 120 min. backup for core, 60 min backup for distribution and 30 min backup for access layer.
- Call Manager with 2000 capacity with redundant voice gateways to support 4 PRI lines and 854 IP telephones.
- NMS, VPN, firewall, Network access control, Identity service engine etc for management and control and network security.
- 24X7 operation & maintenance with 1 site manager+3Engineers+1 reliever.
- There are around 5000+ end points for LAN/Internet and IP telephones

The above network is being extended to upcoming buildings.

SI No.	Item	Unit	Price (INR)
1	Active components for Girl's Hostel	1	40,00,000
2	Active Components for Boy's Hostel, C-type building, Gym Khana- Under planning phase	Under Process	1,20,00,000 (projected)
3	Misc. Network extensions	1	5,00,000 (approx)
4	Renewal of campus Data and Telephone network maintenance	1	1,60,00,000
	Total		3,25,00,000

5. Application Services:

Computer Center is actively involved in development of software applications, web portals and automated solutions to facilitate and support different sections of the institute. During this period,

following activities in this area were undertaken:

SI No.	Application developed	Description
1	File tracking system	For tracking the physical files circulating inside the institute
2	Stock Distribution system	For tracking laptop, desktop and printers in CC
3	Guest House Booking System	For Guest house booking and tracking
4	Online Complaint Portal for different sections like IWD, CC, Academics etc	For raising and tracking user complaints and issues
5	SAIF Web portal	Public Web portal for SAIF
6	GIAN web portal	Public Web portal for GIAN
7	CEP web portal	Public Web portal for CEP
8	Intranet	Intranet services for IITP Community
9	Institute Public Website maintenance and updates	
10	Hospital patient record system	For IITP Hospital
11	Web portal and application hosting	Assistance to IITP community for hosting and publishing their web content, portals etc

6. Mailing System

Computer Center has implemented state-of-art mailing system which has been commissioned successfully on 24th Oct, 2018 by M/S Locuz Enterprises. It has following salient features:

- A. Warranty, Operations and Maintenance for 3 years with SLA
- B. Enterprise grade mail gateway.
- C. Load balancing and failover.
- D. Physical servers for mailing solution.
- E. Unified Storage for mail.
- F. Mailing and collaboration suite.
- G. Administration, Security, management and monitoring.
- H. Wide range accessibility and user friendliness – Mobile, Desktop, Laptop, tablet, web, thick client etc.
- I. Backup and restore.
- J. Handling crash, failures, disasters etc.
- K. Networking, cabling and connectivity.
- L. Directory Services.
- M. Complete migration from existing mailing solution.
- N. Training and handholding – End users and technical team of IIT Patna

Project Value: Rs 1,30,22,409.00

6. Services and Support

- 365 X 24 X 7 support services for Network
- Desktop/Laptop/Server support on all working days during office hours
- Institute Website and e-mail support.
- VPN for remote access.
- Internet access.
- Wifi (Boy's Hostel).
- Intranet, Leave portal, online academic module.
- Exam related services (GATE, JEE etc).
- Support during Student Placement.
- Conference Site Maintenance.
- Support for training programs organization.
- Support for student Gymkhana website for events like anwasha, celesta, reverberance and other extra cocurricular activities.
- Support for Desktop, Laptop, Printer, network etc related issues.
- Library libsys software support.
- License server support (MATLAB, Mathematica, ANSYS, and Tecplot 360 etc).
- Support for institute meeting resources like web conferencing, internet access etc.
- Support for procurement of departmental and institute assets (Computer and accessories, LAB, furniture and other infrastructure related items).
- Online Application services

7. National Knowledge Network (NKN)

The National Knowledge Network (NKN) is a revolutionary state-of-the-art multi-gigabit PAN-Indian resource-sharing network aimed at digitally connecting all national universities, colleges and research establishments to create 'country-wide virtual classrooms'.

Following facilities are available:

1. Virtual Classrooms:

There are three fully functional virtual classrooms which is being extensively used by campus community for academic purposes like Teaching, Conferences, Workshops and Seminars etc

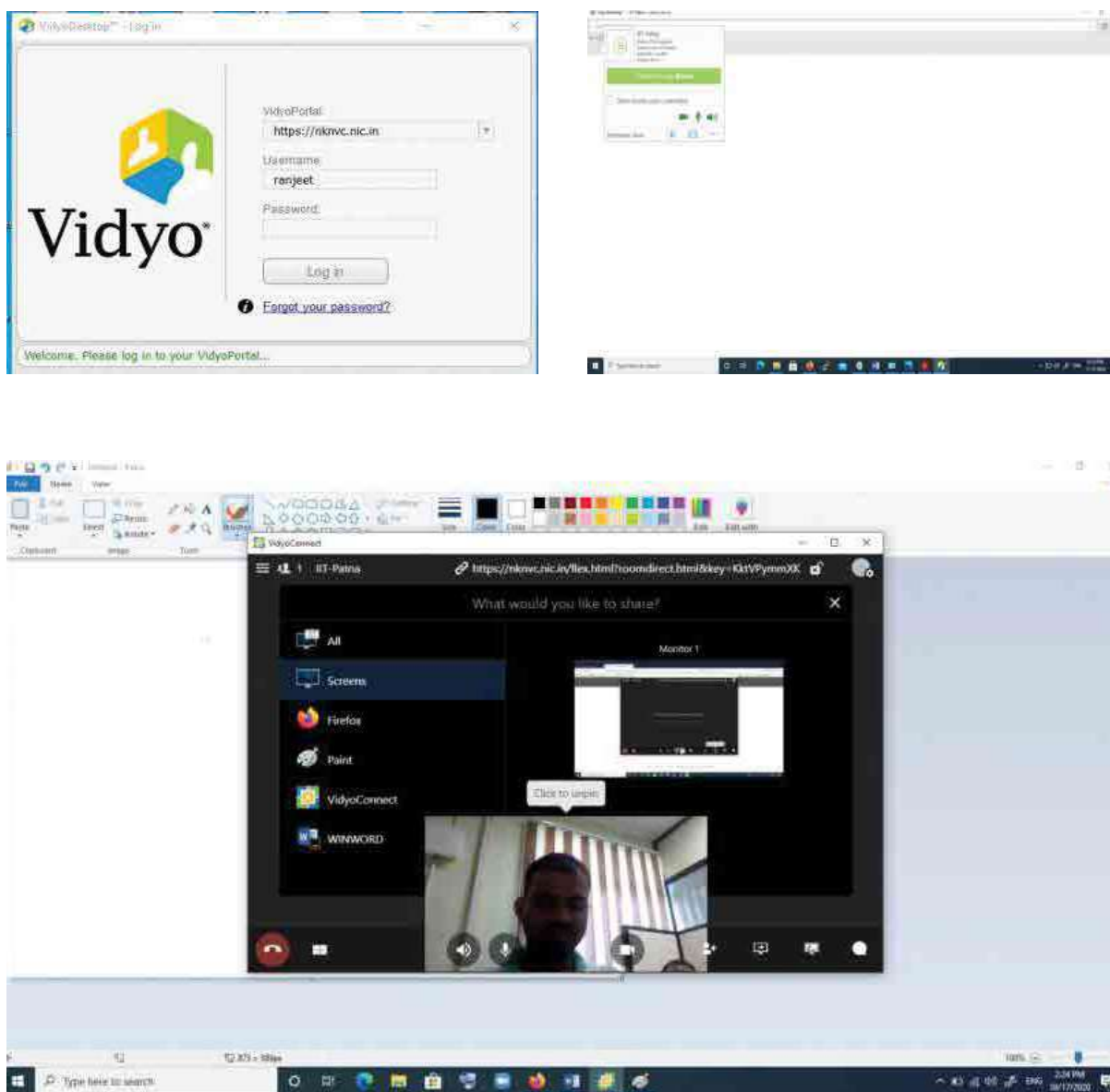
Sl No.	Virtual Classroom	Seating Capacity	Facilities
1	NKN 407	65	1. A rack equipped with Hardware for VC, DVI switcher, networking equipment and connectivity and IP VCR with PTZ cameras for recording of video streams and classes. 2. One projector, 4 LCDs, Audio system, Wireless mic, Document camera and interactive LCD panel. 3. Comfortable seating arrangement with air conditioning and stage with podium.
2	NKN 408	110	1. A rack equipped with Hardware for VC, DVI switcher, networking equipment and connectivity and IP VCR with PTZ cameras for recording of video streams and classes. 2. One projector, 4 LCDs, Audio system, Wireless mic, Document camera and interactive LCD panel. 3. Comfortable seating arrangement with air conditioning and stage with podium.
3	Senate Hall	143	1. A rack equipped with Hardware for VC, DVI switcher, networking equipment and connectivity and IP VCR with PTZ cameras for recording of video streams and classes. 2. One projector, 4 LCDs, Audio system, Wireless mic, Document camera and interactive LCD panel. 3. Comfortable seating arrangement with air conditioning and stage with podium.

Following hardware resources were procured during this period for enhancing the facilities of above mentioned classrooms:

SI No.	Item	Unit	Price (INR)
1.	Sony Projector VPL-EW575	2	1,40,000.00
2.	Blamp Nexia VC	1	2,30,100.00
3.	Godrej Storwel Plain with 4Sh	1	19,447.00
	Total		3,89,547.00

7.1 NKN Internet Connection

IIT Patna has high speed dedicated leased line of 1 Gbps from NKN. This service is provided over optical fiber links of Railtel and BSNL in High availability mode. This link is under close monitoring and supervision of NIC, Patna and IIT Patna Network Team.



7.3. Services and Support

- Virtual Classroom support services during classes, seminars and conferences.
- End user support to faculty, staff and students over phone, mail and web portal.
- Regular Maintenance, Monitoring and supervision of the NKN facilities
- Co-ordination with ISP providers, network services providers and NIC, Patna for technical and functional aspects.
- Procurement of equipment and services for enhancement and repair.



NKN Team



NKN 407 Virtual Classroom



NKN 408 Virtual Classroom



Senate Hall

2. SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY (SAIF)

Sophisticated Analytical Instrument Facility (SAIF) at IIT Patna is a R & D Infrastructure, sponsored by Department of Science and Technology, Govt. of India, for data collection/characterization of research samples/materials by paying nominal charges. This facility is open for internal (IIT Patna users) as well as external researchers from academia, research laboratories as well as industries.

Research vision:

1. To provide data collection facility from sophisticated analytical instruments for characterization of samples received from scientists/researchers from academic institutes, R & D laboratories and industries for research work.
2. Train technicians/students in operation and maintenance of the equipments.

Facilities:

SAIF IIT Patna is equipped with Single Crystal X-Ray Diffractometer (Make-Bruker, Model-AXSD8QUEST), High Resolution Liquid chromatography–mass spectrometry (Make-Bruker, Model-Impact HD UHR-TOF mass spectrometer) and 500 MHz NMR (Make – JEOL, Model-ECZ500R/S1 500 MHz NMR)

Facilities details are given below:

1. High Resolution Liquid chromatography–mass spectrometry (HR-LCMS)

Make: Bruker Germany

Model: Impact HD UHR-TOF mass spectrometer



HR-LCMS, SAIF IIT Patna

Applications: HR-LCMS is a powerful technique that has very high sensitivity and selectivity and so is useful in many applications. Its application is oriented towards the separation, general detection and potential identification of chemicals of particular masses in the presence of other chemicals.

2. Single Crystal X-Ray Diffractometer (SC-XRD)

Make: Bruker Germany

Model: AXS D8 QUEST



SC-XRD, SAIF IIT Patna

Applications: Single-crystal X-ray Diffraction is a non-destructive analytical technique, which provides detailed information about the internal lattice of crystalline substances, including unit cell dimensions, bond-lengths, bond-angles, details of site-ordering and crystal structure.

3. 500 MHz Nuclear Magnetic Resonance (NMR) Spectrometer

Make: JEOL

Model: ECZ500R/S1 with liquid probe and solid probe



500 MHz NMR, SAIF IIT Patna

Applications: Nuclear Magnetic Resonance (NMR) spectroscopy is a very powerful analytical technique that provides detailed structural information in various molecular systems

Technical Progress for FY 2020-21:

1. Total numbers of the users of SAIF IITP are 25.
2. We have received 274 samples for HRMS machine from the institute, IITP.
3. Similarly we have received 70 samples for SC-XRD from the institute and 06 from other institutes.
4. Earning from external samples is Rs.15,576.00

Significant achievement of this year:

1. **Installation of 500 MHz NMR:** Now, NMR facility is available for data collection of research samples
2. **Grant received from DST:** RD/SAIF/PAT/2020(G) dated 10.03.2021- Amount Rs. 50,000.00/-

List of significant publications (2020-2021) acknowledging SAIF-IITP

1. T. Das, L. Sieroń, W. Maniukiewicz, S. Das*, Direct synthesis, characterization and theoretical studies of N-(6-amino-1,3-dimethyl-2,4-dioxo-1,2,3,4-tetrahydropyrimidin-5-yl)benzamide derivatives, *Chemistry Select.* - 2021, 6, 726-732.
2. B. Kumar, P. Kumar, & S. Das*, Spectrophotometric investigation of 5-nitroso-6-aminouracil and its methyl derivative in methanol by selective complexation with bivalent metal ions., *J. Mol. Struct.* 2020, 1221, 128827.
3. Ram Subhawan Verma, Anil Kumar Khatana, Monika Mishra, Shailesh Kumarb and Bhoopendra Tiwari*, Access to enantioenriched 4-phosphorylated δ -lactones from β -phosphorylenones and enals via carbene organocatalysis, *Chem. Commun.*, 2020, 56, 7155-7158
4. Dewendra Thakre, Sk Rajab Ali, Sakshi Mehta, Noohul Alam, Masooma Ibrahim, Debajit Sarma,* Abhishek Mondal, Mrinmoy De, and Abhishek Banerjee* "Polyoxovanadates with Ethylidene-Pyridine Functionalized Bisphosphonate Ligands: Synthesis, Structure, Spectroscopic Characterization, Magnetic, and Antibacterial Studies, *Cryst. Growth Des.* 2021, doi.org/10.1021/acs.cgd.0c01692.

5. Synthesis of novel coumarin containing conjugated fluorescent polymers by Suzuki cross-coupling reactions and their chemosensing studies for iron and mercury ions. P. Bhaumick, A. Jana and L. H. Choudhury* *Polymer*, 2021, 218, 123415.
6. Synthesis of styryl linked fused dihydropyridines by catalyst-free multicomponent reactions. R. Yadav, T. Parvin, A. K. Panday and L. H. Choudhury* *Molecular Diversity*, 2021 <https://doi.org/10.1007/s11030-021-10216-4>
7. Hydrogen peroxide-mediated rapid room temperature metal-free C(sp²)-H thiocyanation of amino pyrazoles, amino uracils, and enamines. D. Ali, A. K. Panday and Lokman H. Choudhury* *J. Org. Chem.* 2020, 85, 13610-13620
8. One-pot synthesis of pyrimidine linked naphthoquinone-fused pyrroles by iodine-mediated multicomponent reactions. A. K. Panday, D. Ali and L. H. Choudhury* *Org. Biomol. Chem.*, 2020, 18, 4997-5007.
9. Microwave assisted synthesis of β -ketothioethers and furan derivatives by thiol directed multicomponent reactions. A. Jana, P. Bhaumick and L. H. Choudhury* *New J. Chem.*, 2020, 44, 8442-8453.
10. Multicomponent synthesis of diphenyl-1, 3-thiazole-barbituric acid hybrids and their fluorescence property studies. A. Mahata, P. Bhaumick, A. K. Panday, R. Yadav, T. Parvin* and L. H. Choudhury* *New J. Chem.*, 2020, 44, 4798-4811
11. Cs₂CO₃-mediated rapid room-temperature synthesis of 3-amino-2-aryl benzofurans and their copper-catalyzed *N*-arylation reactions. A. K. Panday, D. Ali and L. H. Choudhury* *ACS Omega* 2020, 5, 7, 3646-3660
12. Arylhydrazone with large Stokes shift as a fluorescent probe for detection of Cu²⁺ in pure aqueous medium and in vivo studies. R. Dwivedi, S. Singh, B. S. Chauhan, S. Srikrishna, A. K. Panday, L. H. Choudhury and V. P. Singh* *Journal of Photochemistry and Photobiology A: Chemistry*, 2020, 395, 112501.
13. "Ru (II)-Catalyzed Controlled Cross-Dehydrogenative Coupling of Benzamides with Activated Olefins via Weakly Coordinating Primary Amides" A. Baghel, A. Aghi, A. Kumar, *The Journal of Organic Chemistry*, 2021, ASAP, <https://pubs.acs.org/doi/abs/10.1021/acs.joc.1c01090>.

3. TRAINING AND PLACEMENT CELL

The Training and Placement Cell (TPC) IIT Patna, has achieved unprecedented success in the field of placements of recently graduated batch of 2021, even in the midst of COVID-19 global pandemic. We have been consistently improving the placement figures of graduating students (UG & PG) since the first batch graduated in 2012. We have secured immense growth in number of visiting companies in past few years.

