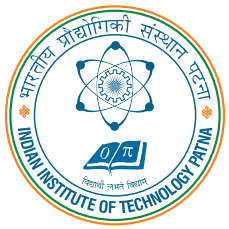
वार्षिक प्रतिवेदन
ANNUAL REPORT
2017-2018

भारतीय प्रौद्योगिकी संस्थान पटना
INDIAN INSTITUTE OF TECHNOLOGY PATNA



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Contents

From the Director

IIT Patna is in its decennial year now and has spent 3 fruitful years in its permanent campus in Bihta. The institute is witnessing growth in all sectors- construction, laboratory development, new academic curricula, recruitment, and increased student intake and so on. Ours is one of the fastest growing institutes of excellence.

The annual report is an account of institute's activities and attainments in the year that passed with pointers to the way forward. A highlight of the last year is the good position of 108 the institute secured in the QoS BRICS international ranking 2017. Artificial Intelligence is making waves in the world today and the institute is playing a prominent role in this national and international initiative. Our placement, sponsored and consultancy projects, publications and citations per faculty are all showing very healthy trends. We have also launched our Continuing Education Program (CEP) and the Quality Improvement Program (QIP).

I would like to invite you to browse our annual report which will undoubtedly show the energy and dynamism of the institute.

विज्ञानं, तकनिकी
अंकशास्त्र, मानविकी
सर्व शास्त्र पारंगतआई आई टी पटना

Science and Technology
Mathematics, Humantities
Cultivated in all discipline is IIT Patna

Our destination:
विश्वका मुकुटमणि आई आई टी पटना
Jewel in world's crown is IIT Patna

Jai Hind

Organization

The Board of Governors

Mr. Ajai Chowdhry Founder, HCL	**Chairman**
Prof. Pushpak Bhattacharyya Director, IIT Patna	**Ex-Officio Member**
Principal Secretary Department of Science & Technology, Government of Bihar	**Member**
Principal Secretary Department of Science & Technology, Government of Jharkhand	**Member**
Prof. Amitabha Ghosh Former Director, IIT Kharagpur	**Member**
Prof. Sriman Kumar Bhattacharya Deputy Director and Professor, Civil Engineering, IIT Kharagpur	**Member**
Prof. Ajay Chakrabarty Former Vice-Chancellor, BIT Mesra and Professor, EEC, IIT Kharagpur	**Member**
Dr. T. Mukherjee Former Deputy Managing Director,Tata Steel, Jamshedpur	**Member**
Dr. Karali Patra Associate Professor Department of Mechanical Engineering, IIT Patna	**Member**
Dr. Nalin Bharti Associate Professor Department of Humanities and Social Sciences,IIT Patna	**Member**
Sh. Vishwa Ranjan Registrar, Indian Institute of Technology Patna	**Secretary**

The Finance Committee

Mr. Ajai Chowdhry Founder, HCL	**Chairman**
Prof. Pushpak Bhattacharyya Director, IIT Patna	**Ex-Officio Member**
Director (Finance), DoHE, MHRD	**Member**
Under Secretary (IITs), DoHE, MHRD	**Member**
Dr. Nalin Bharti Associate Professor Department of HSS,IIT Patna	**Member**
Dr. Karali Patra Associate Professor Department of Mechanical Engineering, IIT Patna	**Member**
Sh. Vishwa Ranjan Registrar, Indian Institute of Technology Patna	**Secretary**

The Building & Works Committee

Prof. Pushpak Bhattacharyya Director, IIT Patna	**Chairman**
Mr. B. K. Sahoo IIT Bombay	**Member**
Mr. Rajiv Garg IIT Kanpur	**Member**
Mr. Sushant Baliga Additional Director General (Retd.), CPWD	**Member**
Prof. A. K. Sinha IIT Kharagpur	**Member**
Mr. Gaurav Dewan MRICS	**Member**
Dr. Y. M. Desai IIT Bombay	**Member**
Prof. S. Majumdar Prof. (Retd), IIT Kharagpur	**Member**
Sh. Vishwa Ranjan Registrar, IIT Patna	**Secretary**

Administrative Heads

Prof. Pushpak Bhattacharyya
Director, Indian Institute of Technology Patna

Sh. Vishwa Ranjan
Registrar, Indian Institute of Technology Patna

Dr Ashish Kr Upadhyay
Associate Dean (Faculty Affairs)

Dr Akhilendra Singh
Associate Dean (Student Affairs)

Dr Sanjoy Kr Parida
Associate Dean (Academic)

Dr Ranganathan Subramanian
Associate Dean (Administration)

Dr Asif Ekbal
Associate Dean (Research and Development)

Dr Probir Saha
Associate Dean (Resources)

Events of Significant Importance

Recruitment of Employees at IIT Patna during 2017-18

Name	Designation	Date of Joining
Mr. Krishna Jee	Junior Technical Superintendent	04.04.2017(FN)
Dr. Asheesh Kumaar	Registrar	05.04.2017 (FN)
Mr. Deepak Singh	Junior Technical Superintendent	12.04.2017 (FN)
Mr. Arun Kumar Singh Bhadauria	Junior Technical Superintendent	17.04.2017 (FN)
Mr. Pita Maheshwar Tulsi	Assistant Registrar	18.04.2017 (FN)
Mr. Gudipati Srinivasarao	Junior Technical Superintendent	25.04.2017 (FN)
Mr. Subodh Kumar Azad	Junior Technical Superintendent	26.04.2017 (FN)
Mr. Shambhu Kumar	Assistant Registrar	01.05.2017 (FN)
Mr. Praveen Kumar Patel	Junior Technical Superintendent	02.05.2017 (FN)
Mr. Kailash Kumar Poddar	Junior Technical Superintendent	15.05.2017 (FN)
Mr. Ahmad Nishat	Junior Technical Superintendent	22.05.2017(FN)
Mr. Prashant Kumar	Junior Technical Superintendent	09.06.2017(FN)
Mr. Budhuram Kisku	Junior Technical Superintendent	13.06.2017(FN)
Mr. Shashi Kant Kumar	Junior Technical Superintendent	03.07.2017(FN)
Mr. Anurag Gupta	Junior Technical Superintendent	07.07.2017(FN)
Mr. Praveen Kumar	Assistant Engineer(Electrical)	17.07.2017(FN)
Mr. Ram Kumar Mahato	Junior Superintendent	01.08.2017 (FN)
Mr. Rakesh Kumar	Junior Superintendent	01.08.2017 (FN)
Mr. Anil Verma	Executive Engineer (Electrical)	09.08.2017(FN)
Mr. Randhir Kumar Parashar	Junior Technical Superintendent	10.08.2017(FN)
Mr. Deepak Kumar Chourasia	Security Officer	14.08.2017(FN)
Mr. Kumar Gautam	Audit/Accounts Officer	17.08.2017 (FN)
Mr. Santu Neogi	Junior Technical Superintendent	18.08.2017(AN)
Mr. Kanahiya Prasad	Assistant Engineer, Civil	22.08.2017 (AN)
Mr. B P Sibasankar	Junior Superintendent	01.09.2017 (FN)
Mr. Ravichandra Matangi	Junior Technical Superintendent	07.09.2017 (FN)
Mr. Arpit Ashok	Junior Technical Superintendent	25.09.2017(FN)
Mr. Aman Verma	Junior Mechanic	02.11.2017(FN)
Mr. Viswa Ranjan	Registrar	21.11.2017(FN)
Mr. Sunny Choudhary	Junior Superintendent	01.12.2017 (FN)
Ms. Anupma Bharti	Junior Technician	20.12.2017 (FN)

All India Rank [2018] of IIT Patna

IIT Patna achieved 108th rank in QS BRICS University Rankings 2018.

The QS BRICS University Rankings 2018 feature 300 top universities from Brazil, Russia, India, China and South Africa. The BRICS ranking is compiled using eight different indicators, including the ratio of faculty to students, the proportion of academic staff with a PhD and the institution's reputation among academics and employers.

IIT Patna received overall score as 37.2. The Institute further received the weighted score of 60.2, 100, 76.3 and 44.7 in the field of Faculty Student, Faculty Staff with PhD, Papers per Faculty, and Citations per Paper respectively.

IIT Patna is ranked as 24th best in the engineering discipline with score of 52.37 and 69th best in overall category with score of 44.25 in "India Rankings 2018 of NIRF-MHRD" which was released on April 3rd, 2018 by The Union Minister of Human Resource Development, Shri Prakash Javadekar. In the award ceremony held on April 3th 2018 in Vigyan Bhawan, IIT Patna got certificate for securing its position among top 100 institutions in the country.

India Rankings 2018 bench marked institutions in overall category and engineering discipline, wherein IIT Patna, was assessed on parameters, including teaching-learning; research and professional practice; graduation outcome; outreach and inclusivity and peer perception. Each of these has been further subdivided into nearly 20 sub criteria to comprehensively assess among the institutions to withstand distinction marks.

In engineering category IIT Patna stands at the 24th position with weighted score of 52.37. Its rank on different parameters such as teaching, learning and resources (TLR) with weighted score 74.43; research and professional practice (RP) with weighted score 35.03; graduation outcome (GO) with weighted score 65.64; outreach and inclusivity (OI) with weighted score 49.30; and perception (PR) with weighted score 14.73.

In overall category IIT Patna stands at the 69th position with weighted score of 44.25. Its rank on different parameters such as teaching, learning and resources (TLR) with weighted score 67.81; research and professional practice (RP) with weighted score 25.42; graduation outcome (GO) with weighted score 52.87; outreach and inclusivity (OI) with weighted score 49.93; and perception (PR) with weighted score 7.17.

Chemical and Biochemical Engineering

Faculty Members

Dr. Prolay Das Associate Professor	DNA self assembly for production of 3-dimensional functional Nanostructures. Clustered DNA damage and DNA repair mechanism in Nucleosome core particle
Dr. Sujoy Kumar Samanta Assistant Professor	Microwave Assisted Material Processing, Chemical Reaction Engineering, Modeling and Simulation, Renewable Energy Sources and Their Applications
Dr. Nitin Dutt Chaturvedi Assistant Professor	Modeling and Simulation of Chemical processes; Process system engineering; Process Integration; Pinch Analysis; Industrial Energy Conservation
Dr. Sandip Khan Assistant Professor	Molecular Modelling and Simulation, Statistical Thermodynamics, Equilibrium, Dynamic and Interfacial Properties of Complex fluids, Development of Novel Materials like super-hydrophobic, super-oleophobic, anti-fouling, anti-icing surfaces etc.; Self-Assembled Monolayer in application of chemical sensor, Thermo-physical properties of actinides compounds in application of nuclear fuel.
Dr. Sushant Kumar Assistant Professor	Clean Hydrogen Production Methods, Hydrogen Storage using metal hydrides, CO2 Utilization and Capture, Catalysts for clean energy applications
Dr. Sanjeev Kumar Assistant Professor	Biochemical Engineering (Environmental Biotechnology & Bioenergy)
Dr. Ashwini Kumar Sharma Assistant Professor	Mathematical modeling ; Transport phenomena (e.g., fluid mechanics, heat and mass transfer) ; Energy systems ; Electrochemical energy storage ; Fuel cells ; Batteries ; Flow batteries

Academic Programmes

- B.Tech in Chemical Engineering
- Ph.D Program

Research & Development Activities

Papers Published in Journals

1. Nitin Dutt Chaturvedi, Zainuddin Abdul Manan, Sharifah Rafidah Wan Alwi , A mathematical model for energy targeting of a batch process with flexible schedule, *Journal of Cleaner Production*, 167, 1060-1067 (2017).
2. Rakesh Kumar Sinha, Nitin Dutt Chaturvedi, "A graphical dual objective approach for minimizing energy consumption and carbon emission in production planning, *Journal of Cleaner Production*, 171, 312-321 (2018).
3. Jindal K. Shah Eliseo Marin-Rimoldi Ryan Gotchy Mullen Brian P. Keene Sandip Khan Andrew S. Paluch Neeraj Rai Lucienne L. Romanielo Thomas W. Rosch Brian Yoo Edward J. Maginn,Cassandra: An open source Monte Carlo package for molecular simulation, *Journal of Computational Chemistry*, 38, 1727 (2017).
4. Kumar, P., Prajapati, S.K.*, Malik, A., Vijay, V. K , Cultivation of native algal consortium in semi-continuous pilot scale raceway pond for greywater treatment coupled with potential methane production, *Journal of Environmental Chemical Engineering*, 5 : 5581-5587 (2017).
5. Verma, P. Samanta, S.K., Degradation kinetics of pollutants present in a simulated wastewater matrix using UV/TiO2 photocatalysis and its microbiological toxicity assessment , *Research on Chemical Intermediates*, 43, 6317–6341 (2017).
6. Verma, P. Samanta, S.K., Facile synthesis of TiO-2PC composites for enhanced photocatalytic abatement of multiple pollutant dye mixtures: A comprehensive study on the kinetics, mechanism and effects of environmental factors, *Research on Chemical Intermediates*, 44, 1963-1988 (2018).
7. Sushant Kumar, T. Pavloudis, V. Singh, H. Nguyen, S. Steinhauer, C. Pursell, B. Clemens, P. Grammatikopoulos, M. Sowwan, Hydrogen flux through size selected Pd nanoparticles into underlying Mg nanofilms , *Advanced Energy Materials*, 8 (2018).

8. Thawani, M., Hans, N., Samuchiwal, S., Prajapati, S.K, Improved methane yield from wastewater grown algal biomass, *Water Science and Technology*, In-press (2018).
9. Nitin Dutt Chaturvedi, Minimizing energy consumption via multiple installations aggregate production planning, *Clean Technologies and Environmental Policy*, 19(7), 1977–1984 (2017).
10. Nitin Dutt Chaturvedi, Minimizing energy requirement in batch water networks, *Industrial & Engineering Chemistry Research*, 56 (1), 241–249 (2017).
11. Ashwini Kumar Sharma, Khaliq Ahmed and Erik Birgersson, Nernst voltage losses in planar fuel cells caused by changes in chemical composition: effects of operating parameters, *Ionics*, In press (2018).

Papers Presented in Conferences

1. Verma P., Samanta S.K. , Insights on the Limitations of Heterogeneous Photocatalysis and Possible Solutions, *CHEMCON - 2017*, HIT and Haldia Regional Center, IIChE (2017)
2. Samanta S. K., Kumari S., Patel K. , Microwave Assisted Processing of 2D Cylindrical Porous Food Dielectrics, *CHEMCON - 2017*, HIT and Haldia Regional Center, IIChE (2017)

Other Activities

Member - Professional Bodies

1. Nitin Dutt Chaturvedi (2017) Institution of Engineers, India
2. Sujoy Kumar Samanta (2013) Indian Institute of Chemical Engineers
3. Sujoy Kumar Samanta (2015) International Association of Engineers

Member - Editorial Board

1. Dr. Sanjeev Kumar *Member* - Austin Journal of Microbiology
2. Dr. Sanjeev Kumar (2016) *Member* - Journal of Environmental and Social Sciences
3. Nitin Dutt Chaturvedi (2016) *Member* - Modern Management Forum

Awards & Honours

1. Dr. Sanjeev Kumar (2017) *Bioenergy-Awards for Cutting Edge Research (B_ACER- 2017) - DBT+IUSSTF*

Sponsored Research Projects

1. A coupled process for simultaneous ethanol and methane production from enzymatically pretreated algal biomass (SERB, Rs.23.46 Lakhs) (PI : Dr. Sanjeev Kumar)

Invited Lectures by Faculty Members

1. Self-Motivation for Life Skill Development Cum Management: A Few Interesting Ideas/Concepts *by* Sujoy Kumar Samanta (IIT Patna)
2. Time Management *by* Sujoy Kumar Samanta (IIT Patna)
3. Research and Integration: Developing Technology for Sustainable Development *by* Nitin Dutt Chaturvedi (INDO-GLOBAL SUMMIT & EXPO 2017, Kolkata)
4. Self-Motivation *by* Sujoy Kumar Samanta (CSE Department, IIT Patna)

Chemistry

Faculty Members

Dr. Debabrata Seth Associate Professor	Photophysics, Chemical Dynamics, Ionic liquids
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, Inorganic-organic hybrid material synthesis, Coordination polymers / Metal organic framework (MOF), Polymer Chemistry - syntheses/characterization/ applications
Dr. Prolay Das Associate Professor	DNA self assembly for production of 3-dimensional functional Nanostructures; Clustered DNA damage and DNA repair mechanism in Nucleosome core particles
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. Amit Kumar Assistant 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. 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.
Dr. Snehasis Daschakraborty Assistant Professor	Studies of reaction and relaxation processes in complex chemical and biological systems using theory and computer simulation technique
Dr. Debajit Sarma Assistant Professor	Coordination polymer, solid state chemistry, Chalcogenide and chalcogel based materials, oxide materials, energy conversion and catalysis.
Dr. Subrata Chattopadhyay Assistant Professor	Polymer chemistry (sustainable/Green synthesis), nanomaterials and surface engineering.

Academic Programs

- B.Tech in Chemical Science and Technology
- M.Sc in Chemistry
- Ph.D Program

Research & Development Activities

Papers Published in Journals

1. Subrata Chattopadhyay, Jonas Van Damme, Otto van den Berg, Filip Du Prez*, Anthracenebased colloidal polymer nanoparticles - their photochemical ligation and waterborne coating applications, *Particle & Particle Systems Characterization*, Accepted Manuscript (2018).
2. M Naqi Ahamad, Farasha Sama, Muhammad Nadeem Akhtar, Yan-Cong Chen, Ming-Liang Tong, Musheer Ahmad, M Shahid, Sahid Hussain, Kulsum Khan, A disc-like Co 7 cluster with a solvent dependent catecholase activity, *New J. Chem.*, 41 (2017).
3. M. Musawwer Khan, Sai Sarfaraz Khan, Sumbulunnisan Shareef and Sahid Hussain , A Facile and Green Approach for One Pot Synthesis of Functionalized Chromeno[3,4 b]quinolines and Spiro Chromeno[3,4 b]quinolines by Using Molecular Iodine as a Catalyst, *Chemistry Select*, 3 (2018).
4. Rapti, Sofia† Sarma, Debajit† Diamantis, Stavros A. Skliri, Euaggelia Armatas, Gerasimos S. Tsi, All in one porous material: Exceptional sorption and selective sensing of hexavalent chromium by a Zr+4 MOF , *J. Mater. Chem. A*, 5, 14707-14719 (2017).
5. Nirbhay Kumar, Md Qaisar Raza, Debabrata Seth, Rishi Raj, Aqueous ionic liquid solutions for boiling heat transfer enhancement in the absence of buoyancy induced bubble departure, *International Journal of Heat and Mass Transfer*, 122,354-363 (2018).
6. Seema Singh, Manoj K. Singh and Prolay Das , Biosensing of solitary and clustered abasic site DNA damage lesions with copper nanoclusters and carbon dots , *Sensors and Actuators B: Chemical*, 255, 763 (2017).
7. Samiyara Begum and Ranga Subramanian , Bonding and spectroscopic analyses of N2O–CS2 and N2O–OCS heterodimer complexes and their atmospheric consequences , *Physical Chemistry and Chemical Physics*, 19, 26412-26422 (2017).
8. P.R. Sreenath, Seema Singh, M.S. Satyanarayana, Prolay Das, K. Dinesh Kumar , Carbon dot - Unique reinforcing filler for polymer with special reference to physico-mechanical properties, *Polymer*, 112, 189 (2017).
9. Sonam Kumari, Seema Singh and Prolay Das , Carbon Dots As a Nanotool For Integrated Photodynamic Therapy and Chemotherapy, *Indian Journal of Chemistry*, 57B, 265-270 (2018).
10. Seema Singh, Anshul Mishra, Rina Kumari, Kislay K. Sinha, Manoj K. Singh and Prolay Das , Carbon dots assisted formation of DNA hydrogel for sustained release of drug, *Carbon*, 114, 169 (2017).
11. Sourav chakraborty, Kevin R Endres, Ranajit Bera, Lukasz Wojtas, Charles N. Moorefield, Mary Jane Saunders, Neeladri Das, Chrys Wesdemiotis and George R Newkome, Concentration Dependent Supramolecular Interconversions of Triptycene-Based Cubic, Prismatic, and Tetrahedral Structures, *Dalton Trans.*, Advance Article (2018).
12. Sourav Bhowmick, Achintya Jana, Khushwant Singh, Prerak Gupta, Ankit Gangrade, Biman B. Mandal, and Neeladri Das, Coordination-Driven Self-Assembly of Ionic Irregular Hexagonal Metallamacrocycles via an Organometallic Clip and Their Cytotoxicity Potency - , *Inorg. Chem.*, (2017).
13. KUMARI, SONAM Solanki, Apurv Mandal, Saptarshi Subramanyam, Deepa Das, Prolay, Creation of Linear Carbon Dot Array with Improved Optical Properties through Controlled Covalent Conjugation with DNA , *Bioconjugate Chemistry*, just accepted (2018).
14. Snehasish Mondal, Achintya Jana, Ranajit Bera and Neeladri Das, Design and synthesis of triptycene based fluorescent polymer with pendent triazole: Effect of functionality on host–guest interaction Version of Record onli, *J. Polym. Sci. A Polym. Chem.*, 55 (22), 3725–3735 (2017).
15. Mukta Shaw1, Yogesh Kumar1, Rima Thakur2 and Amit Kumar, Electron Deficient Pyridinium Salts/Thiourea Cooperative Catalyzed O-Glycosylation via Activation of O-Glycosyl Trichloroacetimidate Donors , *Beilstein Journal of Organic Chemistry*, 13, 2385–2395 (2017).
16. Ke, Weijun Stoumpos, Constantinos C. Zhu, Menghua Mao, Lingling Spanopoulos, Ioannis Liu, Jian Kontsevoi, Oleg Y. Chen, Michelle Sarma, Debajit Zhang, Yongbo Wasielewski, Michael R. Kanatzidis, Mercouri G., Enhanced photovoltaic performance and stability with a new type of hollow 3D perovskite {en}FASnI3 , *Sci. Adv.* , 3, E1701293 (2017).
17. Snehasis Daschakraborty, How do Glycerol and Dimethyl Sulphoxide affect Local Tetrahedral Structure of Water around a Nonpolar Solute at Low Temperature? Importance of Preferential Interaction, *J. Chem. Phys.*, 148, 134501 (2018).