The institute witnessed more than fifty new recruiters for the recently concluded placement session. The session ended with 239 offers extended by around 125 companies belonging to various domains. Out of 125 companies who have provided opportunities to IIT Patna students, 48 companies conducted the recruitment process in phase I and the remaining 77 in phase II. Overall this is 17.92 % higher than previous year where 106 companies had participated in placement process. Similarly, the overall employment offers of B.Tech. students, increased by 18.31% this year as compared to the previous academic year.

The institute saw the highest pay package of ₹ 54.57 lakh per annum by Google India for B.Tech. program and ₹ 52.50 lakh per annum by MTX Group for M.Tech. program. This session has also seen an opportunity of 52.00 LPA for PhD students by the European multinational company Henkel.

IIT Patna has also witnessed an increase in the pay packages offered to students during the academic year of 2020-21, despite the challenges of the pandemic. The average salary offered to B.Tech. graduates increased to ₹ 17.13 Lakh Per

Annum, compared to ₹ 14.17 LPA in the preceding year and the average salary offered to M.Tech. students reached ₹ 12.22 lakh per annum in the session of 2020-21.

This year again, the department of Computer Science and Engineering has topped the list in terms of placements followed by Mechanical Engineering, Electrical Engineering, Chemical and Civil engineering. Some of the courses including CSE (B.Tech.), CSE (M.Tech.), Mathematics & Computing (M.Tech.), and Communication Systems (M.Tech.) have seen 100% placements.

We are delighted to share that this year 5 B.Tech. students of current batch got placed with Google which is considered as great achievement amidst a challenging business environment. The placements increased in several domains such as analytics, consulting, E-Commerce, IT & software, Core sectors and others. The maximum number of recruitments was done by the IT sector and also it has been observed an increase in diversity of hiring for female and PwD (Persons with disabilities) candidates.

Internship scenario has improved drastically as many companies are turning towards the model of converting interns into full time employees. The Pre-placement offers (PPOs) offered to students through their internship has certainly given a boost to the placement numbers especially in the past few years.

Many reputed multinational companies, Govt organizations, PSUs, Startups belonging to core engineering, IT sector, E-Commerce, Core & Analytics, Financial as well as educational sector have been participating in Campus placement drives at IIT Patna and keep hiring candidates for full time and intern roles. A few of our esteemed recruiters among these are Google, Microsoft, Amazon, Intel, Reliance Jio, media.net, nvidia, Adobe, Alphagrep, Sprinklr, Arista, Goldman Sachs, Toppr, SMS Data, Topline Co. Ltd, American Express, DE

Shaw, L&T Construction, CodeNation, Optum, TCS Research & Innovation, Samsung R&D, E&Y, ZS Associates, Mecon Ltd. , IOCL, DRDO, ISRO, BEL , REC ,Oracle, Publicis Sapient, GamesKraft, Arista, Bosch , KEC International, NCCBM, etc.

IIT Patna's new record in the field of placement amidst COVID-19 shows the hard work and dedication of the institute and its students for a brighter future of all stakeholders.

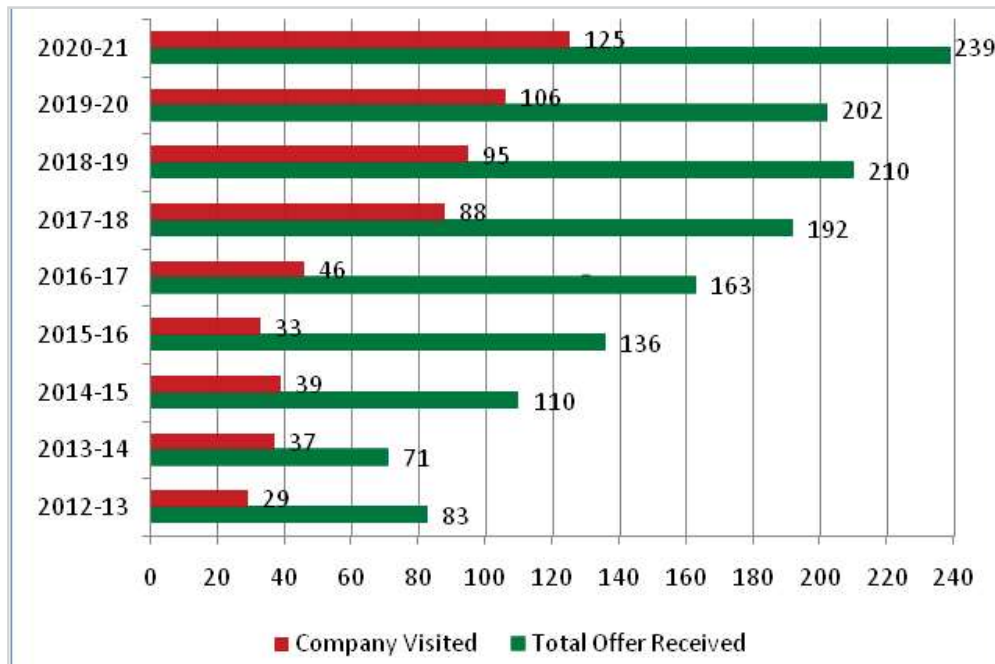


Figure 1. Trend in companies and offers in the past years.



Figure 2. Increase in the average CTC of B.Tech. and M.Tech. offers, over the years.

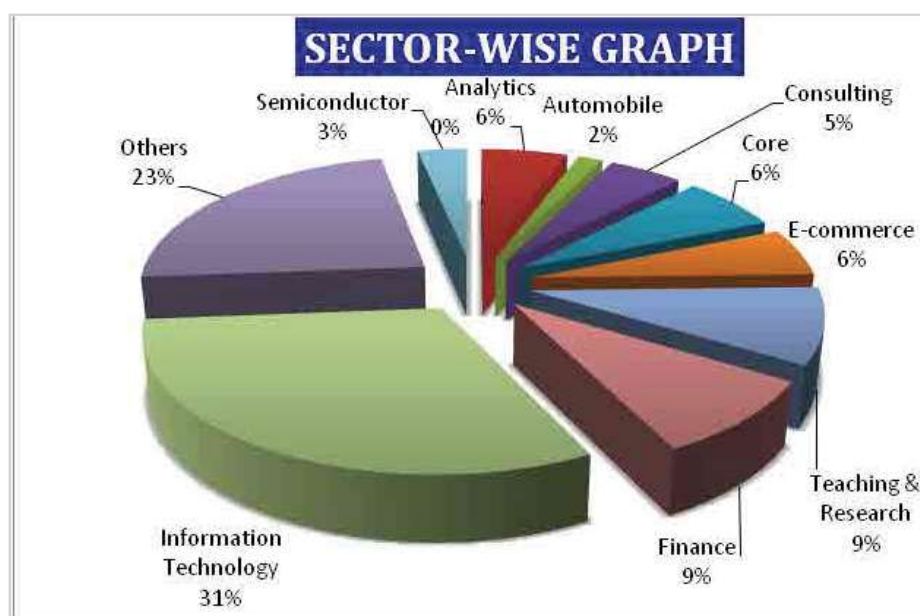


Figure 3: Sector-wise distribution of companies participating in the placement processes.

4. INCUBATION CENTER

1. Introduction

Objective: Promote innovation and entrepreneurship among students, faculty and other innovators with the aim to identify, nurture and translate technology ideas and innovation in the broad area of Electronics System Design and Manufacturing (ESDM) with a focus on Medical Electronics.

Aims: Excellence in technology business incubation in the ESDM and Medical Electronics sector and to act as a launching pad for many successful ventures while promoting the culture of innovation and entrepreneurship in the institute, the state of Bihar and Eastern part of the country

The first steps:

2014: Proposal & Approval

- IITP proposal to establish incubator in ESDM & Medical electronics
- MeitY & IT Dept, Govt of Bihar collaborated
- Approval for total project outlay of INR 47.10 Cr.

2016: Start of Incubation

- Established policies and processes & recruited staff
- Set up state of the art laboratories
- Companies onboarded and incubation activities commenced

2015: Ground work

- Non-profit society registration
- Constitution of Governing board with experts from industry, investors & academia
- Initiation of infrastructure set up

2. Snapshot of Progress on Key Project Milestones

Project Mandate	Status
Creation of society, organizational structure, policies and procedures	✓ Society registered, MC formed, Project Evaluation Team (to select, monitor and recommend funding startups) set up, incubation policies and procedures are in place
Equip Incubatees with world class infrastructure for ESDM product development – Labs	✓ Design, PCB & Product Prototyping Lab fully functional. Capacity has been added in Design, PCB fabrication and product prototyping labs. ✓ Micro nano fabrication lab: Civil part complete, Lab layout and technical specification done. Tendering in progress.

Project Mandate	Status
Equip Incubatees with world class infrastructure - 3000 Sq Mtr Dedicated Facility	✓ Completed, Building inaugurated on 19th September 2020. Final handover and shifting to the new premises underway
Techno Business Mentorship	✓ Mentor Pool and regular mentoring in place; Expansion ongoing. <ul style="list-style-type: none"> • Technical/Product mentors : 20 ; Business Mentors : 8 • Investment Mentors : 4 ; Domain mentors in MedTech:
Support 50 Companies	✓ 60+ Companies supported under its incubation as well as pre incubation programs. (More than 50% companies are from Bihar). 35+ companies are onboard or under onboarding process during the reporting period.
Support to companies on product development and commercialization	✓ Dedicated team of 9 to support incubatees (1 Mgr, 2 Tech, 6 Ops) under the guidance of PIC and Management Committee; ✓ Service provider access for micro machining, market and valuation analysis, components supply, financial/ legal / IP etc
Eco System Creation	Close collaboration with ecosystem partners; Expansion ongoing. <ul style="list-style-type: none"> ✓ Bihar Govt stakeholders: Dpts of IT, Industries, DST ✓ Govt stakeholders : MeitY, MSME, MSME NSSH ✓ Educational stakeholders : AIIMS Patna, Biodesign centre AIIMS Delhi, NEILIT Patna, State Eng Colleges, discussion on with King's College London ✓ Incubators : BIA, SINE, SIIC IITK (IC is a member of ISBA) ✓ Investors : IAN, Hyderabad Angels, a few individual investors ✓ Hospitals : AIIMS Patna; Discussion on with ISIC Delhi
IP Creation	✓ 13 Patents filed by Incubated companies, 3 Granted.
Employment Generation	✓ 100+ People directly employed by Incubatees (excl founders)
Market entry	✓ 10 Companies in the market, 1 company has secured a multi crore project and two companies are around 0.5 Cr of revenues.

2.1 Incubation Program Overview and Progress

- ✓ Program duration is one year (extensible up-to 2 years based on performance and need)
- ✓ Business proposals sourced through national call for proposals/ startup portal of Bihar Udyog Vibhag
- ✓ Project Evaluation Team (with experts from medical, technology, entrepreneurship and investment areas) scrutinize the proposals and selects companies. 6+ evaluation cycles are done annually.
- ✓ Companies are supported with office space, lab access, mentorship, ecosystem connects. Rs 10 Lakhs seed fund is provided to companies selected through national calls. Rs 10 Lakhs of seed softloan is available to companies onboarded under Bihar Startup Policy.
- ✓ Physical and virtual incubation are offered. Virtual incubation do not include office access
- ✓ Ten companies entered the market so far. 4Mirrortech Innovative, one of the early incubatees has seen significant growth and secured large industrial clients and multi crore orders.
- ✓ A few other companies have been able to generate significant revenues. Some of the companies are progressing well in their product development. IC will see more success stories in the year to come.

Progress made by some of the incubated companies at ICITP

1. 4Mirrortech Innovative, with 'Aura'- its smart facility management suite of products (Figure 1), has made a major breakthrough and secured a pan India multi crore order from an industry leading telecom company.
2. Bionic Hope Private Ltd developed active prosthesis (as shown in Figure 2) and secured BIRAC grant of 43.40 lacs under IIPME scheme. Product was launched in the last year
3. Amjad Ali Health Care has entered the market with an innovative telemedicine platform branded as OMED (as shown in Figure 3). This service integrated telemedicine platform along with its "Bike Doc" a portable telemedicine application kit, are in the market and is gaining good traction amid Covid Pandemic
4. BigOHealth, a healthcare access facilitating company has shown significant acceptance among rural and semi urban population in some districts in Bihar and have served more than 8000 Covid patients with teleconsultations, oxygen and hospital availability.
5. Covid Response In addition to telemedicine /health care access facilitation startups:
 - a. Kingshahi innovations has developed a WHO guidelines complied, lower cost, highly effective full body sanitization solution for limiting contamination in sterile areas. Testing at AIIMS Patna showed promising results. Product is ready for launched
 - b. Ewarn System has developed an indigenous bipolar mask with two lines of protection against bacteria and virus with advance protection of copper.
 - c. Sybilline Robotics developed food and drug Delivery Robot, Reuseable faceshield with visor change facility and is presently working on developing a floor sanitizing robot.
 - d. Companies has also worked on automated temperature and oxygen saturation monitoring, IoT enabled pulse oximeter, integrated pulse oximeter cum infrared thermo meter, sanitizer dispenser etc.



Fig 1 : Smart Facility Product



Fig 2 : Active Prosthetic hand



Fig 3 : Telemedicine Platformhand

Pre-incubation program

This 3 month (extensible up-to 6 months) program is aimed at helping start-up teams refine their business plans. In the last couple of years, 10+ teams were supported and a few were selected for regular Incubation based on progress.

2.3 Facilities and Support Provided at IC

IC has set up dedicated 30,000 sq ft facility (Figure) which will accommodate 100+ people (incubatees and staff), labs, clean room, meeting and conference facility, cafeteria, library, recreation facility and a 4-room guest house inaugurated by Dy CM

ESDM Labs : IC, being focussed on ESDM and Medical Electronics has set up state of the art laboratories that will help the incubated companies to move from Concept to Product Prototype in house. IC has set up the following labs to achieve this:

- Electronic System Design and Prototype Lab with design software, electronic components, micro controller based rapid prototyping kits and electronic work bench set up for design and initial prototyping.
- PCB Design and Manufacturing Lab (Figure 5) helps the incubated companies to implement their hardware at board level with the help of sophisticated machines for milling, drilling, routing, rubout, through hole plating, component pick and place, soldering, masking and lithography. PCBs up to 8 layers can be fabricated.



Fig 4.: 30,000 Sq Ft Permanent Facility



Fig 5.: PCB Fabrication Lab

- Testing and Calibration Lab (Figure 6) enables the characterization of PCB prototypes using advanced oscilloscopes, Function Generator, RSA, Logic Analyser, source meter and the like.
- Mechanical Packaging and Product Prototype Lab (Figure 7) enables the prototyping of form factor, enclosure designs and parts using 3D multi-material 3D printers and software.
- RF DC Sputtering unit was installed as part of micro nano fabrication facility, for those companies who would like to work on sensors and mems level fabrication.



Fig 6 : Testing & Calibration Lab



Fig 7 : Mechanical Packaging Lab

In addition, airconditioned work space (~100) with professional grade furniture, computers and internet connectivity; guidance by angels, successful CEOs, doctors, IIT Professors and IC administration on topics including technology, pricing, marketing, developing effective business process, IPR Strategy etc; training programs on regulatory compliances, product design, marketing, IP etc; and **Funding support** Upto 10 Lakhs are also provided to companies.

2.4 Progress in development of key ecosystem partnerships

Partner	Contribution / Involvement
Dept of IT, Govt of Bihar	<ul style="list-style-type: none"> ✓ Funding for permanent facility, clean room, seed fund ✓ Proposal is submitted to them for additional seed funding and hostel facility
Dept of Industries, Govt of Bihar	<ul style="list-style-type: none"> ✓ Sourcing of business proposals ✓ Incubator support (Rs 2 Lakhs per supported company) under the scheme ✓ Seed fund support to the company upto 10 Lakhs as softloan
DST, Govt of Bihar	<ul style="list-style-type: none"> ✓ Agreed to be a funding partner in proposal to Niti Ayog for setting up Atal community Innovation Centre (3 Cr commitments). Awaiting approvals
MeitY, Govt of India	<ul style="list-style-type: none"> ✓ Project review and steering ✓ Funding for operations, equipment and infrastructure
DST, Govt of India	<ul style="list-style-type: none"> ✓ Recognising IC as a TBI so as to hold equity and avail CSR funding.
MSME, Govt of India	<ul style="list-style-type: none"> ✓ Recognised IIT Patna as a HI for supporting MSME through incubators ✓ IC received approval for funding support of 5 Lakhs for first company under the scheme in FY20-21
AIIMS Patna, Bio design centre AIIMS Delhi, ISIC Delhi (in discussion)	<ul style="list-style-type: none"> ✓ Medical domain mentoring support ✓ User requirement validation ✓ Testing and validation of medical devices
MSME NSSH, Govt of India	<ul style="list-style-type: none"> ✓ Funding for entrepreneurship, product development and annual medtech school training programs under National SC ST Hub scheme;
NEILIT Patna	<ul style="list-style-type: none"> ✓ Training collaborations (mutual) ✓ Provides trained manpower/interns for IC companies
Indian Angel Network	<ul style="list-style-type: none"> ✓ Part of board, evaluation panel and regular mentorship
CII, ISBA	<ul style="list-style-type: none"> ✓ CII : Part of Board, supports in IP training programs, industry connect ✓ ISBA : Connect with other incubators, competency building and advisory

2.5 Training, outreach and marketing

IC conducts training programs (for Industries Dept Bihar, MSME NSSH and on its own) of 2 Hrs to 2 weeks duration. The flagship training program, the Annual Medtech School (Figure) see active participation every year. Entrepreneurship development programs and product development workshops also receive excellent reception. IC organizes targeted training programs specifically for incubated companies and larger scale awareness programs for IP, Compliances, Funding etc for larger audience. IC has served 1500+ participants through its training programs since inception.



Fig 8 : Medtech School

ICIITP organized various events for startups (Figure 9) and ESDM enthusiasts.

IC actively participates in events such as Convergence Expo and Smart City Expo held at Delhi in March 2021 and India Electronics Week held over an electronic exhibition platform which saw huge participation from research organizations from across the country and startup and student community. It was a new experience to be part of an ESDM exhibition over virtual platform.



Fig 9 : Training Programs

Media Coverage

ICIITP has been promoting itself through various medial channels. IC created excellent coverage in national and state level print media (both English and Hindi) such as Hindustan Times, Times of India, Hindustan, Dainik Bhaskar,

Dainik Jagaran etc and visual media including DD. All events and programs are reported in the print media on a regular basis. Media houses also report on various incubated companies and their progress.

5. CENTRAL LIBRARY (2020-2021)

The Central Library of IIT Patna has become an advanced library in a very short span of time. It has acquired a large collection of books and e-journals and provides excellent services to its users. Central Library caters the information needs of its highly demanding faculty members, research scholars, students as well as staff of the Institute by offering a wide range of knowledge based (and value added) services and products. The Central Library, IIT Patna has a collection of 22,091 print resources till date. During 2020 - 2021, 175 new print resources have been added to the Central Library. All print resources are RFID tagged and duly processed before use or circulation. Within this period Central Library has also subscribed various e-resources in the form of full-text e-journals and e-books to disseminate the requirement of the users. During this COVID pandemic, the Central Library catered the information needs of its highly demanding faculty members, research scholars, students as well as staffs of the Institute by offered a wide

of knowledge based services and product by Remote Access facility. All e-resources are accessible to all users from outside the campus. Being a core member of E-Sodh Sindu Consortium Central Library is also getting access of various e-resources from the consortium. Central Library is subscribing Forty Six e-journals packages and twelve e-books packages of different publisher in total, which facilitate various knowledge based needs of the users. Central Library has also procured a good number of books in Hindi language. The Central Library has been also procuring few popular magazines and eight daily news paper of English and Hindi languages. Central Library successfully organized user awareness programmes for various e-resources such as Web of Science, SciFinder, IEEE, Turnitin, Urkund etc. Central Library has been regularly updating its e-resources to the NDLI platform.

The Central Library has published its own website <http://library.iitp.ac.in> during this reporting year.

RESEARCH & DEVELOPMENT ACTIVITIES AT IIT PATNA

MOUs with Other Institutions

SI No	Name Of Originator/ Principal Investigator	Dept	Type Of Document- Mou/Research Agreement/ Nda	Purpose Of Agreement/Mou	Name Of Party
1	Dr.Jimsoin Mathew	CSE	MoU	Development of an Artificial Intelligence based system for Comprehensive Cerebral Arterial Stroke Imaging and Prognostication	SCTIMST
2	Dr. Subrata Hait	CEE	Agreement	Collaborative, cross sectoral and multi-stakeholder programme to tackle all sources of air pollution	Bihar State Ppllution Control Board
3	Dr. Ramakrishna Bag	CEE	Agreement	TPQA in up-gradation of PMCH, Patna	CPWD
4	Dr. Ranjan Kumar Behera	EE	MoU	Online and practical training for skill & knowledge development, short certifications courses, outcome based trainings, joint certifications and related services	ALLTPRO Pvt. Ltd.
5	Dr. Murshid Imam	ME	MoU	Academic exchange/research activities cooperation	IIT Hyderabad
6	Dr. Sriparna Saha	CSE	NDA	Research	ABMCPL
7	Dr. Ramakrishna Bag	CEE	Agreement	To prepare state specific action plan for water sector	WALMI, Patna
8	Dr. Jimson Mathew	CSE	NDA	Wind blade defect detection using artificial intelligence	LM Wind Power
9	Dr.Jimson Mathew	CSE	Agreement	Centre of excellence in cyber crime prevention against women and children AI- Based Tools for women and children safety	NPDI Group, Federal University of Minas Gerais
10	Dr. Asif Ekbal	CSE	MoU	Research, Travel and other realted activities	Flipkart Internet Private Limited
11	Dr. Rishi Raj	ME	MoU	Development of science payload for unmanned mission of Indian human space programme, with the objective of developing a passive two-phase heat spreader for hotspot mitigation in microgravity of space	HSFC, ISRO

List of Research Projects during 2020-2021

SI No	Project Number	Name of Investigators	Department	Project Title	Funding Agency
1	431	Dr Rishi Raj	ME	Passive Two Phase Heat Spreader for Hotspot Mitigation in Microgravity of Space.	ISRO - HSFC
2	462	Dr Rajiv Misra	CSE	AICTE Training And Learning (ATAL) Academy Programme (Augmented Reality (AR)/Virtual Reality - VR-AOKNP073	AICTE
3	463	Dr Rajiv Misra	CSE	AICTE Training And Learning (ATAL) Academy Programme (Augmented Reality (AR)/Virtual Reality - VR-AOKNP016	AICTE
4	464	Dr Jimson Mathew	CSE	Energy Efficient cyber security implementation for Internet of Things	DST
5	466	Prof Pushpak Bhattacharyya Dr Asif Ekbal	CSE	Speech to Speech Machine Translation (SSMT) : Pilot System Development	MeiTy
6	467	Dr Raju Halder	CSE	Introduction to Blockchain Technology: Cryptocurrency and Beyond	AICTE
7	473	Dr A K Thakur	PHYSICS	Technology development for high energy density rechargeable lithium battery materials for device applications	DST
8	474	Dr Asif Ekbal	CSE	Helios: Hate, Hyperpartisan and Hyperpluralism Elicitation and Observer System	Wipro Ltd
9	480	Dr Ramakrishna Bag Dr Vishal Deshpande	CEE	Enperimental evaluation of THM processes in smectite clay and their impact on key barrier functions.	BARC
10	490	Dr Trishikhi Raychoudhury	CEE	In-situ remediation of arsenic by ferrous sulfide under heterogeneous porous medi Up-scaling effec and evaluation of long-term fate	DST
11	492	Dr Ashwani Assam DST-INSPIRE Faculty	ME	Study of non-equilibrium flows related to space debris and nano/microfluidices	DST
12	497	Dr Rishi Raj Dr Ajay D Thakur	ME	Psychrometry Driven Design and Fabrication of An All Season Optimal Atmospheric Water Harvester	DST
13	500	Dr Mayank Agarwal Dr Jimson Mathew	CSE	AI enabled dashboard to track key Performance Indicators of State Plan of Action for children of Bihar	UNICEF Bihar
14	502	Dr Shovan Bhaumik Dr Subrata kumar	EE	Passive Torpedo Tracking using Towed Array	NPOL,DRDO
15	504	Dr Sudhir Varma	CEE	Performance based bituminous mix and road design.	SERB
16	505	Dr Chiranjit Sarkar	ME	Design and Development of hybrid magentorheological brake and its Tribo effectiveness studies on a brake inertia dynamometer.	SERB

SI No	Project Number	Name of Investigators	Department	Project Title	Funding Agency
17	507	Dr Anup Kumar Keshri	MME	Graphene Based Membrane for Water Desalination with improved Properties.	SERB
18	508	Dr Akhilendra Singh Dr Surajit Kumar Paul	ME	Influence of hydrogen on fatigue and fracture performance of ferritic-martensitic steel(P91) both at room temperature and elevated temperature	DST
19	509	Dr Asif Ekbal	CSE	Translation of product reviews from English to Indian Languages	Flipkart
20	510	Dr Om Prakash	Math	Skew cyclic codes over the extension of Z_4 and their applications in quantum and DNA computing.	SERB
21	511	Dr Arjun Kumar, Director, IMPRI, Delhi Dr Nalin Bharti, IITP	HSS	Life in the era of Covid-19 impact on women-village makers at Bihar	IMPRI, New Delhi
22	512	Dr Soumya Jyoti Ray Dr Surendra Singh, BARC	PHYSICS	Polarized neutron reflectivity measurements of thin film heterostructures for spin-triplet superconducting state generation	UGC-DAE
23	513	Dr Sudhan Majhi	EE	Designing cost efficient codes for non-orthogonal multiple access(NOMA) for 5G Using generalized boolean/bent functions	DST
24	514	Dr Jose V Parambil, Mentor Dr Nitin Pawar, PDF	CBE	Solution co-crystallization of nutraceutical : process design and development with scale-up	SERB
25	515	Dr Abhishek Raj	ME	Interaction of Vesicles with deformable boundary mimicking Cell-wall Interaction in Cardiovascular diseases.	SERB
26	516	Sourav Gur	CEE	Robust and Reliability Based Design Optimization and Performance Assessment of Superelastic Shape Memory Alloy (SMA) damper for Seismic Vibration Control of Structures.	SERB
27	519	Dr Tapas Laha, IIT Kharagpur Dr Anup Keshri, IITP	MME	Optimization of corrosion and wear properties in plasma sprayed Fe based metallic glass protective coating	SERB
28	525	Dr Sriparna Saha	CSE	IITP-Prithvi AI Research Collaboration	Pingala AI Pvt Ltd
29	528	Dr Anirban Chowdhury, IITP Dr Nilrudra Mandal	MME	Development of optically transparent & translucent Zirconia Ceramic products for advanced technological applications	SERB
30	529	Rajiv Misra Dr Asif Ekbal	CSE	AI-based 6G Network Slicing for social-distance-covid-19 enabled Multi UAV prototype.	MeitY

SI No	Project Number	Name of Investigators	Department	Project Title	Funding Agency
31	531	Dr Sudhan Majhi	EE	Plasma Sprayed CNT Reinforced Graphene Coated Electrode for the Super Capacitor Applications : Towards industrialization	DST
32	532	Dr Anup Kumar Keshri	MME	Plasma Sprayed Nano-diamond reinforced NiCrBSi nanocomposite Coatings: Substitute to Electroplated Hard Chromium	BRNS
33	534	Dr Jimson Mathew	CSE	Development of an Artificial Intelligence based System for Comprehensive Cerebral Arterial Stroke Imaging and Prognostication.	SERB
34	535	Dr Chiranjit Sarkar	ME	Design of a hybrid magneto rheometer operating under compression and shear mode for characterizing rheological and tribological properties of nano smart fluids.	DST
35	537	Dr Rishi Raj Dr Snehasis Daschakraborty	ME	Permanent Dropwise Condensation via Amphiphilic Additives in Vapor Phase.	DST
36	540	Dr Priyanka Tripathi Dr. Prabha Shankar, IIT Trupati	HSS	Mapping Domestic Abuse and Violence in the time of Covid-19: A Study from Bihar.	ICSSR
37	541	Dr Vaibhav Singhal	CEE	Experimental and Numerical Investigation of Interlocking Details for Stone Masonry under Quasi-Static Cyclic Loading.	Building construction Dept, Govt of Bihar
38	542	Dr. Debashis Kundu Dr. Sandip Khan, IITP	CBE	Multiscale Modeling of Deep Eutectic Solvent Promoted Enhanced Oil Recovery.	DST

List of Consultancies undertaken

SI No	Consultancy Number	Name of Consultant	Department	Description of work	Funding Agency
1	465	Dr Sudhir Varma Dr. Kaleem Khan Dr. Sivasubramani Dr Rajib Jha	CEE	Technical Vetting of replacement of Townhall, E-Toiled, Night Shelter Projects of Bhagalpur Smart City Limited	Bhagalpur Smart City Limited
2	468	Dr Sudhir Kumar Varma	CEE	Consultancy services for ANAS S.P.A Qatar Branch for Quality Assurance/Quality Control Pavement Consultancy Services Project from the state of Qatar	ANAS S.p.A Qatar Branch registered in Marina Twin Towers(Tower B), Qatar
3	471	Dr Sudhir Varma Dr K K Hussaini	CEE	Review of pavement design for NHAI Road Project Simaria to Khagaria section of NH-31 of Punj Lloyd Ltd	Punj Lloyd

SI No	Consultancy Number	Name of Consultant	Department	Description of work	Funding Agency
4	472	Dr Vaibhav Singhal	CEE	Proof Checking of erection methodology/launching scheme for composite girders of various span length of bridge under Dhanbad Division of East Central Railway	Royal Infraconstru Limited
5	476	Dr Vaibhav Singhal	CEE	Confirmation of structural soundness of pre-cast CC plate boundary wall in-place of brick boundary wall of 1.98m height	FCI, Patna
6	482	Dr Sudhir Varma Dr Avik Samant	CEE	Vetting of structural and non-structural components	Singhal Enterprises Kolkata
7	485	Dr Manabendra Pathak Dr M K Khan Dr A Bhattacharya Dr A Mahato Dr C Sarkar	ME	Inspection of 75 units of Fogging Machine to be delivered to Patna Municipal Corporation	Applied communication and control, New Delhi
8	486	Dr Manabendra Pathak Dr Mohd Kaleem Khan Dr. Vaibhav Singhal	ME	Vetting of design and drawing of water transporting system from Vaishali canal to Abhishek Pushkarin Sarovar	Office of Chief Engineer Water resource Department, Mothihari, Bihar
9	487	Dr Arvind Kumar Jha Dr Amarnath Hegde Dr Ramakrishna Bag Dr Pradipta Chakraborty	CEE	Design of Filters for Ash Dyke Package of NTPC Barh	NTPC Barh
10	488	Dr Sudhir Varma Dr Subrata Hait Dr Ramakrishna Bag Dr Koushik Roy	CEE	State Technical Agency Consultancy Services for PMGSY Roads	National Rural Infrastructure Development Agency, Ministry of Rural Development, Gol
11	489	Dr Vishal Deshpande Dr Ramakrishna Bag Dr Sudhir Varma	CEE	State Specific Action Plan for Water Sector - Bihar	Water and land Management Institute(WALMI) Patna
12	493	Dr Sudhir Varma Dr Avik Samanta Dr Amarnath Hedge	CEE	Vetting of ICC Building, Smart City Limited, Bangalore	Singhal Enterprises Kolkata
13	496	Dr Manbendra Pathak Dr Md Kaleem Khan Dr Anirban Bhattacharya Dr Anirban Mahto	ME	Inspection of 3 units of Vacuum Based Diesel Truck Mounted Sweeping Maching to be delivered to PMC	Pyara singh & Sons

SI No	Consultancy Number	Name of Consultant	Department	Description of work	Funding Agency
14	498	Dr Syed K K Hussaini Dr Avik Samanta	CEE	Structural design and drawing of civil structures for Ganga River front development	BUIDCO
15	499	Dr Amarnath Hedge Dr Arvind Kumar Jha Dr Pradipta Chakraborty Dr Ramakrishna Bag	CEE	Liquefaction Analysis for Elevated Corridor from Mithapur Flyover to Kankarbagh flyover via Karbigahiya-Chiraiyatand including Mithapur Rotary in Patna	BRPNNL
16	506	Dr Sourav Gur Dr Ramakrishna Bag	CEE	Design checking and recommendation of raft and pile foundation for Sai Kripa Apartment(2B+G+7) residential building at Bhagwat Nagar, Patna	Aura Construction
17	517	Dr Koushik Roy Dr Sourav Gur Dr Arvind Kumar Jha	CEE	One time visit for visual inspection for a building at NIPER, Hajipur	NIPER Hajipur
18	521	Dr Arvind Kumar Jha Dr Amarnath Hedge Dr Ramakrishna Bag Dr. pradipta chakraborty	CEE	Design of Coarse Filters for Ash Dyke Package of NTPC Barh	NTPC Barh
19	522	Dr Sudhir Varma Dr Subrata Hait	CEE	Technical Vetting of Detailed Project Report of Budhanath Ghat Development Project of Bhagalpur Smart City	Bhagalpur Smart City
20	524	Dr Arvind Kumar Jha Dr Subrata Hait Dr Vaibhav Singhal	CEE	Design Vetting of Sewerage Network and Allied Structures, STP and I & D works for Chhapra Town under Namami Ganga Program	Chevrox Constructions Private Limited
21	527	Dr Arvind Kumar Jha Dr Amarnath Hegde Dr Ramakrishna Bag Dr Pradipta Chakraborty	CEE	Balance work of starter ash dyke stage-II NTPC Barh	NTPC Barh
22	538	Dr Ramakrishna Bag Dr Vishal Deshpande Dr Sourav Gur Dr Koushik Roy Dr Arvind kumar Jha Dr Bachu Anilkumar Dr Surajit Paul Dr Jawar Singh	CEE	Third party Quality Assurance of Up-gradation of patna Medical College & Hospital, Under PMSSY (Phase IV)	CPWD
23	539	Dr Amarnath Hedge Dr Om Prakash	CEE	Vetting of hydraulic design and drawings of the 3.55 km pipeline network linking the underground sumps at different locations in Patna	Shri Ganeshay Construction, Patna