18. R. Dwivedi, D. P. Singh, B. S. Chauhan, S. Srikrishna, Anoop Kumar Panday L. H. Choudhury, V. P. Singh, Intracellular application and logic gate behavior of a 'turn off-on-off'type probe for selective detection of Al +3 and F– ions in pure aqueous medium, *Sensors and Actuators B: Chemical*, 258, 881-894 (2018).

19. Sayeed Ashique Ahmed, Debabrata Seth, Investigation of interaction of an alkaloid harmaline with cucurbit [7] uril: A spectroscopic and calorimetric study, *Chemical Physics Letters*, 692, 340-344 (2018).

20. S. Indra and Snehasis Daschakraborty, Mechanism of translational jump of a hydrophobic solute in supercooled water: Importance of presolvation, *Chemical Physical Letter*, 685, 322 (2017).

21. Kumar, Yogesh Jaiswal, Mukta Shaw, and Amit Kumar, Metal-Free Catalyst-Controlled Chemoselective Synthesis of Aryl a-Ketoesters and Primary a-Ketoamides from ArylAcetimidates, *ChemistrySelect 2017,* 2, 21, 6143 (2017).

22. Arvind K. Bhakta, Simon Detriche, Sunita Kumari, Sahid Hussain, Praveen Martis, Ronald J. Mascarenhas, Joseph Delhalle and Zineb Mekhalif, Multi-wall Carbon Nanotubes Decorated with Bismuth Oxide Nanocrystals Using Infrared Irradiation and Diazonium Chemistry, *J Inorg Organomet Polym*, (2018).

23. Md.Lokman H. Choudhury, Richa Mishra, Anoop KumarPanday, Jagannath Pal, Ranga Subramanian, and AjayVerma, Multicomponent Reactions of Arylglyoxal, -4Hydroxycoumarin, and Cyclic -1,3C,N-Binucleophiles: Binucleophile DirectedSynthesis of Fused Five and Six Membered N-Heterocycles., *Eur. J. Org. Chem.*, (2017).

24. Ranajit Bera, Snehasish Mondal, Neeladri Das, Nanoporous triptycene based network polyamides (TBPs) for selective CO2 uptake, *Polymer*, 111, 275-284 (2017).

25. Sandipa Indra and Snehasis Daschakraborty, Nonpolar Solvation Dynamics for a Nonpolar Solute in Room Temperature Ionic Liquid: A Nonequilibrium Molecular Dynamics Simulation Study, *J. Chem. Sci.*, 130, 3 (2018).

26. Kumar, Y. Jaiswal, Y. Kumar, A, One-Pot, Two-step Synthesis of Unsymmetrical (Hetero)Aryl -1,2Diketones via Addition-Oxygenation of Potassium Aryltrifluoro- borates to (Hetero) Arylacetonitriles, *Eur. J. Org Chem*, 494–505 (2018).

27. A. Mishra, Md. I. Khan, P. K. Jha, A. Kumar, S. Das, Prolay Das, P. K. Das and K. K. Sinha , Oxidative Stress-Mediated Overexpression of Uracil DNA Glycosylase in Leishmania donovani Confers Tolerance against Antileishmanial Drugs, *Oxidative Medicine and Cellular Longevity*, Article ID 40743574. (2018).

28. Yogesh Jaiswal, Yogesh Kumar, and Amit Kumar , Palladium-Catalyzed Regioselective C–H Alkenylation of Arylacetamides via Distal Weakly Coordinating Primary Amides as Directing Groups , *J. Org. Chem. 2018*, 83 (3), 1223–1231 (2018).

29. Afaq Ahmad Khan, Manish Kumar, Kulsum Khan, Aniruddha Molla and Sahid Hussain, Photoinduced Oxygen Prompted Iron-Iron Oxide Catalyzed Clock Reaction: Mimic of Blue Bottle Experiment, *New J. Chem.*, 41 (2017).

30. Sayeed Ashique Ahmed, Rajesh Kumar Gautam, Pranjali Sharma, Debabrata Seth, Photophysics of a molecular rotor inside the block co-polymers, *Journal of Photochemistry and Photobiology A: Chemistry*, 351, 170-178 (2018).

31. Rajesh Kumar Gautam, Sayeed Ashique Ahmed, Debabrata Seth, Photophysics of thioflavin T in deep eutectic solvents , *Journal of Luminescence*, 198, 508-516 (2018).

32. Vandewalle S., De Walle M. V., Chattopadhyay S., Du Prez F, Polycaprolactone-b-poly(Nisopropylacrylamide) nanoparticles : synthesis and temperature induced coacervation behavior , *European Polymer Journal* , 98, 468-474 (2018).

33. Poggi E, Ouvry W., Ernould B., Bourgeois J. P., Chattopadhyay S., Du Prez F., Gohy J. F., Preperation of Janus nanoparticles from block copolymer thin films using triazolinedione chemistry, *RSC Advances*, 7, 37048-37054 (2017).

34. Yogesh Jaiswal, Yogesh Kumar, Rima Thakur Jagannath Pal, Ranga Subramanian, and Amit Kumar, Primary Amide Directed Regioselective ortho-C–H-Arylation of (Aryl)Acetamides , *J. Org. Chem.*, 81, 12499–12505 (2016).

35. R. Bharti, P. Kumari, T. Parvin and Lokman H. Choudhury, Recent advances of aminopyrimidines in multicomponent reactions, *Current Organic Chemistry*, 22 (2018).

36. Ranajit Bera, Mosim Ansari, Snehasish Mondal, Neeladri Das, Selective CO2 capture and versatile dye adsorption using a microporous polymer with triptycene and -1,2,3triazole motifs , *European Polymer Journal*, 99, 259–267 (2018).

37. Rina Kumari, Mohd. Imran Khan, Sourav Bhowmick, Kislay K. Sinha, Neeladri Das and Prolay Das, Self-assembly of DNA-porphyrin hybrid molecules for the creation of antimicrobial nanonetwork , *Journal of Photochemistry and Photobiology B: Biology*, 172, 28 (2017).

38. Rina Kumari, Mohd. Imran Khan, Sourav Bhowmick, Kislay K. Sinha, Neeladri Das, Prolay Das, Self-assembly of DNA-porphyrin hybrid molecules for the creation of antimicrobial nanonetwork, *Journal of Photochemistry & Photobiology, B: Biology*, 172 (2017).

39. Achintya Jana, Petra Lippmann, Ingo Ott, Neeladri Das*, Self-Assembly of Flexible [2 + 2] Ionic Metallamacrocycles and Their Cytotoxicity Potency, *Inorganica Chimica Acta*, 471, 223-227 (2018).
40. A. Jana, N. Das, Self-Assembly of [2+2] Platina Macrocycles Using a Flexible Organometallic Clip, *ChemistrySelect*, 2, 4099 (2017).
41. R. Mishra, A. Jana, A. K. Panday and Lokman H. Choudhury, Synthesis of fused pyrroles containing -4hydroxycoumarins by regioselective metal-free multicomponent reactions, *Organic & Biomolecular Chemistry*, 10.1039/c8ob0016h (2018).
42. A. K. Panday, R. Mishra, A. Jana, T. Parvin and Lokman H. Choudhury, Synthesis of pyrimidine fused quinolines by ligand-free copper-catalyzed domino reactions, *The Journal of Organic Chemistry*, 83, 3624-3632 (2018).
43. A. Jana, A.K. Panday, R. Mishra, T. Parvin, Lokman H. Choudhury, Synthesis of thio and selenoethers of cyclic hydroxy carbonyls and amino uracils: A metal free regioselective I2/DMSO mediated reaction, *ChemistrySelect*, 2, 9420-9424 (2017).
44. Sayeed Ashique Ahmed, Debabrata Seth, Thermodynamic analysis of binding of benzimidazole derivative with cucurbit [7] uril: A isothermal titration calorimetry study, *Journal of Molecular Liquids*, 254, 70-75 (2018).
45. Ranajit Bera, Snehasish Mondal, Neeladri Das, Triptycene based microporous polymers (TMPs): Efficient small gas (H2 and CO2) storage and high CO2/N2 selectivity, *Microporous Mesoporous Mater.*, 257C, 253-261 (2018).
46. Seema Singh, Manoj K. Singh and Prolay Das , Visual detection of cyclobutane pyrimidine dimer DNA damage lesions by Hg+2 and carbon dots, *Analytica Chimica Acta*, 1016, 49-58 (2018).

Papers Presented in Conferences

1. Prolay Das and Seema Singh, Biosensing of Clustered Abasic Site DNA Damage with Carbon and Copper Nanoparticles, *ICLRESM 2018*, Delhi (2018)
2. Prolay Das, Carbon Dot-DNA Hybrid Hydrogel for controlled release of drugs , *Smart Materials: Methods and Applications*, IISER Kolkata (2017)
3. Anoop Kumar Panday and Lokman H. Choudhury, Copper-Catalyzed Synthesis of Pyrimidine Fused Quinoline Derivatives, *XIII J-NOST Conference for Research Scholars*, BHU Varanasi (2017)
4. Aasim Jana and Lokman H. Choudhury, I2 /DMSO Mediated Metal Free Cross Dehydrogenative Coupling Reaction: Synthesis of Thio and Seleno Ethers of Cyclic -hydroxy Carbonyls and Heterocyclic Enamines , *XIII J-NOST Conference for Research Scholars,* BHU Varanasi (2017)

Sponsored Research Projects

1. IMIDATES: A New Class of N-H Directing Group for C(sp2)-H Activation and tools for Synthesis of Highly Functionalized Heterocycles (CSIR, New Delhi, Rs.15.00 Lakhs) (PI : Amit Kumar)
2. Exploration of Multicomponent Reactions (MCRs) Towards Green Synthesis of Novel Functionalized & Sequence Regulated Macromolecules (SERB, DST, Govt. of India, Rs.40.95 Lakhs) (PI : Md. Lokman H. Choudhury)
3. Functionalization of the Carbohydrates: Designing New strategies for the synthesis of Natural and Modified Sugar via Catalysis (SERB-DST, Rs.25.00 Lakhs) (PI : Amit Kumar)
4. Graphene/conducting polymer nanocomposites based enzymetic biosensors for the detection of biomolecules (DST, Rs.19.20 Lakhs) (PI : Chandramika Bora)
5. Quantum dynamical studies on bimolecular reactions of practical and fundamental interest (DST (INSPIRE), Rs.35.00 Lakhs) (PI : Tammineni Rajagopala Rao)
6. Theoretical investigation of intermolecular forces and optical properties of atmospheric aerosols (CSIR) (PI : Ranganathan Subramanian)

Other Activities

Member - Professional Bodies

1. Amit Kumar - Chemical Research Society of India
2. Amit Kumar - Association of carbohydrate Chemist and Technologist-India
3. Amit Kumar - Indian Science Congress
4. Neeladri Das - American Chemical Society
5. Ranganathan Subramanian - American Chemical Society
6. Ranganathan Subramanian - Chemical Research Society of India

Member - Editorial Board

1. Md. Lokman Hakim Choudhury - *Editorial Board Member* - American Journal of Organic Chemistry
2. Prolay Das (2017) *Editorial board member* - Enliven Bioanlutical Techniques
3. Prolay Das (2017) *Editorial board member* - Oriental Journal of Chemistry
4. Ranganathan Subramanian - *Member* - International Journal of Environmental Chemistry
5. Ranganathan Subramanian - *Member* - International Journal of Thermodynamics and Chemical Kinetics
6. Ranganathan Subramanian - *Member* - Applied Physics Research

Invited Lectures by Faculty Members

1. Supramolecular Chemistry *by* Neeladri Das (Indian Institute of Technology (ISM), Dhanbad)
2. Nanoscale Materials for Biomedical, Photocatalytic and Adsortion Applications: A Greener Prospective *by* Sahid Hussain (Patna University)
3. Symmetry, Space Group and Topology *by* Debajit Sarma (Workshop on "Theory and Applications of Single Crystal X-ray Diffrac tion in IIT PATNA)
4. Oxidative Functionalization of Heteroarylimidate Benzylic C-H Bonds: En Route Synthesis of Functiona *by* Amit Kumar (IISER Bhopal)
5. A Promising Synthetic Route for Glycoside Bond Formation. Emerging Chemistry and Biology of Carbohyd *by* Amit Kumar (IIT Kgp)
6. New Tools for Green Chemistry. Applications of green chemistry in the remediation of environment *by* Amit Kumar (LSM college Darbhanga)
7. Oxidative Functionalization: A Green and Efficient Synthetic Tool for the Synthesis of Functional *by* Amit Kumar (tata college, tata nagar)
8. Quantum symmetry effects and isotopic effects in oxygen exchange reactions *by* TAMMINENI Rajagopala Rao (IIT Tirupati and IISER Tirupati)
9. Supramolecular Host Guest Interaction between Bioactive Molecules and Macrocyclic Hosts *by* Debabrata Seth (Burdwan University)
10. Green Synthesis of Polymer Nanoparticles *by* Subrata Chattopadhyay (Indian Institute of Technology Roorkee, (Conference entitled International Conference of Nanotechnology: Ideas, Innovations & Initiatives- 2017 (ICN:3I)))

Short-Term Courses, Training Programmes and Workshops organised

1. National Workshop on "Theory and Applications of Single Crystal X-ray Diffraction (21- 23 March 2018).

Civil and Environmental Engineering

Faculty Members

Dr. Pradipta Chakrabortty Assistant Professor	Soil Dynamics and Geotechnical Earthquake Engineering, Soil Heterogeneity, Finite Element Analysis in Geotechnical Engineering, Ground Improvement, Probabilistic Methods in Engineering, Low Cost Housing
Dr. Subrata Hait Assistant Professor	Water and Wastewater Treatment, Solid and Hazardous Waste Management, Organic Waste Management by Composting and Vermicomposting, Conventional and Ecological Sanitation
Dr. Syed K. K. Hussaini Assistant Professor	Rail Track Geotechnology; Cyclic Behavior of Granular Media under High-Frequency Cyclic Loading; The Role of Geosynthetics in Improving the Rail Track Performance; Ground Improvement
Dr. Avik Samanta Assistant Professor	Structural Engineering, Structural Dynamics, Performance Based Earthquake Engineering
Dr. Om Prakash Assistant Professor	Water Resource Systems Engineering; Hydrological and Hydro-Geological Modelling; Numerical Modelling of Groundwater Flow and Solute Transport; Water Resources Management; Optimization based solutions for Groundwater and Water Resource Management Problems
Dr. Koushik Roy Assistant Professor	Structural Damage Detection; Vibration Control; System Identification; Earthquake Engineering; Structural Dynamics; Soil-Structure Interaction
Dr. Vaibhav Singhal Assistant Professor	Seismic behavior of reinforced concrete and masonry structures; Small-scale modeling of structural systems for real time dynamic testing; Seismic evaluation and rehabilitation of structures; Earthquake damage surveys
Dr. Amarnath Hegde Assistant Professor	Geotechnical Engineering; Ground Improvement; Computational Geotechnics; Geosynthetics; Rock mechanics and Tunneling
Dr. Trishikhi Raychoudhury Assistant Professor	Environmental Engineering (Colloid Filtration, Solute fate and transport, Water treatment using novel material Environmental implication of nanotechnology)
Dr. Ramakrishna Bag Assistant Professor	Toxic waste disposal; Unsaturated soil mechanics; Geo-energy; Geoenvironmental Engineering
Dr. Ritwik Ghoshal Assistant Professor	Shock waves, Computational mechanics, Fluid-structure interaction, Composites and non-linear dynamics
Dr. Vishal Deshpande Assistant Professor	Open channel hydraulics; Sediment transport; Turbulent flows; Flash floods; Surface hydrology

Academic Programs

- B.Tech in Civil Engineering
- M.Tech in Civil and Infrastructure Engineering
- Ph.D Program