List of MoUs under Resources

S.No.	Name of the Organization	Signed With	Signed On	Valid upto	Scope of the MOU
1	National Informatics Center (NIC)	Mr. Sanjay Singh Gahlout, Dy. Director General	2-Mar-2017	1-Mar-2022	The purpose of this MOU are exchange of Academic and Research material and Publications/lps including use of relevant infrastructure in both institutions. Visit of Students from IIT Patna for Summer/Winter Internship.
2	TUSUR University	Prof. Alexander Shelupanov, Rector	2-Dec-2017	1-Dec-2022	The purpose of this Agreement is 1. Exchange of undergraduate and graduate students (internship or academic program); 2. Exchange of faculty and staff members; 3. Joint research and consultancy activities; 4. Participation in seminars and academic meetings; 5. Exchange of academic materials and other information; 6. Special short-term academic programs and projects.
3	Innopolis University	Kirill Semenikhin, Director	6-Feb-2018	5-Feb-2023	The purpose of this collaboration is to support the future engagement of researchers associated with both institutions in order to promote cutting edge research in the areas of Machine Translation (MT), Natural Language Processing (NLP), Data Analytics and Computational Science. School of Computing, DCU recognizes the benefits to be derived from increased collaboration, cooperation and interaction for the further promotion and understanding of MT, NLP, Data Analytics and Computational Science.
4	Kyoto University	Yoehimasa Nakamura	25-Nov-2018	24-Nov-2023	The purpose of this Memorandum is to promote student exchange between the two institutions based upon the General memorandum for Academic Cooperation and exchange between the parties. Both parties will promote in particular the following activities: 1. Exchange of scientific materials, publications and information. 2. Exchange of faculty members and researchers. 3. Exchange of students. 4. Joint research and meetings for research.
5	BSE Institute Limited	Yoehimasa Nakamura	5-Sep-2019	4-Sep-2022	BENEFITS TO BIL FROM THIS COLLABORATION: 1. Outreach opportunities for BIL to share its expertise and experience; 2. Platform for BIL to present cutting edge programs to its target audience. BENEFITS TO IITP FROM THIS COLLABORATION: 3. Access to and use of BIL's educational and learning resources; 4. Opportunity to expand the nature of courses offered based on additional resources available through this agreement; and 5. Inclusion of IITP in media specific campaign and other publicity material of BIL.

S.No.	Name of the Organization	Signed With	Signed On	Valid upto	Scope of the MOU
6	Wiley		29-Jan-2021	28-Jan-2024	IIT Patna and Wiley share a common goal of preparing and educating students by providing effective skill development in field of analytics and other emerging skill areas.
7	Newcastle University		14-May-2021	13-May-2024	Both institutions will encourage direct contact and co-operation between their faculty and administrative staff, departments and research institutions. The main opportunities are (i) Student exchange (ii) Joint research activities (iii) Visits by and interchange of staff and graduate students for research, teaching and discussions (iv) Joint conferences or symposia on subjects of mutual interest.

VARIOUS ACTIVITIES AT IIT PATNA

CEP Courses

The Continuing Education Programme (CEP) activity has been set up to meet the manpower training and knowledge upgradation needs of the industry, academia, and research organizations. CEP office has organized lots of courses during the year 2020-21.

- Educational Technology and Language Classes (01st-02nd June, 2020)-** This course has been designed keeping in mind the current pandemic and how technology can be made a part of language teachers' current and future career. The course covered theoretical and practical issues in language teaching and the use of technology to enhance the learning process.
- Exploring Frontiers in Applied Linguistics (29th June - 01st July, 2020) -** The objective of this course is to introduce and open research avenues in related field among scholars and academicians. The course helps the participants understand the vitality of language in crime detection and crime control motivating them to take up more studies in the crucial field of forensic linguistics. The course also endeavors to bring forth new dimensions in language education which can benefit the participants in understanding the significance of ongoing researches in this area helping them to develop a positive outlook about the language education politics.
- Interplay of IOT and Machine Learning in Smart Healthcare System (06th-08th July 2020) -** The exponential growth of "Internet of Things" changing the way we interact with the world around us. This short course will introduce you to the components of typical IoT devices, design constraints and considerations, and interface with physical world.
- Modern Trends and Development in Semiconductor Microelectronics (09th-11th Oct, 2020) -** The main objective of this course is to provide exposure to the current status and next-generation innovations of various semiconductor devices. The topics focused on basics, advances, and applications to benefit different people from academic & research communities associated with the disciplines of Electrical, Electronics, Computer Science, Chemistry, Physics, Nanotechnology, etc.
- Neuronal Dynamic and Neuromorphic Computing (19th- 23rd Oct, 2020)-** This course aims to provide theoretical and computational aspects of neuroscience and how the same can be extended for modern digital computing which can be highly energy efficient.
- On Recent Trends in Convex Optimization: Theory, Algorithms and Applications (29th- 31st Oct, 2020)-** This online CEP provides a forum for reviewing and discussing all aspects of convex optimization theory, both for scalar and multi-objective optimization problems and several algorithms, which are widely used to solve convex optimization problems
- Mobile Robotics (10th - 12th Nov, 2020) -** Mobile robots are now enabling human beings to physically reach and explore uncharted territories in the Universe. Be a place as distant as Mars, in abysmal depths of ocean, or shrouded by thick glaciers of Antarctic, mobile robots help exploring everything; yet this is just the beginning. Even in day to day life autonomous cars hold a potential to revolutionize transportation and domestic mobile robots help humans in cleaning, elderly help, etc. National defense is an area replete with the use of mobile robots. This course will present various aspects of design, motion planning, and control of intelligent mobile robotic systems.

Course Photographs





RSD 2021

The Indian Institute of Technology Patna celebrated its annual Research Scholars' Day (RSD) on March 20, 2021. Under the guidance of the core committee composed of Dr. Amit Kumar Verma, Dr. Atul Thakur, and Dr. Richa Chaudhary, the Research Scholars' Day was held digitally for the first time since ten years of its conception.

The event started with the inaugural address by Dr. Richa Chaudhary followed by the digital launch of the RSD 2021 booklet by Dr. Subrata Kumar, the Associate Dean, Academics. Followed by these were the invited talks by Dr. Sanghamitra Bhattacharyya, Technical Director (Government Advisory- Infrastructure and Government Services) KPMG, and Dr. Suman Chakraborty, Professor, Department of Mechanical Engineering, Indian Institute of Technology Kharagpur.

RSD 2021, just like previous RSDs, was exhilarating for the enriching demonstration of research through its three-minutes presentation and poster presentation. In the three-minutes presentation, the 27 researchers presented the significance of their research for society within the time span of three minutes. The poster presentations were done digitally for the first time with a huge number of 133 participants across departments. RSD 2021 has further been unique because along with the usual sports events, online cultural events, in collaboration with HOSCA took place for the first time too. The event wrapped up successfully by awarding the winners of three-minute presentations, poster presentations, all the sports events, and all cultural event





Euphoria



The event was conducted in the month of December exclusively for the freshers of 2020. In this online event, the freshers could choose any topic for their artwork. They could also use any form of art they deemed suitable ranging from watercolors to pastels, pencil colors, sketching, etc. This month-long event was organized on the official Instagram account of Vincetroke in the month of December, 2020.

Animake



'Animake' was an open for all three-month-long online events launched on the official pages of Vincetroke. The participants had to submit their artworks on Animes and the entries were posted on a rolling basis. We announced this event in October 2020.

Naqsh



This open event was launched on the official Instagram account of Vincetroke. As mentioned earlier, this was an open event and even the others who aren't students at IIT Patna. Could participate in it. This was a month-long portrait-making event participants could only submit portraits of a renowned personality or any character of their choice. It was launched in August 2020.

Re-Take

This event was organised to give a glimpse of the club to the first years. This event was also used to select members for the core team at the start of academic session. Here the participants showcased their music talents as

instrumentalists, vocalists, beat boxing, music producers and other music forms. Participants underwent a series of selection rounds before showcasing themselves in the main event. This event was held in December 2020.



Acoustic Night

A fun event to lighten the mood of the IITP students and reminisce the days of campus. It is an open mic event where whoever is interested can sing their hearts out or

play any instrument. The event has been held once in the academic year 20-21 in the month of July.



Sports Events

The session 2020-21 was one of the most challenging year for human kind and as a result of COVID 19 pandemic the entire world was left out with a mindset of dilemma and uncertainty but along with all these challenges the sports department IIT Patna organised following events in 2020 to keep the spirit of IIT Patna high and give us a feel of

positivity, motivation to fight from all the odds & emerge as champions in each and every aspect of life.

All these events were organised with approval of competent authorities and abiding all the safety measures and social distancing protocol being enforced by the Ministry, task force and institute medical team

“Fit India Freedom Run and Celebration of National Sports Day 2020”

A combined event of “Fit India Freedom Run and Celebration of National Sports Day 2020” in form of a “National Sports Day Fit India Freedom Run 2020” On 29th of August 2020

was organised at IIT Patna premises with more than 250 participants .



Celebration of 151st birth anniversary of our beloved father of Nation “Mohandas Karamchand Gandhi” Bapu.

Sports department Indian Institute of Technology Patna had organized a Knockout Badminton & Table Tennis tournament for Staff and Students on 2nd October 2020

at IIT Patna premises with all the safety measures and social distancing with more than 50 participants.



“ Fit India Cyclothon 2020 “

Sports Gymkhana Indian Institute of Technology Patna organised “Fit India Cyclothon 2020 “ under aegis of Fit India Movement, Ministry of Youth Affairs and Sports,

Government of India on 30th of December 2020 with a motto of “Pedal your Way to Fitness”. With more than 150 participants



“Republic Day Sports fest 2021”

To keep the spirit of patriotism high and to celebrate the legacy of world’s largest democracy on its 72nd Republic Day Sports Gymkhana Indian Institute of Technology Patna organised “Republic Day Sports fest 2021” on 26th of

January 2021. At IIT Patna premises which included Cricket and Volleyball at IIT Patna Sports Arena with more than 100 participants.



“International Women’s day Sports Fest 2021”

In continuation to promote gender equality and empower women at IIT Patna as well as to present our gratitude towards the women power of the globe, Sports department

organized “109th International Women’s day 2021 on 8th of March 2021” at IIT Patna premise with more than 100 participants.



“Azadi ka Amrut Mahotsav Cycle Rally 2021”

ISports Department Indian Institute of Technology Patna cordially invites you to participate in “Azadi ka Amrut Mahotsav Cycle Rally 2021” under aegis of Ministry of

Education Government of India on 13th of March 2021 with more than 150 participants.



All these events were given a healthy publicity by electronic mail invitation to all faculties, students and staff from IIT Patna as well as by means of physical banners and posters all around the campus resulting in an overwhelming response from IIT Patna fraternity and great turnout of participants from IIT was seen for all these events.

Sports department would like to express its gratitude to IIT Patna fraternity in general and specially to A. Dean SA, Registrar, Chairman Sports, DR SA for their endless support and guidance in making all these events a grand success and wish to be blessed with same in coming times.

STATISTICAL INFORMATION

8.1 (A) Admission to Undergraduate Students

Admissions to B.Tech.at IIT Patna were made through Joint Entrance Examination held in 2020. A department wise and category wise breakup of the students admitted to IIT Patna for the academic session 2020-21 is given below

Students admitted through JEE 2020 in IIT Patna:

Course	Gen	OBC	SC	ST	PD	EWS	Grand Total
Computer Science & Engineering	31	22	11	06	02	08	80
Electrical & Electronics Engineering	28	21	12	06	01	10	78
Mechanical Engineering	31	23	12	06	0	08	80
Chemical & Biochemical Engineering (Chemical Engineering)	24	18	10	01	01	07	61
Civil Engineering	24	18	11	04	0	07	64
Metallurgical and Materials Engineering	14	11	06	0	0	03	34
Total	152	113	62	23	04	43	397

Branch-wise list of students who enrolled for B.Tech at IIT Patna for the academic session 2020-21 is given below:

(I) Computer Science & Engineering

Sl. No.	Roll No.	Candidate Name	Category	Gender
1	2001CS01	ABHISHEK GUPTA	Open	Male
2	2001CS02	ADARSH KUMAR	SC	Male
3	2001CS03	ADITYA KUMAR SINGH	OBC-NCL	Male
4	2001CS04	AMAN AGRAWAL	Open	Male
5	2001CS05	ANAY VIVEK KARNIK	Open	Male
6	2001CS06	ANGELINA SHIBU	Open	Female
7	2001CS07	ANIMESH KUMAR SINHA	Open	Male
8	2001CS08	ANURAG DESHMANE	SC	Male
9	2001CS09	ANUSHKA PANDEY	Open	Female
10	2001CS10	ARYAMAN AMITABH	Open	Male
11	2001CS11	ASHUTOSH KUMAR	OBC-NCL	Male
12	2001CS12	ASTHA SINGHAL	Open	Female
13	2001CS13	ATUL KUMAR	OBC-NCL	Male
14	2001CS14	AYUSH GUPTA	Open	Male
15	2001CS15	B GNANESHWAR GOUD	OBC-NCL	Male
16	2001CS16	BANDARU RITHWHICK PRAHARSHA	OBC-NCL	Male
17	2001CS17	BHANWAR YUVRAJ SINGH NATHAWAT	GEN-EWS	Male
18	2001CS18	BHUKYA CHARAN TEJA NAIK	ST	Male
19	2001CS19	C M DEVANAND	OBC-NCL	Male
20	2001CS20	CHAUDHARI PARTH PARSOTTAMBHAI	ST	Male
21	2001CS21	CHETHI REDDY SRINITHYA	GEN-EWS	Female
22	2001CS22	CHUKKALA DINESH	Open	Male
23	2001CS23	DHRUV CHITKARA	Open	Male
24	2001CS24	DHRUVAN KADAVALA	OBC-NCL	Male
25	2001CS25	DIVYANSHU CHANDRA	SC	Male
26	2001CS26	G TEJA VARDHAN REDDY	Open	Male
27	2001CS27	HARDIK GOYAL	Open	Male
28	2001CS28	HARSH MILIND JOSHI	Open	Male

Sl. No.	Roll No.	Candidate Name	Category	Gender
29	2001CS29	HARSHIT SINGH	Open	Male
30	2001CS30	HARSHITA MEENA	ST	Female
31	2001CS31	JADHAV ISHAN RAJESH	OBC-NCL	Male
32	2001CS32	KALPANA BISHNOI	Open	Female
33	2001CS33	KANAK NIRAKAR RAMTEKE	SC	Female
34	2001CS34	KANDAPU SWATHI	OBC-NCL	Female
35	2001CS35	KARTIK KAILAS MOULI	ST	Male
36	2001CS36	KAUSHAL RAJ	OBC-NCL	Male
37	2001CS37	KAUTUK KUMAR	OBC-NCL	Male
38	2001CS38	KHUSHI PRASAD	OBC-NCL	Female
39	2001CS39	KISHLAY RAJ	OBC-NCL	Male
40	2001CS40	KUNWAR ABHAY RAI	GEN-EWS	Male
41	2001CS41	KUSHAGRA YADAV	Open	Male
42	2001CS42	KUSHUM	SC	Female
43	2001CS43	KUSUMA PRATEEK RAJESH	SC	Male
44	2001CS44	MANAV P GONDALIA	Open	Male
45	2001CS45	MANISH KUMAR	OBC-NCL	Male
46	2001CS46	MANTRI MIHIR PARAG	Open	Male
47	2001CS47	MEDAPURAM LAKSHMINARASIMHA KEERTANA	Open	Female
48	2001CS49	N V VINEETH	Open	Male
49	2001CS50	NOMULA VIJAY SHASHANK	OBC-NCL	Male
50	2001CS51	PIYUSH SINGH	Open	Male
51	2001CS52	RAJDEEP KARMAKAR	OBC-NCL	Male
52	2001CS53	RAJNEESH KUMAR	OBC-NCL	Male
53	2001CS54	ROBIN SINGH	SC	Male
54	2001CS55	ROHIT KUMAR	GEN-EWS	Male
55	2001CS56	ROHIT RANJAN	OBC-NCL	Male
56	2001CS57	RUPAK BISWAS	SC	Male
57	2001CS58	SAI VARDHAN VEMULAPALLI	Open	Male
58	2001CS59	SAMIR KUMAR	GEN-EWS	Male
59	2001CS60	SANSKRITI SINGH	OBC-NCL	Female
60	2001CS61	SARTHAK BISWAS	SC	Male
61	2001CS62	SAURAV DUDHATE	Open	Male
62	2001CS63	SHANTANU TIWARI	GEN-EWS	Male
63	2001CS64	SHIVAM ANAND	OBC-NCL	Male
64	2001CS65	SHIVAM TIWARI	GEN-EWS	Male
65	2001CS66	SHIVANSH JAISWAL	Open	Male
66	2001CS67	SHREYAS	ST	Male
67	2001CS68	SHUBHAM SHYAM GHODKE	Open	Male
68	2001CS69	SIDDHANT GUPTA	Open	Male
69	2001CS70	SIDDHANT KUMAR	SC	Male
70	2001CS71	SIYARAM KUMAR	Open(PwD)	Male
71	2001CS72	SYED ALI ABBAS RAHIL	GEN-EWS	Male
72	2001CS73	TANISHA MANDLECHA	Open	Female
73	2001CS74	UTSAV SAHOO	OBC-NCL	Male

Sl. No.	Roll No.	Candidate Name	Category	Gender
74	2001CS75	VANGA SALONI PRIYADARSHINI	OBC-NCL	Female
75	2001CS76	VINNAKOTA TARUN VIKAS	Open	Male
76	2001CS77	VIPUL KUMAR GOND	ST	Male
77	2001CS78	YASH GAUTAM	SC	Male
78	2001CS79	YASH MALIK	Open	Male
79	2001CS80	YASH PANT	Open	Male
80	2001CS81	YELURI SAI PRASANTH	OBC-NCL	Male

(II) Electrical & Electronics Engineering:

Sl. No.	Roll No.	Candidate Name	Category	Gender
1	2001EE01	AAKRITI KUMARI	OBC-NCL	Female
2	2001EE03	ADITYA RAMDAS PATIL	OBC-NCL	Male
3	2001EE04	ADITYA SINGH	Open	Male
4	2001EE05	AMAN KUMAR	SC	Male
5	2001EE06	APOORV VERMA	SC	Male
6	2001EE07	ASHISH S MURTHY	Open	Male
7	2001EE08	ATRI GUHA	Open	Male
8	2001EE09	AYUSH AGRAWAL	Open	Male
9	2001EE10	AYUSH RAJ	Open	Male
10	2001EE11	BHUKYA SURENDER	ST	Male
11	2001EE12	BODDU SADVIK	OBC-NCL	Male
12	2001EE13	CHANYA	Open	Female
13	2001EE14	DASHRATH PASWAN	SC	Male
14	2001EE15	GARV JAIN	Open	Male
15	2001EE16	GAURAV GARG	Open	Male
16	2001EE17	GAURAV KUMAR MEENA	ST	Male
17	2001EE18	GIRIDHAR VARSHNEY	GEN-EWS	Male
18	2001EE19	GOJE SATVIK	OBC-NCL	Male
19	2001EE20	HARSH KUMAR BIRTHARE	SC	Male
20	2001EE21	JADHAV NEHA KISHOR	GEN-EWS	Female
21	2001EE22	JHA AMAN DIWAKAR	Open	Male
22	2001EE23	KAMATAM PRAVEENYA	Open	Female
23	2001EE24	KANISHK GIRI	OBC-NCL	Male
24	2001EE25	KARANAM DHARNEESH	Open	Male
25	2001EE26	KAU ADITYA	GEN-EWS	Male
26	2001EE27	KAUSTUBH SHAHAPURKAR	Open	Male
27	2001EE28	KUMKATI BABA PRABHU DURGA SRINIVAS	Open	Male
28	2001EE29	MALLEMPADI YASHASWINI	Open	Female
29	2001EE30	MALRAJU SRIVARDHAN RAO	Open	Male
30	2001EE31	MANAS SINGH	OBC-NCL	Male
31	2001EE32	MANVENDRA	Open	Male
32	2001EE33	MAYANK KUMAR	Open	Male
33	2001EE34	MEDHA SINGH	SC	Female
34	2001EE35	MIHIR SAHU	Open	Male
35	2001EE36	MUDUMALA DINESH	SC	Male

Sl. No.	Roll No.	Candidate Name	Category	Gender
36	2001EE37	NAGRECHA JENIL BHAVESHBHAI	GEN-EWS	Male
37	2001EE38	NAKKINA VENKATA ROHIT	OBC-NCL	Male
38	2001EE39	NIKHIL CHOBHIYAL	ST	Male
39	2001EE40	NISHANT RANJAN	Open	Male
40	2001EE41	PATHAK KHANJAN YAGNESHBHAI	Open	Male
41	2001EE42	PAWAN KUMAR	SC	Male
42	2001EE43	PAWAR PRANITA PANDHARINATH	Open	Female
43	2001EE44	PRADIPTI MONDAL	SC	Female
44	2001EE45	PRATHAM CHOUDHARY	OBC-NCL	Male
45	2001EE46	PRIYA RAJ	OBC-NCL	Female
46	2001EE48	RAHUL CHOWDHURY	SC	Male
47	2001EE49	RAHUL DHIMAN	OBC-NCL	Male
48	2001EE50	RAHUL KUMAR	ST	Male
49	2001EE51	RAJAN KUMAR	OBC-NCL	Male
50	2001EE53	RAVI KUMAR	OBC-NCL	Male
51	2001EE54	RISHIKESH DEVANATHAN	Open	Male
52	2001EE55	ROHAN CHOUDHARY	SC	Male
53	2001EE56	ROHIT KUMAR	OBC-NCL	Male
54	2001EE57	RUSHIKESH LANGDE	OBC-NCL	Male
55	2001EE58	S.RISHIRAJ	OBC-NCL	Male
56	2001EE59	SAHIL JOSHI	GEN-EWS	Male
57	2001EE60	SAMEER KANT	GEN-EWS	Male
58	2001EE61	SANDEEP MISHRA	GEN-EWS	Male
59	2001EE62	SANJU KUMAR	Open	Male
60	2001EE63	SAURABH KANDPAL	Open	Male
61	2001EE64	SHAMBHAVI	OBC-NCL	Female
62	2001EE65	SHARVIRALA NITHISH	GEN-EWS	Male
63	2001EE66	SHIVAM KRISHNA	OBC-NCL	Male
64	2001EE67	SHIVAM PARIHAR	SC	Male
65	2001EE68	SHIVESH SATYAKAM	OBC-NCL	Male
66	2001EE69	SHIVRAJ JAGDEESH PRASAD	OBC-NCL	Male
67	2001EE70	SHIVSHANKAR KUMAR	ST	Male
68	2001EE73	SUBHASH KUMAR MEHTA	OBC-NCL	Male
69	2001EE74	SUDEEP KUMAR PAUL	Open	Male
70	2001EE75	SUDHANSHU SINGH	GEN-EWS	Male
71	2001EE76	SUMAN KUMAR SAURAV	SC	Male
72	2001EE77	SUYOG VINOD CHAUDHARI	OBC-NCL	Male
73	2001EE78	T PRASHANTH	Open	Male
74	2001EE79	TANYA KUMARI	GEN-EWS	Female
75	2001EE80	VARTIKA MISHRA	Open	Female
76	2001EE81	VISHAL SHARMA	Open	Male
77	2001EE82	VRUTANT PRADIPBHAI CHAUDHARI	ST	Male
78	2001EE83	YASH RAJ	Open	Male

(III) Mechanical Engineering:

Sl. No.	Roll No.	Candidate Name	Category	Gender
1	2001ME01	AARAV ARYA	OBC-NCL	Male
2	2001ME02	ABHISHEK	OBC-NCL	Male
3	2001ME03	ABHISHEK S KUMAR	Open	Male
4	2001ME04	ABHISHEK VERMA	OBC-NCL	Male
5	2001ME05	ADARSH RAJ	Open	Male
6	2001ME06	ADIL JAMAL	Open	Male
7	2001ME07	ADITYA BABERWAL	OBC-NCL	Male
8	2001ME08	ANIL RUNDLA	OBC-NCL	Male
9	2001ME09	ANSARI MOHD WASIF ISLAM	OBC-NCL	Male
10	2001ME10	ANSH SAXENA	Open	Male
11	2001ME11	ANUSH DUBEY	Open	Male
12	2001ME12	ASHOK KUMAR MEENA	ST	Male
13	2001ME13	BALAJEE	OBC-NCL	Male
14	2001ME14	BHOUTMANGE BHAVESH DILIP	SC	Male
15	2001ME15	CHANDRA PRAKASH SAH	OBC-NCL	Male
16	2001ME16	CHETAN CHAUDHARY	Open	Male
17	2001ME17	CHETNA RAO	SC	Female
18	2001ME18	CHOWKE ROHAN	OBC-NCL	Male
19	2001ME19	DANISH RAZA	OBC-NCL	Male
20	2001ME20	DASARI HARSHA VARDHAN	OBC-NCL	Male
21	2001ME21	DEEPANSHU CHAUDHARY	GEN-EWS	Male
22	2001ME23	DEWANSH KUMAR	Open	Male
23	2001ME24	DIVYE	Open	Male
24	2001ME25	FARHAAN ALAM	Open	Male
25	2001ME26	FERSHA J J	OBC-NCL	Female
26	2001ME27	GANDE SOMA MANI KUMAR	GEN-EWS	Male
27	2001ME28	GARGI CHANDRAKAR	Open	Female
28	2001ME29	GOPESH RAWAT	ST	Male
29	2001ME30	ISHANI UPADHYAY	Open	Female
30	2001ME31	KAMLESH TEKAM	ST	Male
31	2001ME32	KARTIKAY GUPTA	Open	Male
32	2001ME33	KAVITA MEENA	ST	Female
33	2001ME34	KOTAGIRI TARUN ADITYA	GEN-EWS	Male
34	2001ME35	KRISHNA RAJ	Open	Female
35	2001ME36	KRITISH KUMAR	SC	Male
36	2001ME37	MACHARLA VENKATA BHANU	OBC-NCL	Male
37	2001ME38	MANAV AGARWAL	GEN-EWS	Male
38	2001ME39	MD OWAS SIDDIQUEI	OBC-NCL	Male
39	2001ME40	NIPAN MEDHI	SC	Male
40	2001ME41	NISCHAL JAIN	Open	Male
41	2001ME42	NITESH SRIVASTAVA	Open	Male
42	2001ME43	PARAG BADGOTYA	ST	Male
43	2001ME44	PARVESH KUMAR	GEN-EWS	Male
44	2001ME45	PIYUSH GAUTAM	Open	Male

Sl. No.	Roll No.	Candidate Name	Category	Gender
45	2001ME46	POOJA BADI	Open	Female
46	2001ME47	PRANAV RAJ	OBC-NCL	Male
47	2001ME48	PRATEEK KUMAR	Open	Male
48	2001ME49	PRATHAM DINESH GUPTA	Open	Male
49	2001ME50	PRATYAY AMRIT	Open	Male
50	2001ME51	PRATYUSH KUMAR	Open	Male
51	2001ME52	PRITAM RAJ	SC	Male
52	2001ME53	PRIYANKA KUMARI	OBC-NCL	Female
53	2001ME54	PRIYANSHI SINGH	SC	Female
54	2001ME55	PRIYANSHU PATRA	Open	Male
55	2001ME56	PUNIT JAIN	Open	Male
56	2001ME57	PUSHPANJAY	SC	Male
57	2001ME58	RAJAN KUMAR	SC	Male
58	2001ME59	RAMTEKE PRAJYOT ANIL	SC	Male
59	2001ME60	RISHABH KUMAR SINHA	Open	Male
60	2001ME61	RITIK KUMAR	SC	Male
61	2001ME62	ROSHAN KISHORE	OBC-NCL	Male
62	2001ME63	RUDRRANSH SAXENA	Open	Male
63	2001ME64	SAHIL KANAUIA	SC	Male
64	2001ME65	SAKSHI YADAV	OBC-NCL	Female
65	2001ME66	SANSKAR SINGH	Open	Male
66	2001ME67	SHASHI RANJAN KUMAR	OBC-NCL	Male
67	2001ME69	SHAZEB KAMRAN MOHAMMAD TARIQUE	GEN-EWS	Male
68	2001ME70	SHIVAM YADAV	OBC-NCL	Male
69	2001ME71	SHRESTH VERMA	Open	Male
70	2001ME72	SHUBHAM	GEN-EWS	Female
71	2001ME74	SRUJANA SIRIPURAPU	OBC-NCL	Female
72	2001ME75	SURMAI	Open	Female
73	2001ME76	SYAMALA YASWANATH	ST	Male
74	2001ME77	SYED IBRAHIM AHMAD	Open	Male
75	2001ME78	TARUN MERUGA	SC	Male
76	2001ME79	VAJINAPALLY SREEYUSHA	Open	Female
77	2001ME80	VEER BAHADUR SINGH	GEN-EWS	Male
78	2001ME81	VIPIN KUMAR DHAKAD	OBC-NCL	Male
79	2001ME82	YASH AJITSARIA	Open	Male
80	2001ME83	YASH KUMAR JHA	OBC-NCL	Male

(IV) Civil Engineering:

Sl. No.	Roll No.	Candidate Name	Category	Gender
1	2001CE01	ABHIJEET KUMAR	OBC-NCL	Male
2	2001CE02	ABHINAV SINGH	Open	Male
3	2001CE03	ADARSH PANDEY	GEN-EWS	Male
4	2001CE04	ADARSH TIWARI	Open	Male
5	2001CE05	ADITYA KUMAR	OBC-NCL	Male
6	2001CE06	AMRIT RAJ	SC	Male

Sl. No.	Roll No.	Candidate Name	Category	Gender
7	2001CE07	ANAND DEEP KUMAR	OBC-NCL	Male
8	2001CE09	ANKUR SHARMA	Open	Male
9	2001CE10	ANKUR SINGH	Open	Male
10	2001CE11	ARUSHI THAKUR	Open	Female
11	2001CE12	ARYAN	Open	Male
12	2001CE13	ARYAN ANJAN CHANDA	Open	Male
13	2001CE14	ASHISH KUMAR MEENA	ST	Male
14	2001CE15	ASHOK BISHNOI	GEN-EWS	Male
15	2001CE16	ATUL DWIVEDI	Open	Male
16	2001CE17	DEEPAK MEENA	ST	Male
17	2001CE18	DEEPANSHU SHARMA	Open	Male
18	2001CE19	DEVANSH MISHRA	Open	Male
19	2001CE20	DEVENDRA DHAKER	OBC-NCL	Male
20	2001CE21	DHANGAR NEHA RANI	OBC-NCL	Female
21	2001CE22	GAURAV KUMAR	SC	Male
22	2001CE23	GHANTA UTTHISTHA SAI	GEN-EWS	Female
23	2001CE24	HARSH MANGALAM VERMA	OBC-NCL	Male
24	2001CE25	HARSHVARDHAN SINGH	Open	Male
25	2001CE26	HENSHU KUMAR TANWAR	ST	Male
26	2001CE27	HRITIK SINGH	OBC-NCL	Male
27	2001CE28	KAUSHLENDRA SINGH RATHORE	Open	Male
28	2001CE29	KULAKARNI SANKETH	Open	Male
29	2001CE30	KUNDAN THAKUR	GEN-EWS	Male
30	2001CE31	LAKSHYA AGRAWAL	Open	Male
31	2001CE32	LOKESH BAIRWA	SC	Male
32	2001CE33	MADHUR GARG	Open	Male
33	2001CE34	MD FAIZAN ALAM	Open	Male
34	2001CE35	MUKUL	OBC-NCL	Male
35	2001CE36	NIRAJ KUMAR	OBC-NCL	Male
36	2001CE37	NISHTHA SAGAR	SC	Female
37	2001CE38	OM CHOUDHARY	SC	Male
38	2001CE39	OMPRAKASH BAIRWA	SC	Male
39	2001CE40	PADMAJA JOSHI	Open	Female
40	2001CE41	PANKAJ KUMAR PATEL	OBC-NCL	Male
41	2001CE42	PRAGYAN PARAMITA RATH	Open	Female
42	2001CE43	PRATYANSHU PRINCE	ST	Male
43	2001CE45	RAJA BABU	OBC-NCL	Male
44	2001CE46	RAJAN KUMAR	SC	Male
45	2001CE47	RAJAT JAISWAL	OBC-NCL	Male
46	2001CE48	RAJAT JAKHAR	OBC-NCL	Male
47	2001CE49	RAVI RANJAN	SC	Male
48	2001CE50	RITU	OBC-NCL	Female
49	2001CE51	ROHIT BAMBERWAL	SC	Male
50	2001CE52	SAMYAK JAIN	Open	Male
51	2001CE53	SANDEEP CHAHAR	OBC-NCL	Male