Research & Development Activities

Papers Published in Journals

1. Hegde, A. and Roy.R, A comparative numerical study on soil–geosynthetic interactions using large scale direct shear test and pullout test, *International Journal of Geosynthetics and Ground Engineering*, 4(1), 1-11 (2018).
2. A. Swati and S. Hait, A Comprehensive Review of the Fate of Pathogens during Vermicomposting of Organic Wastes, *Journal of Environmental Quality*, 47, 16-29 (2018).
3. Syed K. K. Hussaini, Buddhima Indraratna, and J. S. Vinod , A Critical Review of the Performance of Geosynthetic-Reinforced Railroad Ballast , *Journal of Geotechnical Engineering*, In press (2018).
4. Gurugubelli, P. S., Ghoshal, R., Joshi, V., Jaiman, R. , A variational projection scheme for nonmatching surface-to-line coupling between 3D flexible multibody system and incompressible turbulent flow , *Computers and Fluids*, 165, 160-172 (2018).
5. Vaibhav Singhal and Durgesh C Rai, Behavior of Confined Masonry Walls with Openings under In-Plane and Out-of-Plane Loads, *Earthquake Spectra*, Inprint (2018).
6. Anshupriya and S. Hait, Comprehensive characterization of printed circuit boards of various end-of-life electrical and electronic equipment for beneficiation investigation (DOI: 10.1016/j.wasman.2018.02.014), *Waste Management*, (2018).
7. Ghoshal, R., Yenduri, A., Aziz, A., Qian, X., Jaiman, Coupled nonlinear instability of cable subjected to combined hydrodynamic and ice loads, *Ocean Engineering*, 148, 486-499 (2018).
8. Kumari Sweta and Syed K. K. Hussaini, Effect of shearing rate on the behavior of geogrid-reinforced railroad ballast under direct shear conditions, *Geotextiles and Geomembranes*, 46(3), 251-256 (2018).
9. Avik Samanta and Pranjul Pandey, Effects of ground motion modification methods and ground motion duration on seismic performance of a -15storied building, *Journal of Building Engineering*, 15 (2018).
10. Hegde, A. and Sitharam, T.G., Experiment and 3D-numerical studies on soft clay bed reinforced with different types of cellular confinement systems, *Transportation Geotechnics*, Vol 10, pp 73-84. (2017).
11. Anshupriya and S. Hait, Extraction of metals from high grade waste printed circuit board by conventional and hybrid bioleaching using Acidithiobacillus ferrooxidans, *Hydrometallurgy*, 177, 132-139 (2018).
12. Sitharam, T.G. and Hegde, A., Forensic Geotechnical Investigations of a Misaligned RE Wall in a Highway Section, *Consulting Ahead*, 11(2), 62-71 (2017).
13. Hegde, A, Geocell reinforced foundation beds-past findings, present trends and future prospects: A state-of-the-art review, *Construction and Building Materials*, Vol 154, pp 658–67 (2017).
14. A. Swati and S. Hait, Greenhouse gases emission during composting and vermicomposting of organic wastes – A review (DOI: 10.1002/clen.201700042), *CLEAN - Soil, Air, Water*, (2018).
15. B Datta, C Petit, M Palliser, HK Esfahani, O Prakash , Linking a Simulated Annealing Based Optimization Model with PHT3D Simulation Model for Chemically Reactive Transport Processes to Optimally Characterize Unknown Contaminant Sources in a Former Mine Site in Australia, *Journal of Water Resources and Protection*, 9 (05), 432 (2017).
16. Durgesh C Rai, Hemant B Kaushik and Vaibhav Singhal, M6.7 January 2016 ,4 Imphal Earthquake: Dismal Performance of Publicly-Funded Buildings, *Current Science*, 113 (12) (2017).
17. S.P. Gundupalli, S. Hait and A. Thakur , Multi-material classification of dry recyclables from municipal solid waste based on thermal imaging , *Waste Management*, 70, 13-21 (2017).
18. Ghoshal, R., Mitra, N., Oblique underwater shock wave reflection, *Physical Review Fluids*, 3 (1), 013403 (2018).
19. Anshupriya and S. Hait, Qualitative and quantitative metals liberation assessment for characterization of various waste printed circuit boards for recycling , *Environmental Science and Pollution Research*, 24(35), 27445–2745 (2017).
20. Pradipta Chakrabortty, Uttam Kumar and Vishal Puri, Seismic Site Classification and Liquefaction Hazard Assessment of Jaipur City, India, *Indian Geotechnical Journal*, 1-12 (2018).
21. Koushik Roy, Structural damage identification using mode shape slope and curvature, *Journal of Engineering Mechanics*, 04017110 (2017).
22. Anshupriya and S. Hait, Toxicity characterization of metals from various waste printed circuit boards, *Process Safety and Environmental Protection*, 116, 74-81 (2018).

Papers Presented in Conferences

1. Avik Samanta and Pranjul Pandey, Effects of Ground Motion Duration and Scaling Methods on Seismic Performance of Tall Structures, *8th International Conference on Structural Engineering and Construction Management*, Kandy, Sri Lanka (2017)
2. Koushik Roy, Sourav Gur and Sudib K Mishra , Behavior of Elevated Liquid Storage Tank under Near Fault Earthquakes, *19th International Conference on Earthquake, Geological and Structural Engineering*, Boston,USA (2017)
3. Kumari Sweta and Syed K. K. Hussaini, Behavior of Geogrid-Reinforced Railroad Ballast in Direct Shear Conditions, *Indian Geotechnical Conference 2017 GeoNEst*, IIT Guwahati (2017)
4. V. Puri, and P. Chakrabortty, Behavior of Sustainable Prefabricated Bamboo Reinforced Wall Panels under Concentrated Load*", International Conference on Sustainable Infrastructure, ASCE*, New York, USA (2017)
5. S. P. Gundupalli, S. Hait and A. Thakur, Classification of recyclables from e-waste stream using thermal imaging-based technique, *ASCE India Conference 2017: Urbanization Challenges in Emerging Economies*, New Delhi, India (2017)
6. S. Kumar, and P. Chakrabortty, Dynamic Behaviour of Isolated Footing on Dry Cohesionless Soil, *Indian Geotechnical Conference* , IIT Guwahati (2017)
7. Venkateswarlu, H and Hegde, A., Dynamic response of the machine foundation resting on geocell reinforced soil beds, *Indian Geotechnical Conference2017-*, Guwahati, India (2017)
8. S. Shrivastava, and P. Chakrabortty, Effect of Soil Heterogeneity on Dynamic Response of Saturated Cohesionless Soil, *Indian Geotechnical Conference*, IIT Guwahati (2017)
9. Avik Samanta and Pranjul Pandey, Effects of Spectral Shape of Input Ground Motion and Ground Motion Modification Methods on Seismic Performance of Tall Buildings,*Advances in Construction Material and Structures (ACMS - 2018)*, IIT Roorkee (2018)
10. Anshupriya and S. Hait, Extraction feasibility of Cu and Pb from high grade waste printed circuit board by exploiting Acidithiobacillus ferrooxidans based conventional and hybrid bioleaching,*International Conference on Emerging Trends in Biotechnology for Waste Conversion 2017 (ICETBWC – 2017)*, CSIR-NEERI, Nagpur, Maharashtra (2017)
11. Hasan, A.F., and Raychoudhury,T., Fluoride removal from water by metal-activated carbon composite based filter media, *IWA-MTC 2017*, Singapore (2017)
12. Dattatery Tripathy and Vaibhav Singhal, Formulation of Strut-and-Tie Model for Estimating the Shear Capacity of Confined Masonry Walls, *11th National Conference in Earthquake Engineering*, Los Angeles, CA (2018)
13. A. Das, and P. Chakrabortty, Impact of Frequency Content in Input Motion on Seismic Response of Layered Soil , *Indian Geotechnical Conference*, IIT Guwahati (2017)
14. N. Nilay, and P. Chakrabortty, Liquefaction Potential Assessment of an Institute Campus,*Indian Geotechnical Conference*, IIT Guwahati (2017)
15. P. Chakrabortty, and A. Das, Liquefaction Strength Assessment of Cohessionless Soil in IIT Patna Campus, *2nd International Conference on Advances in Concrete, Structural and Geotechnical Engineering*, BITS Pilani (2018)
16. Kumar Gaurav, Kumari Sonam, Vaibhav Singhal and Koushik Roy, Mode Shape-based Damage Identification in Cylindrical Pipe using Dynamic Response, *EURODYN 2017*, Rome, Italy (2017)
17. Roy, R. and Hegde, A., Numerical simulation of geotextile-sand interface using box shear test and pull-out test: A comparison, *Sixth Indian Young Geotechnical Engineers Conference*, Trichy, India (2017)
18. A. Das, and P. Chakrabortty, One Dimensional Seismic Response Analysis of Heterogeneous Layered Soil, *15th International Conference of the International Association for Computer Methods and Advances in Geomechanics*, Wuhan, China (2017)
19. V. Puri, and P. Chakrabortty, Policy Issues in Affordable Housing made with Bamboo Reinforced Structural Component, *Urbanization Challenges in Emerging Economies, ASCE* , IIT Delhi, India (2017)
20. Sitharam T.G. and Hegde, A., Probabilistic seismic slope stability analyses of rock fill tailing dams: A case study., *19th International Conference on Soil Mechanics and Geotechnical Engineering,* Seoul, Republic of Korea (2017)
21. Anshupriya and S. Hait, Recycling based comprehensive characterization of waste printed circuit boards of various brown and white goods, *Waste Management Convention 5 :2017th World Convention on Recycling and Waste Management*, Singapore (2017)

22. S.K. Singh and S. Hait, Recycling-oriented characterization and recovery potential of rare earth elements in compact and linear fluorescent lamps, *Recycle - 2018: International Conference on Waste Management*, IIT Guwahati, Assam (2018)
23. Dibyanshu and Raychoudhury, T., Transport behavior of selected engineered nanoparticles through porous media, *IGWC 2017*, New Delhi, India (2017)

Sponsored Research Projects

1. Arsenic immobilization by in-situ synthesis of iron-based adsorbent under reducing environment within porous media (DST-WTI, Rs.39.36 Lakhs) (PI : Trishikhi Raychoudhury)
2. Development of Ganga Grams under Namami Gange Programme with Support of Technical Institutions (MHRD & NMCG, MoWR,RD&GR, GoI, Rs.5.00 Lakhs) (PI : Subrata Hait)
3. Development of Structural Health Monitoring Technique for Existing Bridges in Bihar: A Pilot Study (Road Construction Department, Bihar, Rs.2.70 Lakhs) (PI : Vaibhav Singhal and Koushik Roy)
4. Evaluate the fate and transport and implication of engineered nanoparticle retention in porous media (DST-SERB, Rs.30.44 Lakhs) (PI : Trishikhi Raychoudhury)
5. Seismic Response, Damage and Vulnerability of Structures in Patna for Future Earthquakes (SERB, Rs.21.39 Lakhs) (PI : Avik Samanta)
6. Varied profiling of bio-macromolecules for energy and byproduct assessment employing electrochemical tools (SERB, DST, GoI , Rs.18.48 Lakhs) (PI : Subrata Hait)

Consultancy Projects

1. Liquefaction Assessment of Vaishali STUPA site (Suresh Goel and Associates, Rs.3.57 Lakhs) Consultant Name: Pradipta Chakrabortty
2. Pile integrity and depth analysis at different locations of Raxaul- Narkatiaganj section spreaded over 40.64Km (East Central Railway, Government of India, Rs.8.28 Lakhs) Consultant Name: P. Chakrabortty; A. Hegde; R. Bag
3. Proof Checking of Structural Design for Construction of Govt. Medical College & Hospital, Purnea (Bihar Medical Services & Infrastructure Corporation Limited, Rs.11.36 Lakhs) Consultant Name: Koushik Roy
4. Proof checking of structural design of officer quarter for Railways (Ishan Engineers and Architects Pvt.Ltd. Patna, Rs.3.00 Lakhs) Consultant Name: Vaibhav Singhal
5. Proof Checking of Structural Design of G+14 Officer's Quarter for Railways (Ishan Engineers and Architects (P) Ltd., Patna, Bihar, Rs.3.01 Lakhs) Consultant Name: Vaibhav Singhal
6. Review of the Structural and Geotechnical Design for ISBT Patna, Bihar (Shapoorji Palonji and Company Private Limited, Rs.6.47 Lakhs) Consultant Name: Vaibhav Singhal
7. Structural Design Review of Budha Smriti Stupa and Museum at Vaishali, Bihar (Building Construction Department, Rs.17.25 Lakhs) Consultant Name: Vaibhav Singhal and Koushik Roy
8. Vetting of structural design and drawings of civil structures for Waterways promenade, Elevatedflyover,Communitycum cultural center and Community (BUIDCo,Rs.7.02Lakhs) Consultant Name: Avik Samanta and Syed K K Hussaini
9. Vetting of structural design of Government Medical College Purnea

Other Activities

Fellow - Professional Bodies

1. Pradipta Chakrabortty (2009) Memorial University, Newfoundland, Canada

Member - Professional Bodies

1. Amarnath Hegde (2017) Indian Science Congress Association
2. Amarnath Hegde (2014) Indian Geotechnical Society

3. Amarnath Hegde (2016) American Society of Civil Engineers
4. Amarnath Hegde (2017) International Society for Soil Mechanics and Geotechnical Engineering
5. Amarnath Hegde (2017) The Institution of Engineers(India)
6. Avik Samanta (2018) EERI
7. Avik Samanta (2014) Indian Society of Earthquake Technology
8. Avik Samanta (2018) ASCE
9. Pradipta Chakrabortty (2017) Indian Geotechnical Society
10. Pradipta Chakrabortty (2003) Indian Society of Earthquake Technology
11. Subrata Hait (2005) Eco-Ethics International Union, Germany
12. Subrata Hait (2009) World Toilet Organization, Singapore
13. Subrata Hait (2012) Institution of Engineers (India)
14. Subrata Hait (2018) American Society of Agronomy (ASA)
15. Subrata Hait (2014) American Society of Civil Engineers (ASCE)
16. Subrata Hait (2018) Soil Science Society of America (SSSA)
17. Subrata Hait (2014) International Water Association (IWA)
18. Syed Khaja Karimullah Hussaini (2018) American Association of Civil Engineers
19. Syed Khaja Karimullah Hussaini (2018) International Geosynthetics Society
20. Syed Khaja Karimullah Hussaini (2018) Canadian Geotechnical Society
21. Trishikhi Raychoudhury (2018) International Water Association (IWA)
22. Trishikhi Raychoudhury (2017) American Chemical Society (ACS)
23. Vaibhav Singhal (2018) Earthquake Engineering Research Institute
24. Vaibhav Singhal (2018) American Society of Civil Engineers
25. Vaibhav Singhal - National Information Centre of Earthquake Engineering

Member - Editorial Board

1. Amarnath Hegde (2017) *Member* - International Journal of Research Innovations in Civil Engineering
2. Amarnath Hegde (2018) *Member, Editorial Board* - Transportation and Transit Systems
3. Amarnath Hegde (2016) *Editorial board member* - Journal of Advanced Research in Civil and Environmental Engineering
4. Pradipta Chakrabortty (2016) *Associate Editor* - Journal of Advanced Research in Civil and Environmental Engineering

Awards & Honours

1. Amarnath Hegde (2018) *Albert Nelson Marquis Lifetime Achievement Award by Marquis Whos Who, USA.*
2. Vaibhav Singhal (2017) *Best Teacher Award for UG course in the Department of Civil and Environmental Engineering, Indian Institute of Technology Patna*
3. Subrata Hait (2017) *Bharat Vikas Award (For outstanding performance in the field of Solid and Hazardous Waste Management)*
4. Trishikhi Raychoudhury (2018) *GYTI appreceation award (MTech and BTech student)*
5. Amarnath Hegde (2017) *IEI Young Engineers Award in Civil Engineering Discipline*
6. Amarnath Hegde (2018) *Nominated as a member of TC218: Technical Committee on Reinforced Fill Structures, International Society of Soil Mechanics and Geotechnical Engineering.*

Visits Abroad by Faculty Members

1. Amarnath Hegde - To attend 19th International Conference on Soil Mechanics and Geotechnical Engineering (Seoul, Republic of Korea) 17-22 September, 2017
2. Avik Samanta - Attending 8th International Conference on Structural Engineering and Construction Management, 2017 (Kandy, Sri Lanka) 7-9 December 2017

Invited Lectures by Faculty Members

1. Probabilistic seismic slope stability analyses of rock fill tailing dams: A case study *by* Amarnath Hegde (Seoul, Republic of Korea)
2. Performance Evaluation of Bamboo made Geocells in Soft Ground Improvement *by* Amarnath Hegde (Ahmedabad, Gujarat)
3. Civil Engineering applications of Kosi silt *by* Amarnath Hegde (Patna)
4. Water and wastewater treatment *by* Trishikhi Raychoudhury (NSIT)
5. Confined Masonry Buildings as Low-Cost Engineered Housing *by* Vaibhav Singhal (IIT Kanpur-BMTPC, Noida)
6. Testing Protocols for Performance Evaluation of Masonry Panels *by* Vaibhav Singhal (IIT Kanpur-BMTPC, Noida)
7. Principles of Earthquake Resistant Buildings & Architectural Considerations *by* Vaibhav Singhal (Bihar State Disaster Management Authority, Patna)
8. Seismic Evaluation and Retrofitting of Reinforced Concrete Building *by* Vaibhav Singhal (Bihar State Disaster Management Authority, Patna)

Short-Term Courses, Training Programmes and Workshops organised

1. Earthquake Resistant Design Based on Recently Revised Seismic Codes (3 days)

Computer Science and Engineering

Faculty Members

Prof. Pushpak Bhattacharyya Professor	Natural Language Processing, Machine Learning, Cross Lingual IR, Information Extraction
Dr. Ashok Singh Sairam Associate Professor	Network Security, Routing in Wireless Networks, Network Bandwidth Monitoring and Management
Dr. Asif Ekbal Associate Professor	Natural Language Processing, information extraction, machine learning applications, Opinion Mining, and Text mining
Dr. Jimson Mathew Associate Professor	Fault Tolerant Computing; VLSI Design and Methodologies; Reliability Aware Designs; Hardware Security
Dr. Rajiv Misra Associate Professor	Mobile Computing, Adhoc Networks and Sensor Networks
Dr. Somanath Tripathy Associate Professor	Lightweight Cryptography, Computer Security, Network Security
Dr. Abyayananda Maiti Assistant Professor	Online Algorithms, Complex Networks, Social Networks, Big Data
Dr. Arijit Mondal Assistant Professor	CAD for VLSI, Analog EDA
Dr. Joydeep Chandra Assistant Professor	Peer-to-Peer Systems, Online Social Networks, Complex Networks, Distributed Systems
Dr. Raju Halder Assistant Professor	Formal Methods for Analysis and Verification, Information Systems Security, Programming Languages
Dr. Samrat Mondal Assistant Professor	Security & Privacy, Database Systems and Smart Energy Management
Dr. Sourav Kumar Dandapat Assistant Professor	Wireless Networking; Mobile Social Computing; Human Computer Interaction
Dr. Sriparna Saha Assistant Professor	Pattern Recognition, Multiobjective Optimization, Bio-Text Mining, Bioinformatics, Soft Computing
Dr. Suman Kumar Maji Assistant Professor	Image Processing, Medical Imaging, Bioinformatics, Computer Vision
Dr. Kanchan Manna Assistant Professor	Network-on-Chip (NoC)-based Multicore Systems Design and Test, Temperature/ Thermal-aware System Design, Fault Tolerant System Design, Reliability-aware System Design, Multicore Architecture for Big Data and Graph Analytics and Computer Architecture

Academic Programs

- B.Tech in Computer Science and Engineering
- M.Tech in Computer Science and Engineering
- Ph.D Program

Research & Development Activities

Papers Published in Journals

1. Agostino Cortesi, Pietro Ferrara, Raju Halder, and Matteo Zanioli, Combining Symbolic and Numerical Domains for Information Leakage Analysis, *LNCS Transactions on Computational Science*, Volume 31: 98-135. (2018).
2. S. Akhtar, D. Gupta, A. Ekbal and P. Bhattacharayya, Feature Selection and Ensemble Construction: A Two-step Method for Aspect Based Sentiment Analysis, *Knowledge-Based Systems*, Volume 125 (2017).
3. Anoop Kunchukuttan and Pushpak Bhattacharyya, Leveraging Orthographic Similarity for Multilingual Neural Transliteration, *Transactions of Association of Computational Linguistics (TACL), Accepted*, -.
4. Sapana Rani, Dileep Kumar Koshley and RajuHalder, Partitioning-Insensitive Watermarking Approach for Distributed Relational Databases, *LNCS Transactions on Large-Scale Data- and Knowledge-Centered Systems*, Volume 36: 172-192 (2017).
5. Jos A. V. Prakash, Babita R. Jose, Jimson Mathew, A Differential Quantizer-Based Error Feedback Modulator for Analog-to-Digital Converters, *IEEE Transactions on Circuits and Systems*, 65-II(1): 21-25 (2018).
6. S. Saha, A Line Symmetry Based Genetic Clustering Technique: Encoding Lines in Chromosomes, *International Journal of Machine Learning and Cybernetics*, accepted (2017).
7. Sumit Mishra, Sriparna Saha and Samrat Mondal, A Multiobjective Optimization based Entity Matching Technique for Bibliographic Databases, *Expert Systems with Applications*, Vol: 65, pp. 100-115 (2016).
8. S. Saha, S. Mitra and R. K. Yadav, A Stack Based Ensemble Framework for Detecting Cancer-microRNA Biomarkers, *Genomics, Proteomics & Bioinformatics,* 15 (381-388) (2017).
9. Nemi Ch. Rathore and Somanath Tripathy, A Trust-based Collaborative Access Control Model with Policy Aggregation for Online Social Networks , *Social Network Analysis and Mining*, (2018).
10. S. Saha, R. Das and P. Pakray, Aggregation of multi-objective fuzzy symmetry-based clustering techniques for improving gene and cancer classification, *Soft Computing*, accepted (2017).
11. J. Jacob, Babita R. Jose, Jimson Mathew, An antenna selection scheme with MRE and AWC for decision fusion in cognitive radio, *Trans. Emerging Telecommunications Technologies*, 28(10) (2017).
12. S. Banerjee, Jimson Mathew, An Optimal Leakage-Aware Approach for Nano-CMOS Post-Physical-Optimization, *Journal of Low Power Electronics*, 13(4) 642-648 (2017).
13. Ram Narayan, Rajiv Misra, Approximating Common Control Channel Problem in Cognitive Radio Networks, *IEEE Systems Journal*, PP (99).
14. R S Chakraborty, R R Jeldi, I Saha, Jimson Mathew:, Binary Decision Diagram Assisted Modeling of FPGA-Based Physically Unclonable Function by Genetic Programming, *IEEE Transactions Computers*, 66 (6) 971-981 (2017).
15. M. Pal, S. Saha and S. Bandyopadhyay , DECOR: Differential Evolution using Clustering based Objective Reduction for Many-Objective Optimization, *Information Sciences*, 423 (200-218) (2018).
16. A.Pratap, R.Singhal, Rajiv Misra, SK Das , Distributed Randomized k-Clustering based PCID Assignment for Ultra-Dense Femtocellular Networks, *IEEE Transactions on Parallel and Distributed Systems*, DOI:10.1109 (2018).
17. Shailendra Shukla, Rajiv Misra, Animesh Prasad, Efficient disjoint boundary detection algorithm for surveillance capable WSNs, *Journal of Parallel and Distributed Computing*, 109: 245-257 (2017).
18. Nilotpal Chakraborty, Arijit Mondal, Samrat Mondal, Efficient Scheduling of Non-Preemptive Appliances for Peak Load Optimization in Smart Grid , *IEEE Transactions on Industrial Informatics (Accepted for publication)*, (2017).
19. S. Saha, Enhancing point symmetry-based distance for data clustering, *Soft Computing*, 22 (2018).
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21. S. Saha, S. Mitra, S. Kramer, Exploring Multiobjective Optimization for Multi- view Clustering, *ACM Transactions on Knowledge Discovery from Data*, accepted (2018).
22. Md. Shad Akhtar, Deepak Kumar Gupta, Asif Ekbal, Pushpak Bhattacharyya, Feature selection and ensemble construction: A two-step method for aspect based sentiment analysis, *Knowl.-Based Syst.*, 125: 116-135 (2017).

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25. Sumit Mishra, Sriparna Saha and Samrat Mondal, GAEMTBD: Genetic Algorithm based Entity Matching Techniques for Bibliographic Databases, *Springer Applied Intelligence*, Vol:47 pp 197-230 (2017).
26. Jimson Mathew, Rajat Subhra Chakraborty, Dhiraj K. Pradhan, Guest Editorial: Special Issue on Secure and Fault-Tolerant Embedded Computing, *ACM Trans. Embedded Comput. Syst.* 16(4): 92:1-92:2 (2017).
27. S. Saha, M. Kaur, Identification of Topology Preserving, Class-Relevant Feature Sub- sets using Multiobjective Optimization, *Soft Computing*, accepted (2018).
28. Sumit Mishra, Samrat Mondal and Sriparna Saha, Improved Solution to the Non-Domination Level Update Problem, *Elsevier Applied Soft Computing*, Vol: 60, pp: 336-362 (2017).
29. Nilotpal Chakraborty, Arijit Mondal, Samrat Mondal, Intelligent Scheduling of Thermostatic Devices for Efficient Energy Management in Smart Grid, *IEEE Transactions on Industrial Informatics*, 13, 2899-2910 (2017).
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36. Ajay Pratap, Rajiv Misra, Random Graph Coloring-Based Resource Allocation for Achieving User Level Fairness in Femtocellular LTE-A Networks, *Wireless Personal Communications*, 98(2): 1975-1995 (2) (2018).
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39. Sreelekha S. and Pushpak Bhattacharyya, Role of Morphology Injection in SMT: A Case Study from Indian Language Perspective, *ACM Transactions on Asian and Low-Resource Language Information Processing (TALLIP 2017)*, (2017).
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41. S. Saha, S. Acharya, Kavya K, Saisree, Simultaneous Clustering and Feature Weighting using Multiobjective Optimization for Identifying Functionally Similar miRNAs, *IEEE Journal of Biomedical and Health Informatics*, accepted (2017).
42. Ram Narayan Yadav, Rajiv Misra, Sourabh Bhagat, Spectrum access in cognitive smart-grid communication system with prioritized traffic, *AdHoc Networks*, 65: 38-54 (2017).
43. Kanchan Manna, Priyajit Mukherjee, Santanu Chattopadhyay, Indranil Sengupta , Thermal-Aware Application Mapping Strategy for Network-on-Chip Based System Design , *IEEE Trans. on Computers*, 67(4), 528-542 (2018) (accepted before joining to IIT Patna but published after joining to IIT Patna).
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Papers Presented in Conferences

1. Aditya Joshi,Pushpak Bhattacharyya and Mark Carman , Automatic Sarcasm Detection: A Survey, ACM Computing Survey (ACM-CSUR), (2017)
2. Hanumant Redkar, Rajita Shukla, Sandhya Singh, Jaya Saraswati, Laxmi Kashyap, Diptesh Kanojia, Preethi Jyothi, Malhar Kulkarni and Pushpak Bhattacharyya, Hindi Wordnet for Language Teaching: Experiences and Lessons Learnt, GWC 2018 (Accepted), Singapore (2018)
3. Joe Cheri Ross, Abhijit Mishra, Kaustuv Kanti Ganguli, Pushpak Bhattacharyya, Preeti Rao, Identifying Raga Similarity Through Embeddings Learned from Compositions Notation, The 18th International Society for Music Information Retrieval Conference ISMIR 2017, Suzhou, China (2017)
4. Md. Imran Alam, Raju Halder, Harshita Goswami and Jorge Sousa Pinto, K-Taint: An Executable Rewriting Logic Semantics for Taint Analysis in the K Framework., Proc. of the 13th International Conference on Evaluation of Novel Approaches to Software Engineering (ENASE 18), Funchal, Madeira, Portugal (2018)
5. Anoop Kunchukuttan and Pushpak Bhattacharyya , Learning variable length units for SMT between related languages via Byte Pair Encoding, 1st Workshop on Subword and Character level models in NLP 2017(collocated with EMNLP), Copenhagen, Denmark (2017)
6. Abhijit Mishra, Diptesh Kanojia, Seema Nagar, Kuntal Dey and Pushpak Bhattacharyya, Scanpath Complexity: Modeling Reading Effort using Gaze Information,*AAAI, 2017*, San Fransisco, California, USA (2017)
7. Raksha Sharma, Arpan Somani, Lakshya Kumar and Pushpak Bhattacharyya, Sentiment Intensity Ranking among Adjectives Using Sentiment Bearing Word Embeddings, EMNLP 2017, Denmark. (2017)
8. Kevin Patel and Pushpak Bhattacharyya, Towards Lower Bounds on Number of Dimensions for Word Embeddings , IJCNLP17, Taipei, Taiwan (2017)
9. D. Gupta, A. Ekbal, S. Saha and P. Bhattacharyya, A Deep Neural Network based Approach for Entity Extraction in Code-Mixed Indian Social Media Text, LREC2018-(Accepted), Japan (2018)
10. A. Sudarsanan, M. George, B. R. Jose, Jimson Mathew , A Global Image Descriptor Based Navigation System for Indoor Environment , ICACC *2017, Procedia Computer Science,* Kochi (2017)
11. S. Akhtar, A. Kumar, D. Ghosal, A. Ekbal and P. Bhattacharyya , A Multi-layer Perceptron based Ensemble Technique for Fine-grained Financial Sentiment Analysis, Empirical Methods for Natural Language Processing (EMNLP), 2017, Denmark. (2017)
12. R. Chakraborty, M. Bhavsar, S. K. Dandapat, J. Chandra, A Network Based Stratification Approach for Extracting Summary Tweets for News Articles, WISE, Moscow, Russia (2017)
13. N. Saini, S. Chourasia, S. Saha and P. Bhattacharyya , A Self Organizing Map based Multi-objective Framework for Automatic Evolution of Clusters, *International Conference on Neural Information Processing (Core rank A)*, Guangzhou, China (2017)
14. Sapana Rani, Dileep Kumar Koshley and Raju Halder, Adapting MapReduce for Efficient Watermarking of Large Relational Dataset, Proc. of the 16th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (IEEE TrustCom 17), Sydney, Australia (2017)
15. KM Pooja, Samrat Mondal and Joydeep Chandra, An Unsupervised Heuristic Based Approach for Author Name Disambiguation, International Conference on COMmunication Systems & NETworkS, Bangalore (2018)
16. Srikata Pradhan and Somanath Tripathy , CAP: Collaborative Attack on Pastry, ACM SIN, Jaipur (2017)
17. N. Saini, S. Saha and P. Bhattacharyya, Cascaded SOM: An Improved Technique for Automatic Email Classification, IJCNN 2018 (Core rank A), Brazil (2018)
18. Aditya Gupta, Nilotpal Chakraborty and Samrat Mondal, CETD: An Efficient Clustering Based Energy Theft Detection Technique in Smart Grid, IEEE TENSYMP, Kochi, India (2017)
19. Somanath Tripathy and Praveen Kumar , CookiesWall: Preventing Session Hijacking Attacks Using Client Side Proxy, NSS, Helsinki, Finlnad (2017)
20. Smita Roy, Samrat Mondal, Asif Ekbal and Maunendra Sankar Desarkar, CRDT: Correlation Ratio Based Decision Tree Model for Healthcare Data Mining, IEEE 16th International Conference on BioInformatics and BioEngineering, Taichung, Taiwan (2016)
21. Yashwant Singh Patel, Rajiv Misr , Distributed Algorithm for Balanced VM Placement for Heterogeneous Cloud Data Centers, ICDCN 2018, IIT(BHU) Varanasi (2018)

22. Saikh, Tanik and Ghosal, Tirthankar and Ekbal, Asif and Bhattacharyya, Pushpak: , Document Level Novelty Detection: Textual Entailment Lends a Helping Hand,*14th International Conference on Natural Language Processing (ICON-2017)*, Jadavpur University, Kolkata, India (2017)
23. Manish Bhanu, Joydeep Chandra and Joao Mendes Moreira, Enhancing traffic model of big cities: Network Skeleton & Reciprocity, International Conference on COMmunication Systems & NETworkS, Bangalore (2018)
24. S. Yadav, A. Ekbal, S. Saha, P. Bhattacharyya, Entity Extraction in Biomedical Corpora: An Approach to Evaluate Word Embedding Features with PSO based Feature Selection, EACL 2017 (Core rank A), Valencia, Spain (2017)
25. D Paul, S Saha, J Mathew, Evolutionary Based Multiobjective optimization Subspace Clustering , GECCO2018- (Core rank A), Japan (2018)
26. Akash Yadav, Joydeep Chandra and Ashok SIngh Sairam, ExpertCrowd: An Expert Worker Assignment Framework for budget, International Conference on Distributed Computing and Networking, Varanasi (2018)
27. A. Majumder, A. Ekbal and S. Naskar, Feature Selection and Class Weight Tuning using Genetic Algorithm for Bio-molecular Event Extraction., NLDB 2017, Belgium (2017)
28. S. Akhtar, S. Kohail, A. Kumar, A. Ekbal and C. Biemann, Feature Selection using Multiobjective Optimization for Aspect based Sentiment Analysis, NLDB 2017, Belgium (2017)
29. Sabyasachi Kamila, Md. Hasanuzzaman, Asif Ekbal, Pushpak Bhattacharyya and Andy Way, Fine-grained Temporal Orientation and its Relationship with Psycho-demographic Correlates, NAACL-HLT 2018 (Accepted) , USA (2018)
30. A. Chandra, H. Garg, and A. Maiti, How Fair Is Your Network to New and Old Objects?: A Modeling of Object Selection in Web Based User-Object Networks, Web Information Systems Engineering (WISE) , Moscow, Russia (2017)
31. R. Salgotra, U. Singh and S. Saha, Improved Cuckoo Search with Better Search Capabilities For Solving CEC2017 Benchmark Problems , IEEE CEC 2018 (Core rank B), Brazil (2018)
32. Abhijit Mishra, Kuntal Dey and Pushpak Bhattacharyya, Learning Cognitive Features from Gaze Data for Sentiment and Sarcasm Classification Using Convolutional Neural Network,*ACL 2017*, Vancouver, Canada (2017)
33. Tanik Saikh, Debajyoty Banik, Asif Ekbal and Pushpak Bhattacharyya, Machine Translation Evaluation Metrics for Recognizing Textual Entailment, 19th International Conference on Computational Linguistics and Intelligent Text Processing, Hanoi, Vietnam (2018)
34. S. Mishra, S. Saha, S. Mondal, MBOS: Modified Best Order Sort Algorithm for Performing Non-dominated Sorting, IEEE CEC 2018 (Core rank B) , Brazil (2018)
35. S. Yadav, A. Ekbal, S. Saha and P. Bhattacharyya, Medical Sentiment Analysis using Social Media: Towards building a Patient Assisted System, LREC 2018 (Core rank C), Miyazaki (Japan) (2018)
36. V. Kumar Rai, Somanath Tripathy and Jimson Mathew, Memristor based Random Number Generator: Architectures and Evaluation, ICSCC, Kurukshetra (2017)
37. Nilotpal Chakraborty, Arijit Mondal, Samrat Mondal, MinPeak: An Intelligent Scheduler for Non-Preemptive Appliances in Smart Grid, IEEE TENSYMP, Kochi, Kerala (2017)
38. D. Gupta, A. Ekbal, S. Saha and P. Bhattacharyya, MMQA: A Multi-domain Multi-lingual Question-Answering Framework for English and Hindi., LREC2018- (accepted), Japan (2018)
39. Nilesh Chakraborty, Gurpinder Singh Randhawa, Kuntal Das and Samrat Mondal , MobSecure: A Shoulder Surfing Safe Login Approach Implemented On Mobile Device, 6h International Conference on Advances in Computing and Communications , Kochi, India (2016)
40. Sumit Kumar Tetarave, Somanath Tripathy and R. K. Ghosh, MP2P: Mobile P2P over GSM for efficient file sharing, ICDCIT18, Bhubaneswar (2013)
41. S. Yadav, A. Ekbal, S. Saha and P. Bhattacharyya, Multi-task Learning Framework for Mining Crowd Intelligence towards Clinical Treatment, NAACL HLT 2018 (Core rank A) , New Orleans (2018)
42. A. Khan, E. L. Mencia, A. Ekbal and J. Furnkranz, Multiobjective Optimization based Feature Selection Technique for Multi-label Sentiment Analysis, NLDB 2017, Belgium (2017)
43. Jaishree Mayank, Arijit Mondal , Non-preemptive Multiprocessor Scheduling for Periodic Real-Time Tasks, ISED, Durgapur (2017)

44. Nilesh Chakraborty, S.Vijay Anand, Gurpinder Randhawa and Samrat Mondal, On Designing Leakage-Resilient Vibration Based Authentication Techniques, IEEE Trustcom/BigDataSE/ISPA, Tianjin, China (2016)
45. Abha Kumari, Joydeep Chandra and Ashok Singh Sairam, Optimizing Flow setup time in SDN, International Conference on COMmunication Systems & NETworkS, Bangalore (2018)
46. *M. George, B R Jose, Jimson Mathew,* Performance Evaluation of KCF based Trackers using VOT Dataset, NIT Kurushetra (2017)
47. Tanik Saikh, Sudip Kumar Naskar, and Asif Ekbal, Recognizing Textual Entailment Using Weighted Dependency Relations, CICLing 2018, Hanoi, Vietnam (2018)
48. *A.Adeyemo, A. Jabir, Jimson Mathew,* Reliable gas sensing with memristive array, 23 rd IEEE International On-Line Testing Symposium, Greece (2017)
49. A. Pratap, R. Misra, SK. Das , Resource Allocation to Maximize Fairness and Minimize Interference for Maximum Spectrum Reuse in 5G Cellular Networks, 19th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WOWMOM), 2018, Chania, Greece (2018)
50. Aditya Joshi, Pranav Goel, Pushpak Bhattacharyya and Mark Carman , Sarcasm Target Identification: Dataset and An Introductory Approach, LREC 2018, Japan (2018)
51. A. Chandra, H. Garg, and A. Maiti, selection behavior of new and old users in online emerging user-object networks , International Conference on Advances in Social Networks Analysis and Mining (ASONAM), Sydney, Australia (2017)
52. Sanjeet Kumar Nayak and Somanath Tripathy, SEMFS: Secure & Efficient Multi-keyword Fuzzy Search for Cloud Storage, ICISS, IIT Bombay (2017)
53. S. Kamila, A. Ekbal and P. Bhattacharyya, Sentence Level Temporality Detection using an Implicit Time-sensed Resource, LREC2018- (accepted), Japan (2018)
54. Suryakanta Panda and Samrat Mondal, SG-PASS: A Safe Graphical Password Scheme to Resist Shoulder Surfing and Spyware Attack, 8th International Conference on Human Computer Interaction, Pilani, India (2016)
55. Don Kurian Dennis, Ayushi Priyam, Sukhpreet Singh Virk, Sajal Agrawal, Tanuj Sharma, Arijit Mondal and Kailash Chandra Ray, Single Cycle RISC-V Micro Architecture Processor and its FPGA Prototype, ISED, Durgapur (2017)
56. Shad Akhtar, Palaash Sawant, Sukanta Sen, Asif Ekbal, Pushpak Bhattacharyya and Andy Way, Solving Data Sparsity for Aspect based Sentiment Analysis using Cross-linguality and Multi-linguality, NAACL-HLT 2018 (Accepted), USA (2018)
57. Ankit Maheshwari and Samrat Mondal, SPOSS: Secure Pin-based-authentication Obviating Shoulder Surfing, 12th International Conference on Information and Systems Security, Jaipur, India (2016)
58. T. Ghoshal, A. Devi, S. Tiwari, A. Ekbal and P. Bhattacharyya, TAP-DLND 1.0 : A Corpus for Document Level Novelty Detection. , LREC2018- (accepted)., Japan (2018)
59. M. Hasanuzzaman, S. Kamila, M. Kaur, S. Saha and A. Ekbal, Temporal Orientation of Tweets for Predicting Income of User , Association for Computational Linguistics (ACL) (Core rank A*), Vancouver, Canada (2017)
60. T. Shaikh, S. Naskar, A. Ekbal and S. Bandyopadhyay, Textual Entailment using Machine Translation Evaluation Metrics, CICLING 2017, Budapest, Hungary (2017)
61. Avijit Gayen, Maitry Bhavsar, Joydeep Chandra, Towards a Social Trust Based Measure of Scientific Productivity, IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining, Sydney (2017)
62. Dileep Kumar Koshley, Sapana Rani and Raju Halder., Towards Generalization of Privacy Policy Specification and Property-based Information Leakage, Proc. of the 13th International Conference on Information Systems Security (ICISS 17), IIT Bombay, India (2017)
63. Nilesh Chakraborty and Samrat Mondal, Towards Improving Storage Cost and Security Features of Honeyword Based Approaches, 6th International Conference on Advances in Computing and Communications , Kochi, India (2016)
64. Sumit Mishra, Sriparna Saha and Samrat Mondal, Unsupervised Method to Ensemble Results of Multiple Clustering Solutions for Bibliographic Data, IEEE World Congress o*n Computational Intelligence*, Donostia - San Sebastián, Spain (2017)
65. Sumit Kumar Tetarave, Somanath Tripathy and R. K. Ghosh , VChord: An efficient file sharing on LTE/GSM Network, ICDCN, Varanasi (2018)