Sl. No.	Roll No.	Candidate Name	Category	Gender
52	2001CE54	SARTHAK	Open	Male
53	2001CE55	SHIVAM SHARMA	Open	Male
54	2001CE56	SHREYANSH KUMAR	Open	Male
55	2001CE57	SHRUTI SINGH	OBC-NCL	Female
56	2001CE58	SHUBHAM RAJ	OBC-NCL	Male
57	2001CE59	SIDDHARTH TIWARI	Open	Male
58	2001CE60	TALLAPUDI DIVYA SRI LAKSHMI	Open	Female
59	2001CE61	UDIT SETHI	GEN-EWS	Male
60	2001CE62	VAIBHAV UPADHYAY	Open	Male
61	2001CE63	VANSHIKA	SC	Female
62	2001CE64	VINEET RANJAN MAITREY	SC	Male
63	2001CE65	VIVEK KUMAR SHUKLA	GEN-EWS	Male
64	2001CE66	YASH CHOUDHARY	OBC-NCL	Male

(V) Chemical Engineering:

Sl. No.	Roll No.	Candidate Name	Category	Gender
1	2001CB01	AARYAN DHAKAD	OBC-NCL	Male
2	2001CB02	ABHAY CHAHAR	Open	Male
3	2001CB03	ABHAY PANWAR	OBC-NCL	Male
4	2001CB04	ABHIMANYU SINGH BISHT	Open	Male
5	2001CB05	ADITYA JHA	Open	Male
6	2001CB06	AMRIT KUMAR	OBC-NCL	Male
7	2001CB07	ANAND KUMAR	GEN-EWS	Male
8	2001CB08	ANIKET RAJODIYA	SC	Male
9	2001CB09	ANSHUL MANISH THAKKAR	Open	Male
10	2001CB10	ANURADHA DAS GROUP	SC	Female
11	2001CB11	ARIJIT DAS	SC	Male
12	2001CB13	ASHFAQ AHMED	OBC-NCL	Male
13	2001CB14	ASHISH KUMAR PANDEY	Open	Male
14	2001CB15	ATHARVA	Open	Male
15	2001CB16	ATHUL KRISHNA K	Open	Male
16	2001CB17	AYUSH CHAND	GEN-EWS	Male
17	2001CB18	BHUKYA YASHASWINI	ST	Female
18	2001CB19	CHETAN KUMAR	SC	Male
19	2001CB20	DEVESH PRATAP SINGH	SC	Male
20	2001CB21	GAIKWAD CHANDAN MAHADEO	SC	Male
21	2001CB22	GAURAV	GEN-EWS	Male
22	2001CB23	GAURAV SAROJ	SC	Male
23	2001CB24	GUDE SUSMITHA	OBC-NCL	Female
24	2001CB25	HIZANA D S	OBC-NCL	Female
25	2001CB26	JATIN KUMAWAT	OBC-NCL	Male
26	2001CB27	JAYANT YADAV	OBC-NCL	Male
27	2001CB28	JAYKUMAR GUPTA	Open	Male
28	2001CB29	KAIVALYA GUPTA	Open	Male
29	2001CB30	KALAKOTI HEMASWI	GEN-EWS	Female

Sl. No.	Roll No.	Candidate Name	Category	Gender
30	2001CB31	KAWADE ROHIT CHANDRASHEKHAR	OBC-NCL	Male
31	2001CB32	KHUSHI MILINBHAI SHAH	Open	Female
32	2001CB33	KUMARI ANNU BHATT	OBC-NCL	Female
33	2001CB34	MD FAIAZ ALAM	Open	Male
34	2001CB35	MONU KUMAR	OBC-NCL	Male
35	2001CB36	NAMAN MUDGAL	Open	Male
36	2001CB37	NAVNEET KUMAR CHOUHAN	OBC-NCL	Male
37	2001CB38	PARTH GUPTA	Open	Male
38	2001CB39	PRABHJOT SINGH BHATI	Open	Male
39	2001CB41	PUNEET SHARMA	Open	Male
40	2001CB42	RAHUL KUMAR	OBC-NCL	Male
41	2001CB43	RAKESH KUMAR YADAV	OBC-NCL	Male
42	2001CB44	RANAPANGU UDAY KUMAR	SC	Male
43	2001CB45	ROHIT KUMAR	OBC-NCL	Male
44	2001CB46	SAI NANDAN PANIGRAHY	Open	Male
45	2001CB47	SHAHNAWAZ SIDDIQUE	GEN-EWS	Male
46	2001CB48	SHIVAM SINGHAL	Open	Male
47	2001CB49	SHIVANSH SRIVASTAVA	GEN-EWS	Male
48	2001CB50	SHOAIB RAHMAN	Open	Male
49	2001CB51	SHRISTI AGRAWAL	Open	Female
50	2001CB52	SHUBHAM KUMAR	SC	Male
51	2001CB53	SIDDHARTH GUPTA	Open	Male
52	2001CB54	SIDDHARTH SOMNATH MERUKAR	OBC-NCL	Male
53	2001CB55	SUMIT KUMAR	OBC-NCL	Male
54	2001CB56	SUNNY KUMAR	GEN-EWS	Male
55	2001CB57	SWETA KUMARI	SC	Female
56	2001CB58	SYED SHAHEER TANVEER	Open	Male
57	2001CB59	TOTALA PALAK ARUN	Open	Female
58	2001CB60	UJJWAL ANAND	Open	Male
59	2001CB61	UTKARSH MAHESH PATIL	Open	Male
60	2001CB62	VAJHA VIRAJITHA	Open	Female
61	2001CB64	VISHAL YADAV	OBC-NCL	Male

(VI) Metallurgical and Materials Engineering:

Sl. No.	Roll No.	Candidate Name	Category	Gender
1	2001MM01	ABHINAV MISHRA	Open	Male
2	2001MM03	AMIT RAJ	OBC-NCL	Male
3	2001MM04	ANKUR SAINI	OBC-NCL	Male
4	2001MM05	AYUSH KUMAR	OBC-NCL	Male
5	2001MM07	BHUSHAN MADUSKAR	GEN-EWS	Male
6	2001MM08	BISEN BARKHA BUNENDRA SINH	OBC-NCL	Female
7	2001MM09	CHEEKATI ABHISHEK	OBC-NCL	Male
8	2001MM10	CHIRAG BHARDWAJ	Open	Male
9	2001MM11	D SAI THARUN	SC	Male
10	2001MM12	DEV BAJAJ	Open	Male

Sl. No.	Roll No.	Candidate Name	Category	Gender
11	2001MM13	DEVNA SRIVASTAVA	Open	Female
12	2001MM14	GIDUTURI SHYAM SUNDARA RAO	OBC-NCL	Male
13	2001MM15	HARDIK HARIGOPAL TIWARI	Open	Male
14	2001MM16	HIMANSHI MISHRA	GEN-EWS	Female
15	2001MM18	KAMAL NAYAN	Open	Male
16	2001MM19	KHATANE NISHANT DNYANDEO	Open	Male
17	2001MM20	LAKSHYA	SC	Male
18	2001MM21	MANTARAN SINGH	OBC-NCL	Male
19	2001MM22	PREM KUMAR RANJAN	OBC-NCL	Male
20	2001MM23	PRIYANKA KUMARI	OBC-NCL	Female
21	2001MM24	ROHAN PANKAJ GUPTA	Open	Male
22	2001MM25	ROHIT NAYAK	SC	Male
23	2001MM26	ROHIT SINHA	OBC-NCL	Male
24	2001MM27	RUCHIR MOHAN DEORAJ	SC	Male
25	2001MM28	RUCHIR PORWAL	Open	Male
26	2001MM29	SAHIL MANOJ CHAUDHARI	Open	Male
27	2001MM30	SATVIK SHUKLA	Open	Male
28	2001MM32	SHANTANU SINGH	GEN-EWS	Male
29	2001MM33	SHIVANSHU MISHRA	Open	Male
30	2001MM34	SPANDAN PRASAD SAHU	Open	Male
31	2001MM35	SUBODH KUMAR	SC	Male
32	2001MM37	VANI GROVER	Open	Female
33	2001MM38	VIKASH KUMAR RAI	OBC-NCL	Male
34	2001MM39	VINAY PRATAP	SC	Male

8.1 (B) Admissions to Postgraduate Students (M.Tech)

Admission to M.Tech Courses at IIT Patna were made through GATE performance in July/Aug, 2020. A department / specialization wise and category wise breakup of the

students admitted to IIT Patna for the academic session 2020-21 is given below

Students admitted in M.Tech in 2020-21 in IIT Patna:

Course/Specialization	Category						Grand Total
	GEN	OBC	PD	SC	ST	EWS	
CIVIL ENGINEERING	9	4	0	3	1	2	19
COMMUNICATION SYSTEM ENGINEERING	6	6	0	3	1	2	18
COMPUTER SCIENCE & ENGINEERING	10	6	1	4	2	2	25
MATERIALS SCIENCE & ENGINEERING	6	7	0	2	0	3	18
MATHEMATICS & COMPUTING	8	5	0	3	1	2	19
MECHANICAL ENGINEERING	12	6	0	3	1	1	23
MECHATRONICS	10	5	0	3	2	2	22
VLSI & EMBEDDED SYSTEMS	4	5	0	4	1	1	15
Grand Total	65	44	1	25	9	15	159

Branch-wise list of students who enrolled for M.Tech at IIT Patna for the academic session 2020-21 is given below:

(I) Civil Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	2011CE01	ADITYA KUMAR	Male	General
2	2011CE02	Ajay kumar karn	Male	General
3	2011CE03	AMITESH BAGHEL	Male	General
4	2011CE04	AVADHESH KUMAR	Male	SC
5	2011CE05	AVINASH KUMAR MISHRA	Male	General
6	2011CE06	GYAN PRAVESH	Male	ST
7	2011CE07	KANAHIYA PRASAD	Male	General
8	2011CE08	KRISHLAY KUMAR KESHAV	Male	OBC Non Creamy Layer
9	2011CE09	MAYANK RAJ	Male	OBC Non Creamy Layer
10	2011CE10	PIYUSH KUMAR PANDEY	Male	General
11	2011CE11	PRANAW AMBASTHA	Male	General
12	2011CE12	PUSHRAJ MANDLOI	Male	EWS
13	2011CE13	SAKET KUMAR	Male	General
14	2011CE14	SANJAY KUMAR RAM	Male	SC
15	2011CE15	SHIVENDRA KUMAR MAURYA	Male	OBC Non Creamy Layer
16	2011CE16	SHUBHAM	Male	General
17	2011CE17	SHUBHAM KASHYAP	Male	OBC Non Creamy Layer
18	2011CE18	SOM SHEKHER PRASAD	Male	SC
19	2011CE19	YUVRAJ	Male	EWS

(II) Communication System & Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	2011EE01	ADIREDDY NAGARANI	Female	OBC Non Creamy Layer
2	2011EE02	ADIREDDY VENKATA PAVAN KUMAR REDDY	Male	General
3	2011EE03	ANIL KOTHAPALLI	Male	SC
4	2011EE04	BODA KEERTHI TEJASWINI	Female	OBC Non Creamy Layer
5	2011EE05	JEETENDRA KUMAR	Male	General
6	2011EE06	JENY KHAN	Female	EWS
7	2011EE07	JYOTI AGRAHARI	Male	General
8	2011EE08	NISHU KUMAR	Male	OBC Non Creamy Layer
9	2011EE09	NITISH KUMAR	Male	General
10	2011EE10	PRAVEEN KUMAR	Male	OBC Non Creamy Layer
11	2011EE11	SAI SANDEEP MOOD NAIK	Male	ST
12	2011EE12	SANDHI MONDAL	Male	SC
13	2011EE13	SHIKSHA PANCHESHWAR	Female	OBC Non Creamy Layer
14	2011EE14	SHILPI SAGAR	Female	SC
15	2011EE15	SUBHAM SABUD	Male	EWS
16	2011EE16	UMESH CHANDRA GARJOLA	Male	General
17	2011EE17	VIKASH KUMAR	Male	General
18	2011EE18	VINITA KUMARI	Female	OBC Non Creamy Layer

(III) Computer Science & Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	2011CS01	ATUL	Male	General
2	2011CS02	DAIPAYAN CHAKDER	Male	General
3	2011CS03	DHARMENDRA TIWARI	Male	General
4	2011CS04	DHIRENDRA KUMAR MAURYA	Male	OBC Non Creamy Layer
5	2011CS05	FURQAN Yaqub Khan GUJJAR	Male	ST
6	2011CS06	JETTI PREMKUMAR	Male	SC
7	2011CS07	LALIT	Male	SC
8	2011CS08	MITESH KUMAR	Male	OBC Non Creamy Layer
9	2011CS09	NUTAN KUMARI	Female	OBC Non Creamy Layer
10	2011CS10	PARVA SINGHAL	Male	General
11	2011CS11	PRANAV PRADEEP SHAH	Male	General
12	2011CS12	PRASHANT SHUKLA	Male	General
13	2011CS13	ROHIT KUMAR	Male	EWS
14	2011CS14	SAHIL	Male	SC
15	2011CS15	SANCHIT KUMAR	Male	OBC Non Creamy Layer
16	2011CS16	SATISH KUMAR	Male	OBC Non Creamy Layer
17	2011CS17	SATYA PRAKASH TIWARI	Male	General
18	2011CS18	SHIVANI RANA	Female	ST
19	2011CS19	Shubhechchu Khannal	Male	General
20	2011CS20	SUGATA GHOSH	Male	EWS
21	2011CS21	TANISHA	Female	General
22	2011CS22	UMESH KUMAR	Male	SC
23	2011CS23	VAISHALI JOSHI	Male	General
24	2011CS24	VIKUL KUMAR	Male	OBC Non Creamy Layer/PwD
25	2011CS25	VIVEK KUMAR	Male	OBC Non Creamy Layer

(IV) Materials Science & Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	2011MM01	AAKASH M NAIR	Male	General
2	2011MM02	AJISH BABU	Male	General
3	2011MM03	AKHILESH KUMAR	Male	EWS
4	2011MM04	DEEPAK KUMAR	Male	EWS
5	2011MM05	FAIZ ALI	Male	General
6	2011MM06	GAURAV VAJPAYEE	Male	EWS
7	2011MM07	JEFIN A THACHIL	Male	General
8	2011MM08	KAMLESH KUMAR MIRCHE	Male	SC
9	2011MM09	MANVENDRA KUMAR	Male	General
10	2011MM10	NIRAJ KUMAR	Male	OBC Non Creamy Layer
11	2011MM11	RAVISHANKAR KUMAR	Male	OBC Non Creamy Layer
12	2011MM12	RITESH SINGH	Male	SC
13	2011MM13	RITU KUMARI	Female	OBC Non Creamy Layer
14	2011MM14	SABYASACHI PANDA	Male	General

Sl No.	Roll No	Name of Candidate	Gender	Category
15	2011MM15	SAIF AHAMAD	Male	OBC Non Creamy Layer
16	2011MM16	SHUBHENDRA SHIVAM MAURYA	Male	OBC Non Creamy Layer
17	2011MM17	SUDHA KUMARI	Female	OBC Non Creamy Layer
18	2011MM18	VISHAL KUMAR GUPTA	Male	OBC Non Creamy Layer

(V) Mathematics & Computing:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	2011MC01	ABHRA DEV BORAL	Male	SC
2	2011MC02	AMAR PANDEY	Male	EWS
3	2011MC03	ATUL VERMA	Male	EWS
4	2011MC04	AVINASH SINGH	Male	OBC Non Creamy Layer
5	2011MC05	BADAVATH SHRAVAN NAIK	Male	ST
6	2011MC06	MADHU DWIVEDI	Female	General
7	2011MC07	MOHIT KUMAR	Male	OBC Non Creamy Layer
8	2011MC08	PANKAJ CHAHAL	Male	SC
9	2011MC09	RAJNISH PATEL	Male	OBC Non Creamy Layer
10	2011MC10	SANJAY KUMAR	Male	General
11	2011MC11	SAURABH SUNIL KATKAR	Male	OBC Non Creamy Layer
12	2011MC12	SHIVAM KUMAR	Male	OBC Non Creamy Layer
13	2011MC13	SNIGDHA BARDHAN	Female	General
14	2011MC14	SOURAJIT MUKHERJEE	Male	General
15	2011MC15	SUFAL SIKDER	Male	SC
16	2011MC16	TANMAY SANTRA	Male	General
17	2011MC17	VISHAL SINGH ROHA	Male	General
18	2011MC18	PRAFUL KUMAR	Male	General
19	2011MC19	TAMA RAY CHOWDHURY	Female	General

VI) Mechanical Engineering:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	2011ME01	ABHISHEK GUPTA	Male	General
2	2011ME02	ABHISHEK RAJ	Male	OBC Non Creamy Layer
3	2011ME03	Anmol Tripathi	Male	General
4	2011ME04	DEEPAK KUMAR	Male	SC
5	2011ME05	DHARMENDRA KUMAR	Male	OBC Non Creamy Layer
6	2011ME06	VIVEK KUMAR	Male	EWS
7	2011ME07	YASHRAJ ASTHANA	Male	General
8	2011ME08	ABHISHEK SIKKA	Male	General
9	2011ME09	AKSHAY KUMAR TIWARI	Male	General
10	2011ME10	ANAMITRA PHUKAN	Male	General
11	2011ME11	ASHOK DAS	Male	SC
12	2011ME12	BIBHRAT ROY	Male	OBC Non Creamy Layer
13	2011ME13	GAURAV TEJRAM DHABARDE	Male	SC
14	2011ME14	HIMANSHU JOSHI	Male	General
15	2011ME15	MONISHA DAIMARI	Female	ST
16	2011ME16	PIYUSH PRIYADARSHI	Male	General