Sponsored Research Projects

1. A Computational Model for 3D Fluorescence Microscopy Super Resolution(SERB,Rs.15.09 Lakhs) (PI : Suman Kumar Maji)
2. A Platform for Cross-lingual and Multi-lingual Event Monitoring in Indian Languages (MHRD and MeiTY, Govt. of India, Rs.85.00 Lakhs) (PI : Prof. Pushpak Bhattacharyya and Asif Ekbal)
3. A Software Tool for the Planning and Design of Smart Micro Power Grids (MHRD, Ministry of Power, Rs.86.00 Lakhs) (PI : Arijit Mondal, R K Behera)
4. ATL IIT AI Lab (Accenture Pvt. Limited, Rs.65.00 Lakhs) (PI : P. Bhattacharyya, A Ekbal, S. Saha)
5. Center of Excellence for Natural Language Processing IITP (Elsevier, Rs.213.00 Lakhs) (PI : P. Bhattacharyya, A Ekbal, S. Saha)
6. Development of CDAC Digital Forensic Centre with Artificial Intelligence based Knowledge Support Tools (MeitY and Government of Bihar, Rs.91.00 Lakhs) (PB, JM, AE, SS, JC, AM, SD)
7. Development of solution to defend against Collaborative attacks in Peer-to-Peer networks (DEITY, Rs.35.40 Lakhs) (PI : Somanath Tripathy)
8. ezDI Research Lab on Health Informatics at IITP (ezDI, Rs.145.00 Lakhs) (PI : P. Bhattacharyya, A Ekbal, S. Saha)
9. GIAN course Energy Management in Cloud Data Centers (MHRD, Rs.5.44 Lakhs) (PI : Rajiv Misra)
10. HEMAT in Judicial Domain (TDIL, MeiTY, Govt. of India, Rs.214.00 Lakhs) (PI : Prof. Pushpak Bhattacharyya and Asif Ekbal)
11. Information Leakage Analysis of Database Query Languages (DST-SERB,Rs.19.92Lakhs) (PI : Raju Halder)
12. Sentiment Analysis and Image Processing (SkyMap Global Private Limited, Singapore,Rs.17.37 Lakhs) (PI : P. Bhattacharyya, A Ekbal, S. Saha)
13. Shusrut: ezDI Research Lab on Health Informatics (ezDI, Rs.145.00 Lakhs) (PI : Prof. Pushpak Bhattacharyya (Lead))
14. Special Manpower Development Program - Chip to System Design (SMDP-C2SD) (DeitY) (PI : K. C. Ray)

Consultancy Projects

1. Computational Methods in Smart Grid: Blackout Prediction (BOSCH Singapore,Rs.16.00 Lakhs) Consultant Name: Jimson Mathew
2. Advising on NLP and ML (Bluepool, Rs.5.50 Lakhs) Consultant Name: Prof. Pushpak Bhattacharyya
3. Industrial consultancy: Machine Learning for Blackout Prediction (Robert Bosch,Rs.7.00Lakhs) Consultant Name: Prof. Pushpak Bhattacharyya, Asif Ekbal and Sriparna Saha
4. Information Extraction on SMS related to LG products (LGsoft Bangalore, Rs.5.00 Lakhs) Consultant Name: Prof. Pushpak Bhattacharyya, Asif Ekbal and Sriparna Saha
5. Interoperable Intelligent System and Network Security Framework (MICROSEC Singapore, Rs.7.20 Lakhs) Consultant Name: Jimson Mathew

Other Activities

Member - Professional Bodies

1. Arijit Mondal (2017) IEEE
2. Asif Ekbal (2017) ACM
3. Asif Ekbal (2017) Association for Computational Linguistics
4. Asif Ekbal (2017) IEEE
5. Joydeep Chandra - IEEE
6. Pushpak Bhattacharyya (2018) Bureau of Indian Standards under the ministry of consumer affairs.
7. Pushpak Bhattacharyya (2018) Computer and Communication Sciences (CCSD), Indian Statistical Institute
8. Pushpak Bhattacharyya - ACL
9. Pushpak Bhattacharyya - ACM

10. Rajiv Misra (2017) IEEE
11. Raju Halder (2018) IEEE
12. Samrat Mondal (2011) IEEE
13. Somanath Tripathy (2006) Cryptology Research Society of India
14. Somanath Tripathy (2017) IEEE
15. Sriparna Saha - Association for Computing Machinery
16. Sriparna Saha - International Association of Computer Science and Information Technology (IACSIT)
17. Sriparna Saha - Institute of Electrical and Electronics Engineers (IEEE)
18. Sriparna Saha - International Association of Engineers (IAENG)
19. Sriparna Saha - Indian Unit for Pattern Recognition and Artificial Intelligence (IUPRAI).
20. Sriparna Saha - Bioclues Organization (An affiliate of International Society for Computational Biology and Asia-Pacific Bioinformatics Network)
21. Sriparna Saha - The Association of Computer, Electronics and Electrical Engineers (ACEEE)
22. Suman Kumar Maji - ISCA

Member - Editorial Board

1. Asif Ekbal (2017) *Associate Editor* - Sadhana
2. Sriparna Saha (2017) *Associate Editor* - ACM Transactions on Asian Low Resource Language Information Processing

Awards & Honours

1. Somanath Tripathy (2017) *Best Technical Poster Award in GCCS 2017, By Govt of India*
2. Suman Kumar Maji (2017) *SERB Early Career Research Award*

Fellowships

1. Asif Ekbal (2017) *Young Faculty Research Fellowship*
2. Asif Ekbal (2017) *Received Japanese Society for Promotion of Science (JSPS) Invitation Fellowship*
3. Sriparna Saha (2017) *Humboldt Research Fellowship*

Patents (filed / granted)

1. Patent Name:A Hybrid Multi-Bit Random Number Generator; Patent Owner: Vikash Kumar Rai, Somanath Tripathy and Jimson Mathew
2. Patent Name:System and Method for Activity Based User Authentication; Patent Owner: Sourav Kumar Dandapat, Abyayananda Maiti
3. Patent Name:System and Method for Detecting Change in Occupancy Status ofa Slot Over a Platform; Patent Owner: Z. Easa, D. Gupta,Jimson Mathew, A. Mathew
4. Patent Name:System and Method for Determining Company Performance; Patent Owner: Abyayananda Maiti

Visits Abroad by Faculty Members

1. Somanath Tripathy - To present paper (Helsinki, Finland) August 21–23, 2017
2. Asif Ekbal - Research Visit (University of Hamburg) 2 months
3. Asif Ekbal - Research Visit (L3S Research Centre) 3 days
4. Asif Ekbal - Attending NLDB 2017 (Belgium) 5 days
5. Sriparna Saha - Humboldt Research Fellowship (Visited Institute of Informatik, Johannes Gutenberg-Universitat Mainz) April- August, 2017

6. Joydeep Chandra - Attending ASONAM 2017 (Sydney) 31 July - 03 August 2017
7. Abyayananda Maiti - Paper presentation in ASONAM 2017 (Sydney, Australia) 1 week

Invited Lectures by Faculty Members

1. Security Issues in Cloud Storage *by* Somanath Tripathy (NIT Patna)
2. Waiting for 3 hours in freezing cold is so much fun!:: A Computational and Cognitive Study of Sarc *by* Pushpak Bhattacharyya (Hanoi)
3. From Coarse-grained to Fine-grained Sentiment Analysis: The need of the hour *by* Asif Ekbal (IIT Indore, India)
4. Aspect Level Sentiment Analysis, A Trend towards Machine Learning: Techniques and Applications *by* Asif Ekbal (Delhi)
5. Aspect based Sentiment Analysis, International Workshop on Data Analytics and Machine Intelligence *by* Asif Ekbal (Katmandu, Nepal)
6. Language Technology for Digital E-governance: An Indian Perspective *by* Asif Ekbal (Patna University)
7. Sentiment Analysis *by* Asif Ekbal (College of Textile Technology, Berhampore)
8. Sentiment Analysis and Sarcasm Detection *by* Pushpak Bhattacharyya (Accenture, USA)
9. Sentiment Analysis and Sarcasm Detection *by* Pushpak Bhattacharyya (Apple, USA)
10. Sentiment Analysis and Sarcasm Detection *by* Pushpak Bhattacharyya (NVIDIA, USA)
11. Sentiment Analysis and Sarcasm Detection *by* Pushpak Bhattacharyya (Stanford University)
12. NLP and ML *by* Pushpak Bhattacharyya (NIT Durgapur)
13. Unsupervised Classification *by* Sriparna Saha (IIITM-Gwalior)
14. Big Data and Analytics *by* Sriparna Saha (Bihar Industries Association, Patna)
15. Application of Multi-objective Optimization in Bioinformatics *by* Sriparna Saha (Max Health Care, New Delhi)
16. Symposium on Clustering and Text-mining *by* Sriparna Saha (UPES Dehradun)
17. Department of Statistics, Patna University *by* Sriparna Saha (eHealth)
18. Clustering Algorithm *by* Sriparna Saha (Netaji Subhas Institute of Technology, Bihta, Patna)
19. Multiobjective Multi-view Clustering *by* Sriparna Saha (Department of Informatics, University of Mainz, Germany)
20. Security and Usability Issues of Password Based Authentication Scheme *by* Samrat Mondal (Albertian Institute of Science and Technology, Kochi, India)
21. Password Security *by* Samrat Mondal (Muthoot Institute of Technology & Science, Kochi, India)
22. Network Science and Engineering *by* Joydeep Chandra (CMRIT, Bangalore)
23. Data Mining and Social Media *by* Joydeep Chandra (VIIT Vishakhapatnam)
24. Distributed Algorithms on Connected Dominating Sets for Wireless Adhoc Networks *by* Rajiv Misra (Faculty Development Centre (FDC), IIT (ISM), Dhanbad)

Books Published

1. V Mistra, Jimson Mathew, L. C. Tong: QoS and Energy management in Cognitive Radio Networks *published by* Published by: Springer DE ISBN 2017) 2017 ,1-45860-319-3-978)

Short-Term Courses, Training Programmes and Workshops organised

1. GIAN Course: Big Social Data Analysis (February 26, 2018 to March 02, 2018)
2. GIAN Course: Neural Machine Translation (December 4-10, 2017)
3. GIAN Course: "Fuzzy Techniques for Intelligent Decision Making" (December 11 - 15, 2017)
4. GIAN Course: "Machine Learning and Its Role in the Internet of Things (IoT) Analytics" (December 4 - 8 2017)

Electrical Engineering

Faculty Members

Dr.Maheshkumar H. Kolekar Associate Professor	Digital Signal, Image and Video Processing, Video Surveillance, Multimedia Communication, Medical Image Processing, Computer Graphics, Signal Processing for communication, Tele-medicine
Dr.Preetam Kumar Associate Professor	Physical Layer issues in Wireless Communications, Signal Processing for Communication Systems, VLSI for Communication, Wideband Antenna Design, Underwater Communications
Dr.Ranjan Kumar Behera Associate Professor	Power Electronics, Electrical Machine Drive, and Renewal Energy Integration
Dr.Sanjoy Kumar Parida Associate Professor	Optimal Operation and Control of Power Systems, Electricity Market, Renewable Energy, Smart Energy Network, Flexible AC Transmission Systems
Dr.ShovanBhaumik Associate Professor	Statistical signal processing, Non linear estimation, Aerospace target tracking and Smart material
Dr.Sumanta Gupta Associate Professor	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.Saurabh Kumar Pandey Assistant Professor	Optoelectronics Devices, Semiconductor thin films, Solar Cells. Micro-Nanoelectronics, MEMS, Modeling & Simulation
Dr. Ahmad Ali Assistant Professor	Control Systems, Evolutionary algorithms, New tuning strategies for controller design, Relay based system identification
Dr.AneekAdhya Assistant Professor	Physical layer impairment-aware WDM backbone networks; traffic grooming, energy efficiency in backbone and access networks; hybrid wireless-optical broadband access networks; computer communication and networks
Dr.Kailash Chandra Ray Assistant Professor	VLSI architectural design, VLSI Signal Processing, Digital VLSI Design, Hardware design methodologies, FPGA based System Design, CORDIC
Dr.Pramod Kumar Tiwari Assistant Professor	Modeling, Simulation and Fabrication of Semiconductor Devices
Dr.SudhanMajhi Assistant Professor	Wireless communications and signal processing, estimation and detection, time and frequency domain signal analysis, blind signal parameters estimation, blind signal classification, blind wireless receiver design, estimation includes carrier frequency, symbol rate, symbol timing offset, carrier frequency offset, blind OFDM signal parameter estimation and synchronization, cooperative communications, MIMO, OFDM , cognitive radio and UWB systems, implementation of a universal blind receiver estimation algorithm on National Instrument (NI) hardware, experiment and measurement
Dr.Yatendra Kumar Singh Assistant Professor	RF MEMS, Computational Electromagnetics
Dr.Sudhir Kumar Assistant Professor	Wireless Sensor Networks, Cyber Physical Systems, Pervasive Mobile Computing, Internet of Things (IoT), Applications of Signal Processing, Machine Learning, and Data Mining
Dr.Jawar Singh Assistant Professor	Semiconductor Devices/Microelectronics/VLSI/ Modeling and Simulationof Classical and Non- classical devices

Academic Programs

- B.Tech in Electrical Engineering
- M.Tech in Communication System Engineering
- M.Tech in VLSI & Embedded Systems
- Ph.D Program

Research & Development Activities

Papers Published in Journals

1. Lokeshgupta, B. and Sivasubramani S., Multi-objective dynamic economic and emission dispatch with demand side management, *International Journal of Electrical Power & Energy Systems*, 97, pp 334-343 (2018).
2. Singh, jawar Kamal, NehaPanchore, Meena, -3D Simulation of Junction- and Doping-free Field-effect Transistor under Heavy Ion Irradiation, *IEEE Transactions on Device and Materials Reliability*, (2018).
3. D Shukla, A Ojha, RK Jha, A new composite multi-constrained differential-radon warping approach for digital video affine motion stabilization, *Computer vision Image Understanding*, 155 (2017).
4. S Suman, RK Jha, A new technique for image enhancement using digital fractional-order Savitzky–Golay differentiator, *Multidimensional Systems and Signal Processing 28 (2), 709-733*, 28, 2 (2017).
5. A. K. Singh, and S. K. Parida, A review on distributed generation allocation and planning in deregulated electricity marke, *Renewable and Sustainable Energy Reviews*, Volume 82, 4132-4141 (2018).
6. Arun Kumar, Shiv Bhushan, and Pramod Kumar Tiwari, A Threshold Voltage Model of Silicon-Nanotube-Based Ultrathin Double Gate-All-Around (DGAA) MOSFETs Incorporating Quantum Confinement Effects, *IEEE Transaction on NanoTechnology*, 16, 868 – 875 (2017).
7. DeeptiGola, Balraj Singh and Pramod Kumar Tiwari, A Threshold Voltage Model of Tri-Gate Junctionless Field-Effect Transistors Including Substrate Bias Effects , *IEEE Transactions on Electron Devices*, 64, 3534 – 3540 (2017).
8. Vikas Kumar, K. C. Ray and Preetam Kumar, A VLSI architecture of CORDIC-based popular windows and its FPGA prototype, *International Journal of High Performance Systems Architecture* , Vol.7, No.2,pp.57-69 (2017).
9. K.C. Ray, M.V.N.V.Prasad, and A. S. Dhar, An Efficient VLSI Architecture for Computation of Discrete Fractional Fourier Transform, *Journal of Signal Processing System*, xx (2017).
10. S. Payami, and R. K Behera, An Improved DTC Technique for Low Speed Operation of a Five-Phase Induction Motor, *IEEE Transactions on Industrial Electronics*, 64, No. 5, pp. 3513 (2017).
11. L. Gahane, P. K. Sharma, N. Varshney, T. A. Tsiftsis, Preetam Kumar, An Improved Energy Detector for Mobile Cognitive Users over, Generalized Fading Channels, *IEEE Transactions on Communications*, Vol:66 Page534 - 545 (2018).
12. Visweswara Rao Samoju, KamalakantaMahapatra, Pramod Kumar Tiwari, Analytical modeling of subthreshold characteristics by considering quantum confinement effects in ultrathin dual-metal quadruple gate (DMQG) MOSFETs,*Superlattices and Microstructures*,111, 704-13 (2017).
13. A. Kumar., Shiv Bhushan, Pramod Kumar Tiwari, Analytical modeling of subthreshold characteristics of ultra-thin double gateall-around (DGAA) MOSFETs incorporating quantum confinement effects , *Superlattices and Microstructures*, 109, 567-578 (2017).
14. Abdul Rauf Khan and Preetam Kumar, BER Analysis and interference mitigation for GO-OFDMA transmission, *Wiley International Journal of Communication systems*, Vol 31 Issue 2 (2017).
15. Vinay Kumar Trivedi and Preetam Kumar, Carrier Interferometry Coded Single Carrier FDMA (CI/SC-FDMA) for Next Generation Underwater Acoustic Communication, *Springer Wireless Personal Communications*, vol. 95, no. 4,pp. 4 (2017).
16. Nagendra Kumar and Yatendra Kr Singh, Compact Single/Dual Band BPF with Harmonic Suppression Using Open-Loop Resonator and L-Shaped Coupling Arm, *IET Microwaves Antennas and Propogation*, vol. 11, 625-633 (2017).
17. SudhirKumar, Compartmental Modelling of Opportunistic Signals for Energy Efficient Optimal Clustering in WSN, *IEEE Communications Letters*, 22, 173-176 (2018).

18. SonuBishnoi and Saurabh Kumar Pandey, Device performance analysis for lead-free perovskite solar cell optimization, *IET Optoelectronics*, 12, 1-7 (2018).

19. Neelam Sharma, Maheshkumar H. Kolekar, Diagnosis of Vascular Cognitive Impairment using EEG , *Indian Journal of Public Health Research & Development*, 8 (4), 947-953 (2017).

20. S. Payami, R. K Behera, and A. Iqbal , DTC of Three-Level NPC Inverter fed Five-Phase Induction Motor Drive with Novel Neutral Point Voltage Balancing Scheme, *IEEE Transactions on Power Electronics*, 33, No. 2, pp. 1487- (2018).

21. C. K. Jha and M H Kolekar, ECG Data Compression Algorithm for Tele-Monitoring of Cardiac Patients, *Int. J. of Telemedicine and Clinical Practices*, (2017).

22. Deba Prasad Dash, Maheshkumar H Kolekar, EEG Based Epileptic Seizure Detection Using Empirical Mode Decomposition and Hidden Markov Model, *Indian Journal of Public Health Research & Development*, 8 (2017).

23. Balraj Singh, TrailokyaNathRai, DeeptiGola, Kunal Singh, EktaGoel, Sanjay Kumar,, Pramod Kumar Tiwari, SatyabrataJit, Ferro-electric stacked gate oxide heterojunction electro-statically doped source/drain double-gate tunnel field effect transistors: A superior structure, *Materials Science in Semiconductor Processing*, 71, 161-65 (2017).

24. R. Palisetty and K. C. Ray , FPGA Prototype and Real Time Analysis of Multiuser Variable Rate CI-GO-OFDMA , *IEEE Transactions on Instrumentation and Measurement*, vol. 67, no. 3, pp. (2018).

25. Dhane D. M., Maiti M., Mungle T., Bar C., Achar A., Maheshkumar H Kolekar, Chakraborty C, Fuzzy spectral clustering for automated delineation of chronic wound region using digital images, *Elsevier Journal on Computers in Biology and Medicine*, (2017).

26. Vinay Kumar Trivedi, SarswatiKumari and Preetam Kumar, Generalized Error Analysis of FRFT-OFDM over Nakagami-m Fading Channel with Arbitrary m, *IET Communications*, Vol11, Pg1497 - 1502 (2017).

27. R Chouhan, RK Jha, PK Biswas, Hybrid Domain Analysis of Noise-Aided Contrast Enhancement Using Stochastic Resonance, *Journal of Signal Processing Systems (2), 243-262*, 89 (2017).

28. VS Verma, RK Jha, LWT–DSR based new robust framework for watermark extraction under intentional attack conditions, *Journal of the Franklin Institute 354 (14), 6422-6449*, 354 (2017).

29. Bhattacharya, M., Sivasubramani, S. and Roy, A., Multiobjective placement and sizing of distributed generations in distribution system using global criterion method , *International Transactions on Electrical Energy Systems*, 28:e2471 (2018).

30. AdhishreeShrivastava, Jayant Mani Tripathi, Ram Krishan, S. K. Parida, Optimal Coordination of Over current Relays using Gravitational Search Algorithm with DG Penetration , *IEEE Transactions on Industry Applications*, Vol. 54, 1155 - 1165 (2018).

31. Srinivasa Rao K, Vinay Kumar, Sudhir Kumar, Sadanand Yadav, Vinay Kumar Ancha, and Rajeev Tripathi, Power Efficient and Coordinated eICIC-CPC-ABS Method for Downlink in LTE-Advanced Heterogeneous Networks, *Physical Communication*, vol. 24, pp. 71-82 (2017).

32. PrabinaPattanayak and Preetam Kumar, Quantized feedback scheduling for MIMO-OFDM broadcast networks with subcarrier clustering, *Elsevier Ad Hoc Networks*, Volume 65 Page 26-37 (2017).

33. Nagendra Kumar and Yatendra Kr Singh, RF-MEMS Based Bandpass to Bandstop Switchable Single and Dual-Band Filters with Variable FBW and Reconfigurable Selectivity, *IEEE Transaction on Microwave Theory and Technique*, vol. 65, 3824-3837 (2017).

34. A Bhardwaj, VS Verma, RK Jha, Robust video watermarking using significant frame selection based on coefficient difference of lifting wavelet transform , *Multimedia Tools and Applications*, 77 (2017).

35. G.L. Raja and A. Ali, Smith predictor based parallel cascade control strategy for unstable and integrating processes with large time delay , *Journal of Process Control 52* , 52 (2017).

36. S. Raj, K. C. Ray, Sparse representation of ECG signals for automated recognition of cardiac arrhythmias, *Expert Systems with Applications*, vol. 135, pp. 49-64. (2018).

37. Shaivalini Singh, Pramod Kumar Tiwari, Hemant Kumar, Yogesh Kumar, Gopal Rawat, Sanjay Kumar, Kunal Singh, EktaGoel, S. Jit, and Si-Hyun Park, Theoretical and experimental study of UV detection characteristics of Pd/ZnOnanorodSchottky diodes , *NANO: Brief reports and reviews*, 12, 1750137 (2017).

38. Abhinoy Kumar Singh, ShovanBhaumik, Transformed Cubature Quadrature Kalman Filter, *IET Signal Processing*, Vol 11, p.1095-1103 (2017).

Papers Presented in Conferences

1. Mohammad Irshad and Ahmad Ali, A Review on PID tuning rules for SOPTD inverse response processes , *International Conference on Intelligent Computing, Instrumentation and Control Technologies (ICICICT)*, Kerala INDIA (2017)
2. Swati, Sparha Mishra, DeveshDevendra, Subhamoy Chatterjee, Maheshkumar H. Kolekar, An efficient gmm and active contour based unsupervised person re-identification, *International Conference on Advances in Computing, Communications and Informatics*, Manipal (2017)
3. K. B. Sai Kiran, M. Kumari, O. Ojo, R. K. Behera, Atif Iqbal, Analysis and Experimental Verification of Three-coil Inductive Resonant Coupled Wireless Power Transfer System, *NPEC 2017*, College of Engineering Pune (2017)
4. Ranjan K. Behera, Rustam Kumar, Srirama Murthy Bellala, P. Raviteja, Analysis of Electric Vehicle Stability Effectiveness on Wheel Force with BLDC Motor Drive, *IEEE 1st International Conference on Industrial Electronics for Sustainable Energy Systems (IESES)* , Hamilton, New Zealand (2018)
5. ArabindaBehera, Dr. DebashreeGuhaAdhya and Dr. Sanjoy Kumar Parida, Analysis of Robust Interval Type2- Fuzzy PID Controller for AGC in a Restructured Power System, *7th International Conference on Power Systems, 2017 (ICPS 2017)*, College of Engineering Pune (2017)
6. S. Raj, K. C. Ray , Application of variational mode decomposition and ABC optimized DAG-SVM in arrhythmia analysis, *7th International Symposium on Embedded Computing and System Design (ISED2017-)*, India (2017)
7. Vinay Kumar Trivedi and Preetam Kumar, BER Performance of Multi User Scheduling for MIMO-OFDM and MIMO-SCFDMA Broadcast Network with Imperfect CSI, *National Conference on Communications (NCC2018-)*, Hyderabad (2018)
8. PrabinaPattanayak, Vinay Kumar Trivedi, Sayan Chakraborty and Preetam Kumar, BER performance of multi user scheduling for MIMO-STBC and MIMO-OFDM broadcast network with imperfect CSI, *International Conference on Signal Processing and Integrated Networks (SPIN2017-)* , Noida (2017)
9. Sumit Kumar, Rajib Kumar, JhaAakanksha, Characterization of supra-threshold stochastic resonance for uniform distributed signal with Laplacian and Gaussian noise, *Noise and Fluctuations (ICNF), 2017 International Conference on, 4-1*, Vilnius, Lithuania (2017)
10. ShobhitBhatnagar, DeepanwayGhosal, Maheshkumar H. Kolekar, Classification of Fashion Article Images using Convolutional Neural Networks, *International Conference on Image Information Processing*, Jaypee University, Solan, Simla (2017)
11. Rahul Radhakrishnan, Shovan Bhaumik, Nutan Kumar Tomar, Continuous-Discrete Quadrature Filters for Intercepting a Ballistic Target on Reentry using Seeker Measurements, *Advances in Control and Optimization of Dynamical Systems (ACODS)*, Hyderabad (2018)
12. Rahul Radhakrishnan,ShovanBhaumik,Nutan Kumar Tomar, Continuous-discrete shifted Rayleigh filter for underwater passive bearings-only target tracking, *Asian Control Conference*, Gold coast, Australia (2017)
13. Abhinoy Kumar Singh,ShovanBhaumik Kundan, Kumar, Cubature Quadrature Filter for One-step Randomly Delayed Measurements, *Indian control conference*, IIT Kanpur (2018)
14. Deba Prasad Dash, Maheshkumar H Kolekar, Dense Optical Flow Trajectory Based Human Activity Recognition using Hierarchical Hidden Markov Model, *International Conference on Computer Vision and Image Processing*, IIT Roorkee (2017)
15. UtkalRanjanMuduli, Ranjan Kumar Behera, Electrical Modeling and Characteristics Investigation of Mechanical Shaft Supported by Ball Bearing of a Three-phase induction Motor, *NSRD 2017*, IIT Patna (2017)
16. Deba Prasad Dash, Maheshkumar H Kolekar, Epileptic seizure detection based on EEG signal analysis using hierarchy based Hidden Markov Model., *International Conference on Advances in Computing, Communications and Informatics*, Manipal (2017)
17. Vinay Kumar Trivedi, Madhusudan Kumar Sinha and Preetam Kumar, Error Rate Performance of SC-FDMA with Channel Dependent Subcarrier Scheduling , *International Conference on Signal Processing and Integrated Networks (SPIN2018-)* , Noida (2018)
18. GarimaGautam, KanikaChoudhary, Subhamoy Chatterjee, Maheshkumar H. Kolekar, Facial Expression Recognition using Krawtchouk Moments and Support Vector Machine Classifier ,*International Conference on Image Information Processing*, Jaypee University, Solan, Simla (2017)

19. Vinay Kumar Trivedi and Preetam Kumar, FRFT-SCFDMA Scheme for Uplink in 5G Radio Access Networks , *International Conference on Communications(ICC)* , Paris, France (2017)
20. Adhishree Srivastava and Sanjoy Kumar Parida, Impact of Distributed Generation Penetration Level on Relay Coordination , *7th International Conference on Power Systems, 2017 (ICPS 2017)*, College of Engineering Pune (COEP) (2017)
21. Chaudhari M Shamrao, Prashant Kumar and Preetam Kumar, Interference Reduction by Switching the Underlaying Transmitter in {D2D} Communications, *COMSNETS*, Bangalore, India (2017)
22. Deepak Kumar and Yatendra Kumar Singh, Low Power, low Phase Noise Current Reuse 2.45 GHz LC Oscillator with MOS Resistor, *Recent Innovations in Signal processing and Embedded systems (RISE2017-)*, NIT, Bhopal (2017)
23. Anmol Jain, Vinay Jadaun and Saurabh Kumar Pandey, Medical Health KIT: ECG CLASSIFICATION AND ANALYSIS OF HEART BEAT USING MATLAB,*ICET:EITM-2017,* NIT Hamirpur (2017)
24. Pavan Kumar Pedapolu, Pradeep Kumar, Vaidya Harish, SatvikVenturi, Sushil Kumar Bharti, Vinay Kumar, and Sudhir Kumar, Mobile Phone Users Speed Estimation using WiFi Signal-to-Noise Ratio, *18th ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc)*, IIT Chennai, Madras, India (2017)
25. Md Asif Hasan and SanjoyParida, Modeling and Analysis of Single Phase Induction Motor as a Dynamic Load in Inverter Dominated Microgrid System, *7th International Conference on Power Systems, 2017 (ICPS 2017)*, College of Engineering Pune (COEP) (2017)
26. Raja G.L. and Ali A., Modified series cascade control strategy for integrating processes,*ICC*, Kanpur INDIA (2018)
27. B. Lokeshgupta, A. Sadhukhan, and S. Sivasubramani,, Multi-objective Optimization for Demand Side Management in A Smart Grid Environment, *International Conference on Power Systems*, Pune (2017)
28. Mohammad Irshad and Ahmad Ali , Optimal tuning rules for PI/PID controllers for inverse response processes, *Third IFAC International Conference on Advances in Control and Optimization of Dynamical Systems*, Hyderabad INDIA (2018)
29. S Kumar, A Kumar, RK Jha , Performance analysis of segmentation using SSR under different noise conditions, *Noise and Fluctuations (ICNF), 2017 International Conference on, 4-1*, Vilnius, Lithuania (2017)
30. RashmiRanjan, Deepak Punetha and Saurabh Kumar Pandey , Performance optimization and analysis of ZnO based green light emitting diode, *International Workshop on The Physics of Semiconductor Devices (IWPSD 2017)*, IIT Delhi (2017)
31. R. K. Behera and S. K. Parida , PMSG Based Wind Power Generation for an Isolated Irrigation System with Inbuilt Frequency Regulation Capability, *ICPS'17*, College of Engineering Pune (2017)
32. Don Kurian Dennis, AyushiPriyam, Sukhpreet Singh Virk, Sajal Agrawal, Tanuj Sharma, ArijitMondal and Kailash Chandra Ray, Single Cycle RISC-V Micro Architecture Processor and its FPGA Prototype, *7th Int. Sympo. on Embedded Computing and System Design (ISED2017-)*, India (2017)
33. Md. Junaid Akhtar, Ranjan Kr. Behera , Stability Analysis of Induction Motor for Variable Speed Application, *NSRD 2017*, IIT Patna (2017)
34. Vinay Kumar, Sadanand Yadav, JoydeepSengupta, Sudhir Kumar, Rajeev Tripathi, Sudarshan Tiwari, TMSM-based Optimal Clustering in a Gaussian Distributed Wireless Sensor Network, *TENCON - IEEE Region 10 Conference*, Penang, Malaysia (2017)
35. SonuBishnoi and Saurabh Kumar Pandey, Transport properties across La0.7Sr0.3MnO3/STON and La0.7Sr0.3MnO3/ ZnOperovskite solar cells, *International Workshop on The Physics of Semiconductor Devices (IWPSD 2017)*, IIT Delhi (2017)
36. Akash Agarwal and Preetam Kumar, Variable Rate Multicarrier Schemes over Integrated Satellite-Terrestrial System, *International Conference on Communications(ICC)*, Paris, France (2017)
37. Sumit Kumar Rajib Kumar Jha, Weak signal detection from noisy signal using stochastic resonance with particle swarm optimization technique, *Noise and Fluctuations (ICNF), 2017 International Conference on, 4-1*, Vilnius, Lithuania (2017)
38. Sudhir Kumar, and Sajal K. Das , ZU-Mean: Fingerprinting based Device Localization Methods for IoT in the Presence of Additive and Multiplicative Noise, *ACM 19th International Conference on Distributed Computing and Networking (ICDCN) Workshop*, IIT BHU, Varanasi, India (2018)

Sponsored Research Projects

1. 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.207.12 Lakhs) (PI : R K Behera)
2. Analytical Investigation of subthresholdcharacterstics of SiNT FETs (DRDO,Rs.19.98 Lakhs) (PI : P K Tiwari)
3. Cyber-Physical Systems for M-Health (ECR award scheme under SERB, Govt. of India, Rs.22.15 Lakhs) (PI : Sudhir Kumar)
4. Design and Development of RF Energy Harvesting Circuits for Low power Electronics Devices (DST (SERB), Rs.54.52 Lakhs) (PI : Jawar Singh)
5. Design and FPGA prototyping of multicarrier multiple access schemes for variable rate multimedia satellite communication (MeiY, New Delhi, Rs.105.00 Lakhs) (PI : Preetam Kumar and K.C. Ray)
6. Exploration of 8/9 nano-meter process variation immune doping - and junction - free devices and their circuits (DST (SERB), Rs.31.45 Lakhs) (PI : Jawar Singh)
7. SMDP-C2SD (MeitY, Govt. of India, Rs.215.00 Lakhs) (PI : Kailash Chandra Ray)
8. Teaching Learning Centre for Internet-of-Things Smart Grid and Smart Building (Department of Higher Education, Ministry of Human Resource Development, Government of India, Rs.753.60 Lakhs) (PI : R K Behera)
9. Underwater target motion analysis with passive sensors (NPOL, Rs.9.90 Lakhs) (PI : ShovanBhaumik)
10. Video watermarking (DST (Project submitted), Rs.37.00 Lakhs) (PI : Rajib Kumar Jha)

Consultancy Projects

1. Impact Assessment of SmartGram (4G/LTE-A) deployment in villages (Uvaca Digital Systems Pvt Ltd Address: 5/1 Gulmohar Enclave, Kundanahalli Gate, Bangalore-37, Rs.1.47 Lakhs) Consultant Name: Preetam Kumar

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: Ranjan Kumar Behera
2. Patent Name:Energy Dissipation Model based on Magnetic Induction Communication for Non-conventional Media; Patent Owner: Sudhir Kumar
3. Patent Name: Hybrid Robot; Patent Owner: Sudhir Kumar

Other Activities

Member - Professional Bodies

1. Dr. Jawar Singh (2014) IEEE USA
2. Dr. Sudhir Kumar (2016) IEEE
3. Dr. Sudhir Kumar (2018) INDIAN SOCIETY FOR TECHNICAL EDUCATION
4. Kailash Chandra Ray (2004) IEEE
5. Mahesh Kumar Kolekar (1998) IETE
6. Mahesh Kumar Kolekar (1998) ISTE
7. Mahesh Kumar Kolekar (2017) IEEE
8. Mahesh Kumar Kolekar (2000) CSI
9. Pramod Kumar Tiwari (2013) IEEE EDS
10. Preetam Kumar (2016) IEEE
11. RajibJha (2008) IEEE
12. RajibJha (2015) ISTE
13. Ranjan Kumar Behera (2013) IEEE
14. S. Sivasubramani (2013) IEEE
15. Sanjoy Kumar Parida (2) IEEE
16. Sanjoy Kumar Parida (2) IEEE Power and Energy Society
17. Sanjoy Kumar Parida (2) IEEE Control System Society
18. Sanjoy Kumar Parida (3) IEEE Power Electronics Society
19. Saurabh Kumar Pandey (2016) IEEE
20. Saurabh Kumar Pandey (2015) IACSIT
21. Saurabh Kumar Pandey (2015) IAENG
22. Saurabh Kumar Pandey (2015) IRED (UACEE)

Member - Editorial Board

1. Dr. Jawar Singh (2015) *Associate Editor* - IET Electronics Letters
2. Dr. Jawar Singh (2016) *Associate Editor* - IEEE TCVLSI
3. Mahesh Kumar Kolekar - *Editorial Board member* - American Journal of Signal Processing
4. Preetam Kumar - *Editorial Board Member* - International Journal of Wireless Personal Communications
5. Saurabh Kumar Pandey (2017) *Guest Editor* - Advances in Optoelectronics

Awards &Honours

1. Saurabh Kumar Pandey (2018) *Albert Nelson Marquis lifetime achievement award*
2. Sanjoy Kumar Parida (2017) *Albert Nelson Marquis Lifetime Achievement Award*
3. Saurabh Kumar Pandey (2017) *Associate Editor in Research & Development in Material Science (RDMS) Journal*
4. Mahesh Kumar Kolekar (2017) *Best Paper Award in International conference Symhealth*
5. Ranjan Kumar Behera (2017) *Bharat Vikas Award*
6. Saurabh Kumar Pandey (2017) *Keynote Speaker and Session Chair in ICET: EITM held at NIT Hamirpur (H.P.)*
7. Dr. Sudhir Kumar (2017) *SERB Early Career Research Award*

Fellowships

1. Mahesh Kumar Kolekar (2017) *DAAD Fellowship*
2. RajibJha (2017) *Sir Visvesvaraya Young Faculty Research Fellowship for 5 years*

Visits Abroad by Faculty Members

1. Ranjan Kumar Behera - Conference (Hamilton, New Zealand) 29 Jan - 4 Feb 2018
2. Mahesh Kumar Kolekar - To join DAAD Bilateral Exchange of Academics Programme 2017 (Berlin, Germany) May 2017 to July 2017 (3 months)
3. RajibJha - Attending Conference (Vilnius, Lithuania) June 20-23, 2017
4. Preetam Kumar - To present paper in ICC 2017 (Paris, France) 21-25 May 2017

Invited Lectures by Faculty Members

1. Optimal Power Flow Studies: Overview and Its Applications *by* Sanjoy Kumar Parida (Motilal Nehru National Institute of Technology Allahabad)
2. Enabling Geospatial Technologies for Smart City Services and Applications *by* Dr. Sudhir Kumar (IES College of Technology Bhopal)
3. Timeless Science: Bhagavad Gita *by* Ranjan Kumar Behera (Bhubaneswar)
4. Simulink applications to electric drives *by* Ranjan Kumar Behera (Vizianagaram)
5. Simulink applications to electric drives *by* Ranjan Kumar Behera (Purnea)
6. Integration of Sustainable Energy Sources and Smart Grid *by* Ranjan Kumar Behera (Deoghar)
7. Multiphase Induction Motor Drives for Off Highway Applications *by* Ranjan Kumar Behera (Madanapalli)
8. Integrated Automatic Voltage Control of a High Efficient Solar Photovoltaic System *by* Ranjan Kumar Behera (Bhubaneswar)
9. Keynote address on Recent Trends and Challenges in Vision Based Human Activity Recognition *by* Mahesh Kumar Kolekar (Jaypee University Solan)
10. Non-classical Semiconductor Devices *by* Dr. Jawar Singh (MNIT Jaipur)
11. Waveguide and Coaxial Cable modes *by* Yatendra Kumar Singh (Cochin University of Science and Technology)
12. Congestion Management Techniques *by* Sanjoy Kumar Parida (Malaviya National Institute of Technology Jaipur)
13. Integration of Renewable Energy Sourcesin Distribution Network *by* Sanjoy Kumar Parida (Malaviya National Institute of Technology Jaipur)
14. 3D Modeling of MOSFETs *by* Pramod Kumar Tiwari (IIT BHU)
15. MOSFET Modeling *by* Pramod Kumar Tiwari (GEC PauriGarhwal)
16. Digital image processing *by* RajibJha (G B Pant University Pauri)
17. Recent research trend in image processing *by* RajibJha (G B Pant University Pauri)
18. Cellular Communication *by* Preetam Kumar (MNIT Jaipur)