SI No.	Roll No	Name of Candidate	Gender	Category
17	2011ME17	RASHMI PRIYA	Female	OBC Non Creamy Layer
18	2011ME18	RATNESH KUMAR	Male	OBC Non Creamy Layer
19	2011ME19	RAVIKANT KUMAR	Male	General
20	2011ME20	SHIVAM SINGH	Male	General
21	2011ME21	SHUBHAM KUMAR	Male	General
22	2011ME22	VICKY KUMAR	Male	OBC Non Creamy Layer
23	2011ME23	AMBUJ RAI	Male	General

(VII) Mechatronics:

SI No.	Roll No	Name of Candidate	Gender	Category
1	2011MT01	ABHISHEK SINGH	Male	General
2	2011MT02	ADITYA SHAH	Male	General
3	2011MT03	AJAYAN	Male	General
4	2011MT04	AKASH GUPTA	Male	General
5	2011MT05	AKSHAY CHAUDHARY	Male	General
6	2011MT06	Alok Kumar Arya	Male	General
7	2011MT07	ARUSHI KUMAR PRAKASH	Male	OBC Non Creamy Layer
8	2011MT08	ASHUTOSH KUMAR TRIVEDI	Male	General
9	2011MT09	DARSHAN KUMAR DAS	Male	SC
10	2011MT10	DURGESH VIKRAM YADAV	Male	OBC Non Creamy Layer
11	2011MT11	MANOHAR KUMAR	Male	OBC Non Creamy Layer
12	2011MT12	NINAD PRADEEP KUWARE	Male	General
13	2011MT13	PIYUSH KUMAR	Male	SC
14	2011MT14	PRIYESH DIPANK HEMROM	Male	ST
15	2011MT15	RITESH KUMAR SINGH	Male	General
16	2011MT16	ROMIT RAJ	Male	OBC Non Creamy Layer
17	2011MT17	SANTAN SUMAN	Male	General
18	2011MT18	SHUBHAM NILKANTH WASNIK	Male	SC
19	2011MT19	SHUBHRANSHU RANJAN SHARMA	Male	ST
20	2011MT20	SHUKLA ADITYA MANISHBHAI	Male	EWS
21	2011MT21	SONU KUMAR	Male	OBC Non Creamy Layer
22	2011MT22	VIPIN GUPTA	Male	EWS

(VIII) VLSI & Embedded Systems:

SI No.	Roll No	Name of Candidate	Gender	Category
1	2011EE19	Abhinav Himant	Male	OBC Non Creamy Layer
2	2011EE20	ACHIN ANU	Male	OBC Non Creamy Layer
3	2011EE21	AMIYA BISOI	Male	OBC Non Creamy Layer
4	2011EE22	ANU PRABHAKAR	Male	General
5	2011EE23	CHANDAN KUMAR	Male	SC
6	2011EE24	GAUTAM KUMAR	Male	OBC Non Creamy Layer
7	2011EE25	HARSHIT KUMAR PATNAIK	Male	EWS
8	2011EE26	KESHAV KUMAR	Male	General
9	2011EE27	NIVEDITA MOHAN	Female	General
10	2011EE28	SHASHANK RAJ	Male	SC

Sl No.	Roll No	Name of Candidate	Gender	Category
11	2011EE29	SHUBHAM	Male	ST
12	2011EE30	SIDDHARTH PAL	Male	SC
13	2011EE31	SUNIL KUMAR	Male	SC
14	2011EE32	VED PRAKASH PANDEY	Male	General
15	2011EE33	NAMAN KUMAR VERMA	Male	OBC Non Creamy Layer

Statement of Results (Post Graduate)

(A) Following table shows the summary of the results of the Post Graduate students (M.Tech.) at IIT Patna in the FY 2020-21 (up to end semester examination Dec. 2020):

Years		Civil & Infrastructure Engineering	Computer Science & Engineering	Communication System Engineering	Mathematics & Computing	Engineering	Materials Science & Engineering	Mechatronics	Nanoscience & Technology	VLSI & Embedded Systems	All. Dept.
1st Year	Total	19	25	18	19	23	18	22	0	15	159
	Pass	15	17	17	16	19	16	19	0	10	129
	Fail/ Incomplete	4	8	1	3	4	2	3	0	5	30
2nd Year	Total	16	13	12	14	16	14	12	0	10	107
	Pass	11	13	11	14	14	13	12	0	10	98
	Fail/ Incomplete	5	0	1	0	2	1	0	0	0	09
All Years (Registered)	Total	35	38	30	33	39	32	34	0	25	266
	(Registered)	26	30	28	30	33	29	31	0	20	227
		9	8	2	3	6	3	3	0	5	39
On Leave/Not Registere		00	00	00	00	00	00	00	00	00	00

Fail means one or more subject failure or CPI less than 6.0

(B) Following table shows the summary of the results of the Post graduate students (M.Sc.) at IIT Patna in the FY2020-21 (up to end semester examination Dec, 2020):

Years		Mathematics	Physics	Chemistry	All Dept.
1st Year	Total	24	24	23	71
	Pass	22	23	22	67
	Fail/ Incomplete	2	1	1	4
2nd Year	Total			17	52
	Pass	18	17	14	49
	Fail/ Incomplete	0	0	3	3
On Leave/Not Registered		0	0	0	0
Grand Total		42	41	40	123

8.1 (C) Admission to Postgraduate Students (M.Sc.)

Admission to M.Sc. Courses at IIT Patna were made through JAM score in June/July, 2020. A department wise and category wise breakup of the students admitted to IIT Patna for the academic session 2020-21 is given below:

Students admitted in M.Sc. in 2020-21 in IIT Patna:

Course/Specialization	Category						Grand Total
	GEN	EWS	OBC	PD	SC	ST	
MATHEMATICS	9	3	7	0	3	2	24
PHYSICS	11	3	5	0	3	2	24
CHEMISTRY	8	4	6	0	4	1	23
Grand Total	28	10	18	0	10	5	71

Branch-wise list of students who enrolled for M.Sc. at IIT Patna for the academic session 2019-20 is given below:

(I) MATHEMATICS:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	2012MA01	ADITYA DEO OJHA	Male	GEN
2	2012MA02	AGILAN AMIRTHALINGAM	Male	OBC
3	2012MA03	AJAY KUMAR	Male	GEN
4	2012MA04	ALAPAN GHOSH	Male	GEN
5	2012MA05	ANU KUMARI	Female	OBC
6	2012MA06	BHABATOSH KANUNGO	Male	GEN
7	2012MA07	DINESH KHATI	Male	SC
8	2012MA08	KASHYAP RABHA	Male	ST
9	2012MA09	KUNDAN KUMAR	Male	EWS
10	2012MA10	MANE VISHAL ABHIMANYU	Male	OBC
11	2012MA11	MAYANK KASHYAP	Male	GEN
12	2012MA12	NARAYAN BISWAS	Male	SC
13	2012MA13	NIRAJ KUMAR	Male	OBC
14	2012MA14	SAJAL DEBNATH	Male	OBC
15	2012MA15	SANDESH KUMAR	Male	EWS
16	2012MA16	SATISH KUMAR	Male	OBC
17	2012MA17	SEKH KIRAN AJIJ	Male	GEN
18	2012MA18	SUBHAM PODDAR	Male	GEN
19	2012MA19	SUMAN BASAK	Male	OBC
20	2012MA20	SUMAN BISWAS	Male	SC
21	2012MA21	TANAY RAJ	Male	GEN
22	2012MA22	VIVEK SINGH	Male	EWS
23	2012MA23	ZABIR HUSSAIN	Male	ST
24	2012MA24	MANMOHAN SAHU	Male	GEN

(II) PHYSICS:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	2012PH01	AISHI BARUA	Female	ST
2	2012PH02	AMAN SAXENA	Male	GEN
3	2012PH03	ANMOL SUBBA	Male	ST
4	2012PH04	ARGHYA JANA	Male	GEN

Sl No.	Roll No	Name of Candidate	Gender	Category
5	2012PH05	ARYA KUMAR SIDDHARTH	Male	GEN
6	2012PH06	ASHOK KUMAR SAINI	Male	OBC
7	2012PH07	JASHWANTH S	Male	GEN
8	2012PH08	MANISH KUMAR	Male	EWS
9	2012PH09	MOHIT MITTAL	Male	GEN
10	2012PH10	NEEL SUNIL VADODARIA	Male	GEN
11	2012PH11	NITIN NAYAK	Male	OBC
12	2012PH12	PIYAS DAS	Male	SC
13	2012PH13	PRADYUMNA GUPTA	Male	GEN
14	2012PH14	PROJUKTA DAS	Female	GEN
15	2012PH15	RITU RAJ	Male	OBC
16	2012PH16	ROSHAN SINGH	Male	EWS
17	2012PH17	SHUBHAM KUMAR	Male	OBC
18	2012PH18	SONU KUMAR RAO	Male	SC
19	2012PH19	SUNIL KUMAR	Male	EWS
20	2012PH20	SWATI SINGH	Female	GEN
21	2012PH21	TERSE PRANIT VIJAY	Male	GEN
22	2012PH22	UTSAV	Male	OBC
23	2012PH23	SHRESTHA GHOSH	Male	GEN
24	2012PH24	GULVEER DOSODIYA	Male	SC

(III) CHEMISTRY:

Sl No.	Roll No	Name of Candidate	Gender	Category
1	2012CH01	ABHISHEK KUMAR	Male	OBC
2	2012CH02	AFTAB UDDIN MOLLAH	Male	OBC
3	2012CH03	ANKITA CHAKRABORTY	Female	GEN
4	2012CH04	DALI BARMAN	Female	SC
5	2012CH05	JYOTI LALBAHADUR VISHWAKARMA	Female	OBC
6	2012CH06	LALIT KUMAR PANDEY	Male	EWS
7	2012CH07	PRAGYA SAHU	Female	OBC
8	2012CH08	PRINCE	Male	EWS
9	2012CH09	PRIYANSHU SINGH	Male	EWS
10	2012CH10	RAKHI MAJI	Female	SC
11	2012CH11	ROUNAK RANJIT	Male	SC
12	2012CH12	SIBNATH ROY PRAMANIK	Male	SC
13	2012CH13	SK SAKIR HOSSAIN	Male	OBC
14	2012CH14	SOHOM CHANDRA	Male	GEN
15	2012CH15	SUBIMAL PATRA	Male	GEN
16	2012CH16	SUMITKUMAR VINAY PANDEY	Male	GEN
17	2012CH17	SUPRIYA PATHAK	Female	GEN
18	2012CH18	SURAVI DAS	Female	GEN
19	2012CH19	SURESH TIWARI	Male	EWS
20	2012CH20	TANIMA PAL	Female	OBC
21	2012CH21	DARSHIKA SINGH	Female	GEN
22	2012CH22	GANESH KUMAR YADAV	Male	GEN
23	2012CH23	HEMALAKHI DEORI	Female	ST

8.2 Students Enrolled in Undergraduate Courses

The Table below gives the total number of students in B.Tech. course (Upto 31.3.2021):

Batch	Gen	OBC	ST	SC	PD	EWS	Total
2016	1	0	0	0	0	0	1
2017	1	1	0	2	0	0	4
2018	134	63	13	32	2	0	244
2019	165	89	24	51	1	6	336
2020	151	112	23	62	4	43	395

8.3 Statement of Results (Undergraduate)

Following table shows the summary of the results of the undergraduate students at IIT Patna in the year April 2020 to March 2021 (upto end semester examination Dec, 2020):

Years		CSE	EE	ME	CE	CB	MME	All Dept.
4th Year	Total	61	59	50	25	24	0	219
	Pass	60	56	50	25	24	0	215
	Fail	1	3	0	0	0	0	4
3rd Year	Total	69	63	59	29	24	0	244
	Pass	68	62	59	29	23	0	241
	Fail	1	1	0	0	1	0	3
2nd Year	Total	78	75	62	48	45	28	336
	Pass	77	72	56	45	40	24	314
	Fail	1	3	6	3	5	4	22
1st Year	Total	80	78	80	64	60	33	395
	Pass	80	78	78	62	60	33	391
	Fail	0	0	2	2	0	0	4
All Years	Total	288	275	251	166	153	61	1194
	(Registered)	285	268	243	161	147	57	1161
	Fail	3	7	8	5	6	4	33
On Leave/ Not Registered	0	0	0	0	0	0	0	0

Fail means one or more subject failure or CPI less than 05.

8.4 List of Research Scholars Enrolled for the PhD Degree

The table below represents the number of research scholars in various departments as on 31.03.2019

Year of admission	SCHOOLS										TOTAL
	SCHOOL OF ENGINEERING						SCHOOL OF BASIC SCIENCES			SCHOOL OF HUMANITIES AND SOCIAL SCIENCES	
	CBE	CEE	CSE	EE	ME	MME	CHE	MA	PHY	HSS	
2011-12	0	0	2	0	0	0	0	0	0	0	2
2012-13	0	0	0	0	0	0	0	0	0	1	1
2013-14	0	0	4	3	0	0	0	0	0	2	9
2014-15	0	1	2	10	5	0	0	4	2	0	24
2015-16	3	3	14	7	9	2	7	8	4	6	63

Year of admission	SCHOOLS										TOTAL
	SCHOOL OF ENGINEERING						SCHOOL OF BASIC SCIENCES			SCHOOL OF HUMANITIES AND SOCIAL SCIENCES	
2016-17	2	5	12	17	21	0	7	5	16	10	95
2017-18	3	5	9	10	10	3	8	8	9	8	73
2018-19	3	9	23	20	17	4	12	5	16	15	124
2019-20	3	8	26	15	10	5	12	9	10	8	106
2020-21	11	24	38	32	29	12	11	18	23	16	214
TOTAL	25	55	130	114	101	26	57	57	80	66	711

List of Research Scholars Enrolled in Academic Year 2020-21

Sl No	Name of Student	Roll No.
1	AARUSHI RUHELA	2021CB04
2	MD ALQUMA HAIDER	2021CB09
3	MD TABREZ ALAM	2021CB13
4	SHASHI PRAKASH GUPTA	2021CB14
5	ABHISHEK TARUN	2021CE04
6	AHMAD RASHIQ	2021CE05
7	AJIT KUMAR	2021CE06
8	ANUSHA VISHWAKARMA	2021CE08
9	BYOMKESH MAHANTY	2021CE10
10	NITISH JAUHARI	2021CE15
11	SAYANDIP GANGULY	2021CE19
12	SHAIENDRA KUMAR SINGH	2021CE20
13	SONALI UPADHYAYA	2021CE21
14	THY TRUC DOAN	2021CE22
15	AJEET KUMAR	2021CE23
16	MD NAQUIB ALAM	2021CE24
17	SAURABH SHUKLA	2021CE25
18	SHAILESH KUMAR YADAV	2021CE26
19	SOMDUTTA	2021CE27
20	AMIT KUMAR DEY	2021CH03
21	ANJALI	2021CH04
22	BISWARANJAN SAHOO	2021CH05
23	NISHA NANDI	2021CH06
24	RAVI SHANKAR	2021CH09
25	ANIRBAN SAHA	2021CS13
26	KOMAL GUPTA	2021CS16
27	KOMALBEN SHARADKUMAR PANDYA	2021CS17
28	KRISHANU MAITY	2021CS19
29	MANOJ KUMAR BALWANT	2021CS20
30	NARENDRA SINGH LODHI	2021CS21
31	NASEEM BABU	2021CS22