Humanities and Social Sciences

Faculty Members

Dr. Nalin Bharti Associate Professor	Macroeconomic Reforms, Labour Economics, WTO and India
Dr. Smriti Singh Associate Professor	Contemporary Literary Theory, Linguistics and Language Teaching, Indian Writing in English
Dr. Aditya Raj Assistant Professor	Sociology of Education, Migration and Diaspora Studies, Development Discourse, Qualitative Research Design, Youth
Dr. Papia Raj Assistant Professor	Health Care Management, Population and Public Health, Gender and Development, Environmental Health, Regional Development, Quantitative Methods
Dr. PriyankaTripathi Assistant Professor	Gender Studies, Indian Writing in English, Short Fiction
Dr. Sweta Sinha Assistant Professor	Linguistics, Natural Language Processing, Phonology, Communication Skills, ESL, ELT and Speech Forensics
Dr. Richa Chaudhary Assistant Professor	Corporate Social Responsibility, Work Engagement, Human Resource Development Climate, Occupational Self-efficacy, Leadership, Entrepreneurship
Dr. Prashant Jha Visiting Faculty	
Dr. Meghna Dutta Assistant Professor	Applied Microeconomics, Panel Data and Cross–Section Econometrics, International Economics, Development Economics
Dr. Rajendra N. P. Assistant Professor	Macro-dynamic modeling, Time Series Analysis, International Economics and Finance

Academic Programmes

- Ph.D Program

Research & Development Activities

Papers Published in Journals

1. Raj, Papia&Anupama Singh, A Review of Municipal Solid Waste Management in Developing Countries, *International Journal of Environment and Development*, Vol 14(2) (2017).
2. SwetaSinha, "(In) definiteness in Hindi in comparison with English: Grammarians' Dilemma", *International Journal of ELT, Linguistics and Comparative Literature*, 5 (6) 26- 31 (2017).
3. AimanReyaz and PriyankaTripathi, "A Study of the Complex Interiors of the Conscious and the Unconscious in Franz Kafka's The Trial", *International Journal of Humanities and Cultural Studies*, Vol. 4, 238-249 (2017).
4. SwetaSinha, "Fuzzy Logic based teaching/ learning of a foreign language in Multilingual Situations", *ActaLinguisticaAsiatica*, 7 (2) 71- 84 (2017).
5. SwetaSinha, "Gender Reflection in Number markers: A Case of Hindi Disyllabic Words and their Gendered Behavior", *Language in India*, 17(11) (2017).
6. T Prem Kumar and Aditya Raj, Contextualizing Youth Studies in Contemporary India, *Indian Journal of Development Research and Social Action*, 18 (2018).

7. Chaudhary, R., Corporate Social Responsibility and Employee Engagement: Can CSR help in redressing the engagement gap, *Social Responsibility Journal*, 13(2), 323-338 (2017).
8. Chaudhary, R., CSR & Turnover Intentions: Examining the Underlying Psychological Mechanisms, *Social Responsibility Journal*, 13(3), 643-660 (2017).
9. Aditya Raj, Democracy and Social Justice in Bihar: A Birds Eye View Contemporary Social Science, *Contemporary Social Science*, 26 (2017).
10. Chaudhary, R., Demographic factors, Personality & Entrepreneurial Inclination: A Study among Indian University Students, *Education+Training*, 59(2), 171-187 (2017).
11. Chaudhary, R. &Rangnekar, S, Development Climate & Work Engagement: A Multilevel Study, *Evidence-based HRM: a global forum for empirical scholarship*, 5(2), 166-182 (2017).
12. ParthaBhattacharjee and PriyankaTripathi, Ethnic Tensions and Political Turmoil: Postcolonial Reading of ChimamandaNgozi's Purple Hibiscus, *Language in India*, Vol. 17, 443-450 (2017).
13. Nusrat Begum and SwetaSinha, Gendered Discourse and Social Behavior: A Critical case Study of Patriarchy through the lens of Language, *Indian Linguistics*, 78 (3-4) (2018).
14. Aditya Raj, Immigration and Integration Policy and the formation of Indian Diaspora in Canada, *South Asian Anthropologist*, 18(1) (2018).
15. Rastogi, M. & Chaudhary, R., Job Crafting and Work-Family Enrichment: The Role of Positive Intrinsic Work Engagement, *Personnel Review*, 47(3), 651-674 (2018).
16. AimanReyaz and PriyankaTripathi, Narrating the Narration: Using Joyce's Molly and Kafka's Gregor to Show the Nature of Narrative, *Language in India*, Vol. 17, 175-189 (2017).
17. Nayak, Vibhuti&PapiaRaj, Perception of health among female adolescents of Oraon tribe in Jharkhand, *Indian Journal of Social Development*, Vol. 17(1):81-95 (2017).
18. Sanjib Kumar Biswas and SmritiSingh, Portrayal of Poverty and Corruption Ridden Postcolonial India in AravindAdiga's 'the White Tiger', *Language in India*, (2017).
19. Srishti&Papia Raj, Potential of Health Informatics for Improving Maternal Health in Bihar, *Indian Journal of Public Health Research and Development*, Vol. 9(2):156-160 (2018).
20. Sanjib Kr Biswas and PriyankaTripathi, Relocating Women's Role in War: Rereading TahminaAnam's A Golden Age, *The Criterion: An International Journal in English*, Vol. 8, 522-528 (2017).
21. Sanjibkumar Biswas and SmritiSingh , Rereading Postcolonialism in 'In Times of Siege' , *International Journal of Culture, Literature and Criticism*, (2017).
22. PriyankaTripathi, Review Article "The Adivasi Will Not Dance: Stories by HansdaSowvendraShekhar, *Rupkatha Journal on Interdisciplinary Studies in Humanities*, Vol. IX, 193-196 (2017).
23. Aditya Raj and K. VibhutiNayak, Scheduled Tribe Youth in India and Their Institutions: A Study of Dhumkuria, *Journal of Exclusion Studies*, 7 (2) (2017).
24. AimanReyaz and PriyankaTripathi, Sexuality and Shaping of the Blooming Psyche of Molly in James Joyce's Ulysses, *The Indian Review of World Literature in English*, Vol. 14, 53-60 (2018).
25. ParthaBhattacharjee and PriyankaTripathi, Silhouetting the Shifting Perspective of Bollywood from 'Machismo' to 'Metrosexuality', *Journal of English Language and Literature*, Vol. 8, 575-582 (2017).
26. Chaudhary, R. &Rangnekar, S, Socio-demographic contextual factors & Work Engagement: An Empirical Analysis, *Emerging Economy Studies*, 13(1), 1-18 (2017).
27. Bisai, S. and Chaudhary, R., Stress Among the Students of an Engineering Institution in India: An Empirical Analysis, *Jindal Journal of Business Research*, 6 (2) (2017).
28. Sandeep Sharma and SwetaSinha, Substandard Status of Hindi in Competitive Examinations in India: Causes and Remedy, *Language in India*, 17 (6) (2017).
29. ShamsherAlam and Aditya Raj, The Academic Journey of Witchcraft Studies in India, *Man in India*, 97 (2017).
30. SamratBIasai and SmritiSingh, The Representation of Culture, Politics and Identity in The Mimic Men, *World Journal of Gender and Literature*, 81-91 (2018).

31. Ramjit Kumar and SmritiSingh, The State of Science Education in Post-Independent India: A Synoptic Review and Future Direction, *IOSR Journal of Humanities and Social Science*, (2017).
32. PriyankaTripathi, Traversing the Terrain of Indian Feminism and Indian Sexuality, *Indian Literature*, 97-114 (2018).
33. Richa Chaudhary, Santosh Rangnekar, UthaiTanlamai, SurasvadeeRajkulchai, AnirutAsawasakulsorn, Work engagement in India & Thailand: A Comparative Analysis, *Global business Review*, 19(1), 1-13 (2017).
34. Chaudhary, R. and Akhouri, A. (2018). Linking Corporate Social Responsibility attributions and Creativity: Modeling Work Engagement as a Mediator. Journal of Cleaner Production, 190, 809-821.
35. Chaudhary, R. (2018). Corporate Social Responsibility and Employee Performance: A study amongst Indian Business Executives. The International Journal of Human Resource Management,https://doi.org/10.1080/09585192.2018.1469159
36. Chaudhary, R. (2018). Green Buying Behavior In India: An Empirical Analysis. Journal of Global Responsibility,https://doi.org/10.1108/JGR-12-2017-0058

Papers Presented in Conferences

1. Chaudhary, R. and Akhouri, A., Authentic Leadership, CSR Attributions, and Work Engagement in Indian IT Industry, Fifth PAN IIM Management Conference, IIM Lucknow (2017)
2. Nalin Bharti as a penalist , Climate Change Mitigation and International Cooperation,*Climate Change Mitigation, Adaptation and Sustainable Development*, JamiaMilliaIslamia, New Delhi (2018)
3. PriyankaTripathi, Decoding the Katyayani Model of Indian Feminist Poetics: A Critical Evaluation of Indian Women's Short Fiction in English , Centre for Gender Studies Patna
4. ParthaBhattacharjee and PriyankaTripathi , Disease and Visual Rhetoric of Disability: Comics and Autobiography in the works of Alison Bechdel, University of Delhi, Delhi
5. Gupta, M and Chaudhary, R, Does Perceived Career Support help Improve Work Performance among Engaged Young Workers?, 4th International Conference on Human Resource Management, ICFAI Business School, Hyderabad (2017)
6. Nalin Bharti and MamtaKumari, Driving Employment through Trade Facilitation: Evidence from South Asia, Drivers of Economic Growth: Innovations, Institutions and Policies, JamiaMilliaIslamia (2018)
7. Nalin Bharti with Mritunjay Kumar, Economic Development in Mithila, Economy of Mithila, LNMU Darbhanga (2018)
8. Smriti Singh , Ecriture Feminine: Have Indian Women Writers Successfully created Their Language , Gender Issues: Priorities and Challenges, Patna (2017)
9. Nalin Bharti and MamtaKumari, Employment Effects of Trdae Facilitation in India:Theoretical Discussions and Emperical IIlustartionst, 59th Annual Conference of the Indian Socity of Labour Economics, Thiruvananthapuram (2017)
10. Priyanka Tripathi, Framing an Indian Feminist Poetics, Pondicherry University, Pondicherry
11. T Prem Kumar and Aditya Raj, Globalisation and youth - Theoretical perspectives and methodological issues, Globalization and Youth in India: Perspectives, Issues, and Challenges, BabasahebBhimraoAmbedkar University, L (2017)
12. Sadeqa Ghazal and Smriti Singh, Going Unplugged to Teach Speaking, 23 International Conference of NELTA, Kathmandu, Nepal (2018)
13. Chaudhary, R. and Akhouri, A., Green Human Resource Management and Job Pursuit Intentions: A Study among Prospective Employees, International Conference on Sustainability and Business, IIM Calcutta (2018)
14. Nalin Bharti with MritunjayaAdity and Ayesha, GST and International Trade with special reference to Indo-Nepal Trade, International Seminar on GST and Indian Economy, LNMU Darbhanga (2017)
15. Aditya Raj, Indian youth in India and in Canada, 11th Global Studies Conference 2017, NUS (over skype) (2017)
16. Nusrat Begum, RatulMahela and Sweta Sinha, Investigating Linguistic Convergence and Divergence with respect to Idioms and Phrases: A Comparative Study of Hindi and Bodo,*1st International Conference on Linguistic Landscaping*, NEHU (2017)
17. ParthaBhattacharjee and PriyankaTripathi , Life in a Refugee Camp: Analysing the Trauma of Partition in SyedaFarhana's "Little Women" and Maria M Litwa's "Welcome to Geneva Camp, CUG, Gandhinagar

18. Chaudhary, R. and Akhouri, A., Linking Corporate Social Responsibility attributions and Creativity: Modeling Work Engagement as a Mediator, Fifth Biennial Indian Academy of Management Conference, IIM Indore (2017)
19. Ramjit Kumar and Smriti Singh, Looking Beyond the Science Capital: Conceptualisation of 'Science Field' in the Context of the Indian Society, 3rd International Conference on Theory and Practice - ICTP 2017, Australia (2017)
20. RatulMahela and Sweta Sinha, Phonological Processes of Sanzari - Eastern Bodo Variety, 4thNational Language Conference organized, Berhampur, Odisa (2017)
21. Smriti Singh, Reconceptualizing the Human and Humanities in the Digital Era, XX International Conference of FCT, Gopalpur-on-Sea (2017)
22. NalinBhart as a Chair of teh session, Technical Session 2 Climate Change, Energy Use Pattern and Development, Climate Change Mitigation, Adaptation and Sustainable Development, JamiaMilliaIslamia, New Delhi (2018)
23. Papia Raj, The Health Impacts of Solid Waste in Patna, India, Global Studies Conference, NUS (over skype) (2017)
24. Sadeqa Ghazal and Smriti Singh, The Unplugged Class and Speaking Skills - Benefits of Autonomy, IAFOR-International Conference on Language Learning, Dubai (2018)
25. Sadeqa Ghazal and Smriti Singh, Using Learner Autonomy to Develop Speaking Proficiency - An Action Research Approach, International Multidisciplinary Conference on Education for Future: Issues and Challenges, Hyderabad (2017)
26. ShamsherAlam and Aditya Raj, Witchcraft and Witch hunting in India: An Assessment,*National Convention on Emerging Challenges of Violence Against Women*, Odisha State Commission for Women (2018)
27. Sweta Sinha, Word Stress and Rhythm in Magahi, International Conference in Linguistics and Phonology 19, Bangkok, Thailand (2017)
28. Dhar, Niladri S.,and Dutta, Meghna, "Land Records Management in Bihar: An Account of Recent Development", presented at the Centre for Rural Studies, Lal Bahadur Shastri National Academy of Administration (2018).

Sponsored Research Projects

1. Green Human Resource Management in Indian Automobile Industry Located in Tamil Nadu State of India (ICSSR, Rs.645000) (PI : Richa Chaudhary)
2. India-Japan Trade and FDI: What new after CEPA (ICSSR, Rs.11.52 Lakhs) (PI : Nalin Bharti)
3. UBA (IITP, Rs.20.00 Lakhs) (PI :Aditya Raj)

Other Activities

Member - Professional Bodies

1. Aditya Raj (2003) American Sociological Society
2. Aditya Raj (2004) International Sociological Society
3. Aditya Raj (2001) Indian Sociological Society
4. Nalin Bharti - VI-UNCTAD
5. Nalin Bharti - Indian Society of Labour Economics
6. Nalin Bharti - The Indian Science Congress Association
7. Nalin Bharti - Indian Economic Association
8. Papia Raj (2011) All India Sociological Society
9. Papia Raj (2017) Global Studies Research Network
10. Richa Chaudhary (2010) Indian Society of Training & Development
11. Richa Chaudhary (2011) International Society of Asia Pacific Studies
12. Richa Chaudhary (2018) Academy of Management
13. Smriti Singh (2012) IATEFL

14. Smriti Singh (2009) Melus-Melow
15. Smriti Singh (2010) Forum on Contemporary Theory
16. Sweta Sinha (2018) Scientific Committee for BROCAS- 1

Member - Editorial Board

1. Aditya Raj (2014) *Editorial Board* - International Journal of Critical Pedagogy
2. Aditya Raj (2014) *Editorial Board* - International Journal of Youth Studies
3. Nalin Bharti - *Member* - Journal of Management & Public Policy
4. Nalin Bharti (2017) *Member* - Indian Journal of Economics and Business
5. Papia Raj (2015) *Member of Editorial Review Board* - Amity Journal of Healthcare Management
6. Richa Chaudhary (2017) *Member* - Indonesian Journal of Corporate Social Responsibility and Environmental Management
7. Richa Chaudhary (2017) *Guest Editor for Special Issue on Engagement* - Journal of Global Operations and Strategic Sourcing
8. Richa Chaudhary (2017) *Member* - Indonesian Journal of Sustainability Accounting and Management
9. Smriti Singh (2018) *Senior Reviewer* - IAFOR
10. Sweta Sinha (2017) *Member* - Indian Journal of Applied Linguistics
11. Sweta Sinha (2017) *Member* - Language Forum

Awards & Honours

1. Sweta Sinha (2017) *Best Paper Award in ICLP 2017: 19th International Conference on Linguistics and Phonology held in Bangkok, Thailand.*

Visits Abroad by Faculty Members

1. Sweta Sinha - Conference (Bangkok, Thailand) 29 August 2017 to 2 September 2017
2. Smriti Singh - to attend a conference (Dubai) February 15-18, 2018

Invited Lectures by Faculty Members

1. Leadership and Innovation for Sustainable World (Keynote Lecture) *by* Richa Chaudhary (Xavier Institute of Social Service (XISS) Ranchi)
2. Cognitive Linguistics and Language acquisition Theories *by* Sweta Sinha (IIIT Vadodara)
3. "Translation and Linguistics" and "Linguistic Equivalence" *by* Sweta Sinha (CIIL, Mysure)
4. Mock Interviews *by* PriyankaTripathi (Amity University, Patna)
5. Non Verbal Communication *by* PriyankaTripathi (Patna Central School, Patna)
6. Writing for Employment: Emails and Covering Letters *by* PriyankaTripathi (NIT Kurukshetra)
7. Elements of Clear Writing: Content and the Layout *by* PriyankaTripathi (NIT Kurukshetra)
8. History, Definition and Types of Translation *by* Smriti Singh (CIIL, Mysore)
9. Rethinking Performance Management *by* Richa Chaudhary (International School of Management Patna)
10. The languages of Bihar and Jharkhand: Issues in language Documentation *by* Sweta Sinha (Central University of Jahrkhan)
11. Translating the Oral Narratives: Issues and Challenges *by* Smriti Singh (Central University of Jharkhand, Ranchi)
12. Discussant- Genealogy, Labour Migration and Logistics *by* Aditya Raj (Tata Institute of Social Sciences)

Books Published

1. Sweta Sinha: Magahi Prosody *published by* Bahri Publications (2018)

Material Science and Engineering

Faculty Members

Dr. Anirban Chowdhury Assistant Professor	Materials Chemistry - chemical synthesis - structural and spectroscopic characterisations - thin films & coatings - nanomaterials- sol gel – ceramics
Dr. Anup Kumar Keshri Assistant Professor	Carbon Nanotube Reinforced Ceramic Matrix and Metal Matrix Composites, Thermal Spraying, Tribology of Materials, Process-Structure-Property Relationship
Dr. Dinesh Kumar Kotnees Assistant Professor	Polymer Science and Technology with specialization in Adhesion, Blends, Composites, Fillers and Bulk/Surface properties of Polymers
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
Dr. Devinder Yadav Assistant Professor	Flash sintering of ceramics, Thermomechanical processing, Electron microscopy, EBSD and texture, Friction stir processing, Structure-property correlation

Academic Programmes

- M.Tech in Material Science and Engineering
- Ph.D Program

Research & Development Activities

Papers Published in Journals

1. K. Dinesh Kumar, M.S. Satyanarayana, Ganesh C. Basak, Anil K. Bhowmick, Adhesion between compounded elastomers: A critical review, *Reviews of Adhesion and Adhesives*, (2018).
2. K. Dinesh Kumar, Ganesh C. Basak, Anil K. Bhowmick, Adhesion between unvulcanized elastomers: A critical review, *Reviews of Adhesion and Adhesives*, 5, 195 (2017).
3. Paul, Barnita, Kundan Kumar, Anirban Chowdhury, and Anushree Roy, Appearance of Fröhlich-like phonon mode and defect dynamics in La-+3doped ceria, *Journal of Applied Physics*, 122 (13) 135108 (2017).
4. P.R. Sreenath, Seema Singh, M.S. Satyanarayana, Prolay Das, K. Dinesh Kumar , Carbon dot - Unique reinforcing filler for polymer with special reference to physico - mechanical properties, *Polymer*, 112, 189 (2017).
5. A Chowdhury, Constitutive modelling and Weibull statistical analysis for the porosity-Mechanical property correlations in %3 yittria-stabilized zirconia system, *International Journal of Refractory Metals and Hard Materials*, 70 (1), 246–252 (2017).
6. R Kumar, K Kumar, A Chowdhury, Discrepancies in the hardness data and the role of grinding induced surface effects for a porous zirconate ceramic, *Journal of the American Ceramic Society*, 100 (4), 1717-1723 (2017).
7. Singh, Kushal, Kundan Kumar, Saurabh Srivastava, and Anirban Chowdhury. , Effect of rare-earth doping in CeO2 matrix: correlations with structure, catalytic and visible light photocatalytic properties, *Ceramics International*, 43 (18), 17041 (2017).
8. P Arunkumar, P Panda, M Sribalaji, R Ramaseshan, A K Keshri, K S Babu , Enhancing the oxygen ionic conductivity of (111) oriented Ce 0.80 Sm 0.20 O -2 thin film through strain engineering , *Electrochimica Acta*, 240, 437-446 (2017).
9. Kumar, Kundan, and Anirban Chowdhury, Facile synthesis of CuO nanorods obtained without any template and/or surfactant, *Ceramics International*, 43 (16), 13943-13947 (2017).
10. M. Sribalaji, Biswajyoti Mukherjee, Srinivasa Rao Bakshi, P. Arunkumar, K. Suresh Babu, A K Keshri , In-situ formed graphene nanoribbon induced toughening and thermal shock resistance of spark plasma sintered carbon nanotube reinforced titanium carbide composite , *Composites Part B: Engineering* , 123, 227–240 (2017).