Sl No	Name of Student	Roll No.
32	NIMESH KUMAR	2021CS23
33	PRANAB SAHOO	2021CS25
34	PRIYANSHU PRIYA	2021CS26
35	SANDEEP KUMAR PATEL	2021CS28
36	SAURABH MISHRA	2021CS29
37	SAURABH SHARMA	2021CS30
38	SHRUTI SAXENA	2021CS31
39	SMEGNEW ASEMIE	2021CS32
40	SOUMYAJIT NAG	2021CS34
41	SUJIT CHOWDHURY	2021CS35
42	SURBHI RAJ	2021CS36
43	VED PRAKASH SINGH	2021CS37
44	SRISHTI GUPTA	2021CS38
45	KUMARI AKANKSHA	2021CS39
46	AJAY KUMAR	2021EE09
47	ALLU RAVITEJA	2021EE10
48	ANKIT KUMAR	2021EE11
49	ASHISH	2021EE12
50	ASHRAF MANIYAR	2021EE13
51	CHALLA RAMA GOPAL	2021EE14
52	KINJARAPU MANOJKUMAR	2021EE17
53	MANJIT SINGH	2021EE19
54	NILPA KUMARI	2021EE22
55	PADALA BHASKARA RAO	2021EE23
56	PIYALI PAL	2021EE24
57	RAUSHAN KUMAR	2021EE27
58	SHIVANI SINGH	2021EE32
59	SIMMI PERVEEN	2021EE34
60	AKANKSHA GUPTA	2021EE35
61	CHRIS BASTIAN TOM	2021HS06
62	DEBASHRITA DEY	2021HS07
63	PUJA KRISHNA	2021HS08
64	SATYAM KUMAR	2021HS09
65	SAURAV	2021HS10
66	SHAMBHAVI PRIYA	2021HS11
67	ANOOT KUMAR YADAV	2021MA06
68	ANUJ KUMAR UMRAO	2021MA07
69	ARNAV GHOSH	2021MA09
70	ASHNA GOEL	2021MA10
71	DEBOJYOTI BHATTACHARYA	2021MA11
72	KUNDAN SINGH	2021MA12
73	PALLAVEE GUPTA	2021MA15
74	PRAKASH CHANDRA	2021MA16
75	RISHABH SHARMA	2021MA18
76	RUPESH PANDEY	2021MA20

Sl No	Name of Student	Roll No.
77	SK AZIZ	2021MA22
78	SONU	2021MA23
79	SUBHAM PAUL	2021MA25
80	ANANG KATYAYAN	2021ME05
81	BITTU KUMAR SINGH	2021ME07
82	HARSH KUMAR	2021ME08
83	KUNDAN KUMAR	2021ME09
84	PRITAM OJHA	2021ME12
85	SATYENDRA R. NISHAD	2021ME13
86	SAURABH SAGAR	2021ME14
87	SYED AHSAN HAIDER	2021ME17
88	VIVEK KUMAR	2021ME18
89	VIVEK KUMAR	2021ME19
90	ANOOOP KUMAR SHUKLA	2021ME20
91	KUMAR AMIT	2021ME21
92	ROHIT KUMAR	2021ME22
93	AKSHAY KUMAR CHATURVEDI	2021MM03
94	ANNU KUMAR LAKSHYA	2021MM04
95	GORBEL B	2021MM05
96	PRABIR MAITY	2021MM07
97	RAGHAV MUNDRA	2021MM08
98	SABYASACHI SHIT	2021MM09
99	EKTA KUMARI	2021MM12
100	ARPITA ROY	2021PH08
101	BABAJI CHARAN SAHOO	2021PH10
102	DIMPAL KUMARI	2021PH14
103	MUKESH KUMAR YADAV	2021PH20
104	PRADOSH BASU	2021PH23
105	SAURAV KUMAR	2021PH29
106	SUSHREE NIBEDITA ROUT	2021PH31
107	TOWHIDUR RAHAMAN	2021PH32
108	RASMI RANJAN MOHAPATRA	2021PH33
109	RAJ KUMAR DAS	2021PH34
110	SAMAYUN SAIKH	2021PH35
111	MOHD YASIR ARAFAT	2021PH36
112	ANINDITA SAHA	2121CB02
113	RAJESH KUMAR	2121CB07
114	SWASTI MEDHA	2121CB08
115	VINEETA SINGH	2121CB09
116	SUNANDINI SWAIN	2121CB10
117	SANA PERWEEN	2121CB11
118	SHYAMAL KISHORE KUMAR	2121CB12
119	ATIF HUSSAIN	2121CE01
120	DEBOJYOTI PAUL	2121CE02
121	GAURAV KUMAR MATHUR	2121CE03

SI No	Name of Student	Roll No.
122	KANDALA VENKATA SHIVA PRASAD	2121CE05
123	LOKESH SHARAN SRIVASTAVA	2121CE07
124	NARAMSETTI BHARGAV SAI	2121CE08
125	PRIYAM MISHRA	2121CE10
126	ABHINAV ANAND	2121CE15
127	ANKIT KUMAR KUSHWAHA	2121CE16
128	ANUJ TAK	2121CH01
129	ASHOK BARHOI	2121CH02
130	HARVEER SINGH	2121CH03
131	SAKSHAM MISHRA	2121CH05
132	GOLAM ROSUL KHAN	2121CH08
133	ARNAB PATLA	2121CH09
134	ASWINI GHOSH	2121CS02
135	MD TAUSEEF ALAM	2121CS04
136	MEDHASREE GHOSH	2121CS05
137	NEHA PRAMANICK	2121CS06
138	NELSON SHARMA	2121CS07
139	PRIYA RANJAN DAS	2121CS08
140	PROKASH GHOSH	2121CS09
141	RAHUL KUMAR	2121CS10
142	RISHI RAJ	2121CS12
143	SHUBHAM	2121CS13
144	SOUHITYA CHAKRABORTY	2121CS14
145	SUDHIR KUMAR	2121CS16
146	TAWQEER UL ISLAM	2121CS17
147	DEBASMITA MANNA	2121CS18
148	ASRES TEMAM ABAGISSA	2121CS19
149	MINYECHIL ALEHEGN TEFERA	2121CS20
150	TIBEBU BEKEL SHANA	2121CS21
151	ABHISHEK ANAND	2121EE01
152	ABHISHEK KUMAR RANJAN	2121EE02
153	ADITYA KUMAR	2121EE03
154	JAFFAR ALI LONE	2121EE06
155	MANOJ KUMAR	2121EE08
156	NAMBALA RAMSAI	2121EE09
157	PRAGATI PATHARIA	2121EE10
158	PRAKHAR KUMAR SONKAR	2121EE11
159	PRIYESH KUMAR	2121EE12
160	SAI SHIROV KATTA	2121EE14
161	SHREYA DAS	2121EE15
162	SUBIR DAS	2121EE16
163	SWATI PRIYA	2121EE17
164	TAPASWINI BISWAL	2121EE18
165	VIKASH KUMAR SINGH	2121EE19
166	SUSHANT KUMAR JHA	2121EE20

Sl No	Name of Student	Roll No.
167	VIVEK PRATAP SINGH	2121EE21
168	BIRENDRA BHUJEL	2121HS01
169	DEBRAJ GOGOI	2121HS02
170	DHANYA V SANKAR	2121HS03
171	HILAL AHMAD RESHI	2121HS04
172	MOUMITA BALA	2121HS05
173	NAVIN SHARMA	2121HS06
174	NILANJANA GUPTA	2121HS07
175	PRITHVI RAJ	2121HS08
176	SUBHASREE GHATAK	2121HS11
177	VINOD KUMAR	2121HS13
178	KAUSTAV CHATTERJEE	2121MA03
179	LOK NATH KANNAUJIYA	2121MA04
180	SHASHANK PANDEY	2121MA07
181	SUMIT KUMAR	2121MA08
182	SUSHIL KUMAR TIWARI	2121MA09
183	ABHASH SHUKLA	2121ME01
184	AKHILESH KUMAR TIWARI	2121ME02
185	HARSHDEEP SHARMA	2121ME06
186	KAPIL KUMAR GUPTA	2121ME07
187	KRISHNA VEER SINGH GURJAR	2121ME08
188	MD SHADAB HASAN	2121ME09
189	MOHIT SHARMA	2121ME10
190	RAJNISH MISHRA	2121ME11
191	RAKESH KUMAR SINGH	2121ME12
192	RASHI ADITI RANJAN	2121ME13
193	RENU TEWARI	2121ME14
194	SAURABH CHAUHAN	2121ME16
195	SAURABH KUMAR	2121ME17
196	SURYA PRAKASH SINGH	2121ME18
197	YUVARAJ DEEPAK KAMBLE	2121ME19
198	ANKUR AGRAWAL	2121ME20
199	JEJITTI ARAVIND REDDY	2121MM01
200	KRISHNAPPAGARI VIJAY KUMAR	2121MM02
201	ROHIT RAJ	2121MM03
202	SHOVAN BISWAS	2121MM04
203	PATLOLLA SAIKIRAN GOUD	2121MM05
204	AISWARYA R	2121PH01
205	ALLARAKHA SHIKDER	2121PH02
206	ASHUTOSH SINGH	2121PH03
207	KHASHTI DATT PANDEY	2121PH05
208	MOBASSIR AHMAD	2121PH06
209	PRATICK SARKAR	2121PH07
210	RAHUL KUMAR SAHA	2121PH08
211	SAMBIT KUMAR BISWAL	2121PH09

Sl No	Name of Student	Roll No.
212	SRIGANAPATHY RAGHAV RV	2121PH13
213	TUPAN DAS	2121PH14
214	RAKESH KUMAR	2121PH15

8.5 Merit-Cum-Means (MCM) Scholarship

The Institute provided MCM scholarships as per the following details:

YEAR	General + OBC	SC	ST
2016-17	147	19	10
2017-18	159	17	6
2018-19	115	14	6
2019-20	110	12	4
2020-21	128	13	5

The following students were selected for the award of the Merit-Cum-Means (MCM) scholarship in the academic year 2020-21 by the Institute:

Sl. No.	Name	Roll No.
1	Pranshu Chandani	1701CB19
2	Priyansh Singh Rao	1701CB21
3	Rohit Kumar	1701CB23
4	Vivek Garg	1701CB27
5	Jagdish Kumar	1701CE10
6	Kaushal Kumar Jangir	1701CE11
7	Pawan Tiwari	1701CE18
8	Rakshit Maheshwari	1701CE21
9	Yash Rawal	1701CE28
10	Diksha Bansal	1701CS19
11	Gopugari Badrinath Reddy	1701CS22
12	Rahul Kumar	1701CS37
13	Ritu Raj	1701CS40
14	Sheetal Gupta	1701CS45
15	Sunny Singh	1701CS50
16	Vatsal Singhal	1701CS52
17	Vijigiri Vrushank Varma	1701CS53
18	Umang Jain	1701CS56
19	Sachin Pandey	1701CS61
20	Aniket Kumar	1701EE08
21	Madhav Manish	1701EE19
22	Md. Azam	1701EE21
23	Rachumallu Yaswant	1701EE34
24	Sumit Sourabh	1701EE48
25	Vikram Patel	1701EE55
26	Saurabh Gupta	1701EE59
27	Himanshu Gupta	1701EE61
28	Abhishek Kumar	1701ME02
29	Aman Mishra	1701ME05

Sl. No.	Name	Roll No.
30	Patil Vaibhav Rajaram	1701ME27
31	Ritesh Kumar	1701ME33
32	Saif Ahmad	1701ME39
33	Shashank Shreyaskar	1701ME41
34	Shreyas Sanjay Taware	1701ME43
35	Sudhir Yadav	1701ME47
36	Tejas Goyal	1701ME49
37	Rakesh Kumar	1801CB19
38	Shubham Kumar	1801CB23
39	Bhavanam Jaya Trivikram Reddy	1801CE05
40	Ketan Kumar Sinha	1801CE14
41	Rajveer Tholiya	1801CE26
42	Roopesh Pal	1801CE28
43	Shashank Kumar	1801CE29
44	Aryan Kothari	1801CS10
45	Ayush Pandey	1801CS11
46	Balbeer Yadav	1801CS13
47	Sai Rohan Basa	1801CS14
48	Dacharla Venkata Rao	1801CS18
49	Kundarapu Harshvardhan	1801CS29
50	Musukula Nitesh Reddy	1801CS32
51	Roshan Kumar	1801CS40
52	Sawan Kumar	1801CS45
53	Saksham Jha	1801CS64
54	Abhay Singh	1801CS66
55	Aviral Agrawal	1801EE16
56	Jay Kabra	1801EE20
57	Pandranki Kiran	1801EE29
58	Pappu Siva Kumar	1801EE30
59	Roshan Kumar	1801EE38
60	Rishab Agarwal	1801EE40
61	Rohit Kumar	1801EE43
62	Satyam Kumar	1801EE48
63	Shivani Dixit	1801EE50
64	Abdul Wahid	1801ME01
65	Abhishek Kumar Singh	1801ME03
66	Akshat Jain	1801ME05
67	Anand Kishore	1801ME10
68	Ashutosh Maurya	1801ME16
69	Durgesh Singh	1801ME22
70	M. Jagan Mohan Chowdary	1801ME34
71	Neeraj Kumar Gond	1801ME38
72	Nemalikanti V M Dheeraj	1801ME39
73	Arohan Panda	1801ME41
74	Rishi Kumar	1801ME50

Sl. No.	Name	Roll No.
75	Janjirala Abhiram	1901CB20
76	Satyam Kumar Thakur	1901CB45
77	Suraj Shashi Chettiar	1901CB53
78	Vishwaranjan Kumar Jha	1901CB55
79	Hardik Arora	1901CE15
80	Lokesh Kumar Singh	1901CE21
81	Mandavyapuram Harika	1901CE24
82	Shyam Sundar	1901CE48
83	Suresh Sahu	1901CE52
84	Utkarsh Dubey	1901CE54
85	Venkatreddolla Abhilash Reddy	1901CE56
86	Shivam Sahu	1901CS55
87	Akshat Porwal	1901EE09
88	Gangireddy Gangadhara Reddy	1901EE23
89	Gaurav Rai	1901EE24
90	M.D. Midhun Reddy	1901EE34
91	Madhur Jain	1901EE35
92	Rohan Kumar	1901EE48
93	Saurav Kumar	1901EE54
94	Shivam Singh Keshwah	1901EE55
95	Vishal	1901EE68
96	Utkarsh Pathak	1901EE69
97	Abhishek Kumar Jha	1901ME03
98	Ganesh Kumar	1901ME23
99	R. Suganth	1901ME61
100	Abhay Tiwari	1901MM01
101	Keshav Kumar Jha	1901MM18
102	Romica Jain	1912CH14
103	Shubham Sinha	1912CH17
104	Bishal Biswas	1912MA03
105	Dolan Samanta	1912MA05
106	Km Deepanshi Singh	1912MA07
107	Priya Siddharth	1912MA13
108	Shivani Sain	1912MA19
109	Vikash Kumar Jagriya	1912MA21
110	Mouli Mazumdar	1912PH09
111	Prateek Kumar Singh	1912PH12
112	Rajat Aggarwal	1912PH13
113	Rajendra Kumar Meena	1912PH14
114	Ashfaq Ahmed	2001CB13
115	Gaurav	2001CB22
116	Kalakoti Hemaswi	2001CB30
117	Kawade Rohit Chandrashekhar	2001CB31
118	Sweta Kumari	2001CB57
119	Kaushlendra Singh Rathore	2001CE28

Sl. No.	Name	Roll No.
120	Sandeep Chahar	2001CE53
121	Atul Kumar	2001CS13
122	Kaushal Raj	2001CS36
123	Dashrath Paswan	2001EE14
124	Priya Raj	2001EE46
125	Sanju Kumar	2001EE62
126	Suyog Vinod Choudhari	2001EE77
127	Pushpanjay	2001ME57
128	Aftab Uddin Mollah	2012CH02
129	Dali Barman	2012CH04
130	Jyoti Vishwakarma	2012CH05
131	Sibnath Roy Pramanik	2012CH12
132	Sk Sakir Hossain	2012CH13
133	Subimal Patra	2012CH15
134	Ganesh Kumar Yadav	2012CH22
135	Bhabatosh Kanungo	2012MA06
136	Kashyap Rabha	2012MA08
137	Narayan Biswas	2012MA12
138	Sajal Debnath	2012MA14
139	Sandesh Kumar	2012MA15
140	Satish Kumar	2012MA16
141	Suman Basak	2012MA19
142	Suman Biswas	2012MA20
143	Vivek Singh	2012MA22
144	Zabir Hussain	2012MA23
145	Ashok Kumar Saini	2012PH06
146	Gulveer Dosodiya	2012PH24

Infrastructure Development at IIT Patna

Phase-II:

Phase-II construction includes library, student activity center, auditorium and academic and residential buildings for students, faculty and staff. The projects are being constructed under CPWD. The detailed list of ongoing projects in Phase-II is as follows:

- 1) Academic Buildings, G+5, 2 numbers
- 2) Workshops, 3 numbers.
- 3) Central Lecture hall
- 4) Central Library
- 5) Guest House, G+2
- 6) Girls Hostel for 232 students capacity
- 7) Boys Hostel for 950 students capacity
- 8) Auditorium, 1000 sitting capacity
- 9) A type Quarters, G+8, 27 units
- 10) B type Quarters, G+8, 36 units
- 11) C Type Quarters, G+6, 56 units
- 12) D type Quarters, G+3, 48units
- 13) Married Accommodations, G+5, 36 Numbers
- 14) Students activity center balance part
- 15) Services like substation, street lighting, WTP, STP, Firefighting system, water supply distribution network etc.

Constructions of workshop and D-type quarter buildings (3 Nos) are completed. In rest of the Phase-II construction buildings, RCC work is mostly completed and finishing is in progress. The overall progress up to March 2021 is 65%.



Workshop buildings completed



D-type buildings completed



Girls Hostel: Landscape work in progress



Guest House Building: Finishing work in progress



C Type Building: Finishing work in progress



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