11. Nibedita Kasyapi, K. Dinesh Kumar, Anil K. Bhowmick, Influence of microstructure of lactone-based triblock copolymers on drug release behavior of their microspheres, *Journal of Applied Polymer Science*, 134, 45284. (2017).

12. M Sribalaji, Biswajyoti Mukherjee, Aminul Islam, Anup Kumar Keshri , Microstructural and Mechanical Behavior of Spark Plasma Sintered Titanium Carbide with Hybrid Reinforcement of Tungsten Carbide and Carbon Nanotubes , *Materials Science and Engineering: A*, 702, 10–21 (2017).

13. K Kumar, T Jaro , A Chowdhury , On the peculiarities of phase developments involving Zn-+2doped ZrO2 system , *Scripta Materialia*, 138, 71-74 (2017).

14. Biswajyoti, Mukherjee, Asiq Rahman O.S, Aminul Islam, Sribalaji M, Anup Kumar Keshri,Plasma sprayed carbon nanotube and graphene nanoplatelets reinforced alumina hybrid composite coating with outstanding toughness , *Journal of Alloys and Compounds*, Vol. 727, 658-670 (2017).

15. Mohd Sharib, Rakesh Kumar, K. Dinesh Kumar, Polylactic acid incorporated polyfurfuryl alcohol bioplastics: thermal, mechanical and curing studies, *Journal of Thermal Analysis and Calorimetry*, (2018).

16. Aminul Islam, Biswajyoti Mukherjee, M. Sribalaji, O.S. Asiq Rahman, P. Arun kumar, K. Suresh Babu, Anup Kumar Keshri, Role of hybrid reinforcement of carbon nanotubes and graphene nanoplatelets on the electrical conductivity of plasma sprayed alumina coating , *Ceramics International*, vol. 44, 4508-4511 (2017).

17. Rakesh Kumar , Priya Rani and K. Dinesh Kumar , Soy Protein Isolate Film By Incorporating Mandelic Acid As Well As Through Fermentation Mediated by Bacillus Subtilis , *Journal of Renewable Materials*, (0).

18. Singh, Kushal, Kundan Kumar, Sanjib Nayak, Deep Chandra Joshi, Mir Motakabbir Alom, Subhash Thota, and Anirban Chowdhury. , Structural and dielectric properties of the fluorite-type La x Ce–1 x O–2 ceramics, *Journal of Physics D: Applied Physics*, 50 (49) 495601 (2017).

19. Nibedita Kasyapi, K. Dinesh Kumar, Anil K. Bhowmick, Sustainable bionanocomposite from D,L-lactide/d-valerolactone triblock and bionanowhiskers: Preparation, characterization, and properties , *Journal of Applied Polymer Science*, 135, 46035 (0).

20. O S Asiq Rahman, M Sribalaji, Biswajyoti Mukherjee, Tapas Laha, Anup Kumar Keshri,Synergistic effect of hybrid carbon nanotube and graphene nanoplatelets reinforcement on processing, microstructure, interfacial stress and mechanical properties of Al2O3 nanocomposites, *Ceramics International*, Vol. 44, 2109-2122 (2018).

21. K Singh, R Kumar, A Chowdhury, , Synergistic effects of ultrasonication and ethanol washing in controlling the stoichiometry, phase-purity and morphology of rare-earth doped ceria nanoparticles , *Ultrasonics Sonochemistry*, 36, 182-190 (2017).

22. M.Sribalaji, Aminul Islam, Biswajyoti Mukherjee, Mayank Kumar Pandey, Anup Kumar Keshri, Tailoring the thermal shock resistance of titanium carbide by reinforcement with tungsten carbide and carbon nanotubes, *Ceramics International*, Vol. 44, 2552-2562 (2018).

Papers Presented in Conferences

1. O. S.Asiq Rahman, Nitin P. Wasekar, Anup Kumar Keshri , Effect of Silicon Carbide on Microstructure and Mechanical Properties of Electrodeposition Nickel Tungsten Composite Coating, *IMME17,* NIT Trichy (2017)

2. Dr. Dinesh Kumar Kotnees, Enhanced rubber-rubber filler interactions for better dynamic properties with special reference to low rolling resistance tyres, *DAE 201*, MIT campus, Anna University, Chennai (2017)

3. Sribalaji M., Biswajyoti Mukherjee, Anup Kumar Keshri , Fabrication of spark plasma sintered carbon nanotube reinforced titanium carbide ultra high temperature ceramics with improved thermal shock resistance, *Research Scholar's Day, IIT Patna* , IIT Patna (2017)

4. Kushal Singh, Anirban Chowdhury, Faceted Nanocrystals of Ce–1xZrxO2 (x = 0.5 ,0.6 ,0.8) for Catalytic Applications, *International Conference on Nanotechnology: Ideas, Innovations and Initiatives (ICN:3I2017-)* , IIT Roorkee. (2017)

5. Kundan Kumar, Anirban Chowdhury, Facile surfactant-free synthesis of CuO nanorods and its applications in waste water treatment, *International Conference on Nanotechnology: Ideas, Innovations and Initiatives (ICN:3I2017-), IIT Roorkee*, IIT Roorkee. (2017)

6. O.S Asiq Rahman, Biswajyoti Mukherjee, Sony Priyadershini, Graphene Nanoplatelets Reinforced Plasma Sprayed Alumina Coating with Improved Mechanical Properties,*International Conference on Nanotechnology, Ideas, Innovations and Initiatives (ICN: 31-2017)*, IIT Roorkee (2017)

7. Biswajyoti Mukherjee, Rishow Kumar, Aminul Islam, Anup Kumar Keshri, Graphene Nanoplatelets Reinforced Plasma Sprayed Alumina-Coating With Improved Mechanical and Wear Properties,*Research Scholar's Day, IIT Patna*, IIT Patna (2018)
8. Rishow Kumar, Biswajyoti Mukherjee, Anup Kumar Keshri, Graphene Nanoplatelets Reinforced Plasma Sprayed Alumina-Titania Coatings with Improved Mechanical and Wear Properties,*Conference on Advanced Nanomaterial and Nanotechnology (ICANN-2017)*, IIT Guwahati (2017)
9. Sribalaji M, Biswajyoti Mukherjee, Anup Kumar Keshri, In-situ Formation of Two Dimensional Graphene Nanoribbon in Carbon Nanotube reinforced Titanium Carbide Composite and its Effect on Toughness, *The 3rd International Conference on 2D materials and technology (ICON2-DMAT)*, NTU Singapore (2017)
10. Swarnima Singh, M. Sribalaji, Nitin P. Wasekar, Srikant Joshi,G. Sundararajan, RaghuvirSingh, Anup Kumar Keshri, Microstructural, phase evolution and corrosion properties of silicon carbide reinforced pulse electrodeposited nickel–tungsten composite coatings , *Research Scholar's Day, IIT Patna*, IIT Patna (2017)
11. Kundan Kumar, Anirban Chowdhury, Phase anomalies in the ZnO-stabilized ZrO2 system, *National Metallurgists Day-Annual Technical Meeting (NMD-ATM)*, BITS Pilani, KK Birla Goa Campus (2017)
12. Sony Priyadershini, O.S Asiq Rahman, Anup Kumar Keshri , Plasma Sprayed Graphene Nanoplatelets Reinforced Alumina Nanocomposite Coating with Improved Scratch Resistance *Conference on Advanced Nanomaterial and Nanotechnology (ICANN-2017)*, IIT Guwahati (2017)
13. Swarnima Singh, O.S. Asiq Rahman, Anup Kumar Keshri, Plasma Sprayed Graphene Nanoplatelets Reinforced Hydroxyapatite Coating with Enhanced Mechanical Properties,*Research Scholar's Day, IIT Patna*, IIT Patna (2018)
14. Swarnima Singh, Anup Kumar Keshri, Plasma Sprayed Graphene Nanoplatelets Reinforced Hydroxyapatite Coating with Enhanced Mechanical Properties, *International Conference on Nanotechnology, Ideas, Innovations and Initiatives (ICN: -31 2017)*, IIT Roorkee (2017)
15. O.S. Asiq Rahman, Biswajyoti Mukherjee, M Sribalaji, Srinivasa Rao Bakshi, Anup Kumar Keshri, Role of carbon nanotube as sintering aid and toughening agent in spark plasma sintered molybdenum disilicide-hafnium carbide composite, *Research Scholar's Day, IIT Patna*, IIT Patna (2018)
16. O.S. Asiq Rahman, Sony Priyadershini, Anup Kumar Keshri, Scratch Resistance of Plasma Sprayed Graphene Nanoplatelets Reinforced Alumina Nanocomposite Coating, *Research Scholar's Day, IIT Patna* , IIT Patna (2018)
17. Biswajyoti Mukherjee, O.S Asiq Rahman, Sribalaji M, Anup Kumar Keshri, Spark Plasma Sintering of Molybdenum Disilicide and Multi-Walled Carbon Nanotube Reinforced hafnium carbide Ceramic Composite, *Indian Institute of Metals (NMD-ATM)*, Bits Pilani, Goa (2017)
18. Kushal Singh, Kundan Kumar, Anirban Chowdhury, Structural and Enhanced Catalytic Reduction Properties for LaxCe–1 xO2– (x = 0.2 ,0.1 and 0.5) Nanoparticles along with the Additional Benefit of Photocatalytic Activity, *9th International Conference on Materials for Advance technologies*, Suntec, Singapore (2017)
19. Saurabh Srivastava, Anirban Chowdhury, Structure-property correlations for LaxCe-1xO-2 (x=0.15 ,0.05) system, *National Metallurgists' Day- 71st Annual Technical Meeting*, BITS Pilani, KK Birla Goa Campus (2017)
20. M. Sribalaji, Biswajyoti Mukherjee, Aminul Islam, Tapas Laha, Anup Kumar Keshri, Synergistic Reinforcement of Tungsten Carbide and Carbon Nanotubes for Improving the Fracture Toughness of Titanium Carbide based Ultra High Temperature Ceramic, *28th International Conference on Diamond and Carbon Related Materials*, Gothenburg, Sweden (2017)
21. O.S Asiq Rahman, S.T Aruna, Rishi Raj, Anup Kumar Keshri, Wettability of Plasma Sprayed Cerium Oxide Coatings, *Indian Institute of Metals (NMD-ATM)*, Bits Pilani, Goa (2017)

Sponsored Research Projects

1. Fabrication of Robust Plasma Sprayed Rare Earth Oxide Hydrophobic Coating for the High Temperature and Wear Resistance Applications (SERB-DST, Rs.26.74 Lakhs) (PI : Anup Kumar Keshri)
2. Improvement of low temperature performance and room temperature physical properties of elastomer (Denki Kagaku Kokyo K.K, Tokyo, Japan, Rs.20.00 Lakhs) (PI : Dr. Dinesh Kumar Kotnees)
3. Plasma Sprayed Carbon Nanotube and Graphene Reinforced Alumina Hybrid Nanocomposite Coating with Enhanced Properties for Light Metal Alloys (Indian Space Research Organization (ISRO), Rs.19.40 Lakhs) (PI : Anup Kumar Keshri)

4. Plasma Sprayed Carbon Nanotube reinforced Molybdenum Disulfide Anti-friction Nano Composite Coating with enhanced Mechanical and Wear Properties (Naval Research Board, Rs.15.50 Lakhs) (PI : Anup Kumar Keshri)
5. Surface modified metallic ortopedic implant for sustained drugrelease(DST/TSG/AMT,Rs.92.49 Lakhs) (PI : Dr. Debrupa Lahiri (IIT Roorkee))
6. Synthesis & characterisation of faceted nanocrystalline powders of Ceria-Zirconia and related systems (SERB-DST, Rs.26.75 Lakhs) (PI : Dr. Anirban Chowdhury)

Consultancy Projects

1. Bullet Proof Coating (Reserve Bank of India, Rs.4.50 Lakhs) Consultant Name: Anup Kumar Keshri
2. Fe based Coating (Tata Steel Limited, Rs.12.00 Lakhs) Consultant Name: Anup Kumar Keshri
3. Plasma Spray Process Map of the Powder (Carborundum Universal Limited (CUMI), Kerala (Murugappa Group Company), Rs.8.00 Lakhs) Consultant Name: Anup Kumar Keshri
4. Thermal Spray Coating (Tata Steel Limited, Rs.8.00 Lakhs) Consultant Name: Anup Kumar Keshri
5. Understanding the factors influencing the tack behavior of rubbers used in tire industry (MRF Tyres, Chennai, Tamil Nadu, India, Rs.23.00 Lakhs) Consultant Name: Dr. Dinesh Kumar Kotnees

Patents (filed / granted)

1. Patent Name:A Phaseand Stoichiometrically Pure Ceramic Powderanda Pprocess forthe Preparation Thereof; Patent Owner: Anirban Chowdhury

Other Activities

Awards & Honours

1. Anup Kumar Keshri (2017) *Best Poster Award at NIT Trichy*
2. Anup Kumar Keshri (2018) *Best Poster Award in RSD IIT Patna*
3. Anup Kumar Keshri (2017) *Best Poster Award in RSD IIT Patna*

Visits Abroad by Faculty Members

1. Anup Kumar Keshri - International Conference (NTU Singapore) 11-15 Dec., 2017
2. Dinesh Kumar Kotnees - Denka, Japan for project discussion (Tokyo, Japan) April, 2017

Invited Lectures by Faculty Members

1. High-temperature materials for defence & marine applications *by* Anirban Chowdhury (IWCEM 2017 Hotel Crowne Plaza, Jaipur)
2. Improving Metal-Rubber Adhesion via Multifunctional Oxide Coating *by* Anirban Chowdhury (CIPET APM 2017), at IISc Bangalore)
3. Compositional Anomalies in Oxide Nanoparticles: Impact on the Target Functional Properties *by* Anirban Chowdhury (Mahatma Gandhi University, Kottayam, Kerala)
4. Strengthening of Institute-Industry Interactions: Issues & Perspectives *by* Anirban Chowdhury (TEQIP Short Term Course on "Institute-Industry Interactions" at NIT Patna.)
5. Development of Process Maps for Synthesizing High Density Aluminum Oxide-Carbon Nanotube Coatings by *by* Anup Kumar Keshri (Mahatma Gandhi University, Kottayam, Kerala)
6. Comprehensive Process Maps for Synthesizing High Density Aluminum Oxide-Carbon Nanotube Coatings by *by* Anup Kumar Keshri (Bharathiar University, Coimbatore, India)
7. Tack of elastomers *by* Dinesh Kumar Kotnees (CEAT, Baroda)
8. Adhesion behavior of elastomers *by* Dinesh Kumar Kotnees (Naval Physical & Oceanographic Laboratory (NPOL), Cochin)

Mathematics

Faculty Members

Dr. Ashish Kumar Upadhyay Associate Professor	Combinatorial Topology, Geometric Topology, Algebraic Topology, Algorithmic and Combinatorial aspects of Low - dimensional Manifolds, Synthetic Geometry, Combinatorial Geometry, Graphs on Surfaces, Automorphism Groups
Dr. Om Prakash Associate Professor	Rings & Modules, Associated Prime Rings
Dr. Yogesh Mani Tripathi Associate Professor	Statistical Decision Theory, Statistical Inference
Dr. Debashree Guha Adhya Assistant Professor	Fuzzy logic and its application
Dr. Nutan Kumar Tomar Assistant Professor	Mathematical Control Theory, Nonlinear Functional Analysis, Optimal Control
Dr. Prashant Kumar Srivastava Assistant Professor	Mathematical Modeling in Ecology and Epidemiology, Applications of Differential Equations in Biology, Stability and Bifurcation, Mathematical Modeling of HIV dynamics :in vivo
Dr. Sudhan Majhi Assistant Professor	Signal processing for wireless communication, blind signal classification, blind signal synchronization , blind parameter estimation, secrecy capacity of cognitive radios and cooperative communications, MIMO, OFDM, MIMMO-OFDM, SC-FDMA, NOMA, UWB systems, receiver design and implementation on testbed, and Sequence design for wireless communication
Dr. Amit Kumar Verma Assistant Professor	Analysis of Nonlinear Differential Equations, Numerical Solutions of ODEs and PDEs
Dr. Pratibhamoy Das Assistant Professor	Numerical Analysis, Moving Mesh Methods, Singular Perturbation, A posteriori Error Estimates, r-refinement Strategy
Dr. Subhabrata Paul Assistant Professor	Algorithmic graph theory
Dr. Pradeep Kumar Rai Assistant Professor	Finite Group Theory: p-groups, Schur multiplier, Automorphisms of groups.
Dr. Balendu Bhooshan Upadhyay Assistant Professor	Nonlinear Optimization; Variational Inequality; Semi-infinite Programming; Fixed Point Theory; Differential Manifolds

Academic Programmes

- M.Tech in Mathematics and Computing
- M.Sc in Mathematics
- Ph.D Program

Research & Development Activities

Papers Published in Journals

1. P. Das, A higher order difference method for singularly perturbed parabolic partial differential equations, *Journal of Difference Equations and Applications, doi:10.1080/10236198.2017.1420792,* 24, 3, 452-477 (2018).
2. S. Das, S. Budishin, Sudhan Majhi, Z. Liu, Y. L. Guan , A Novel Multiplier-Free Generator for Complete Complementary Codes , *IEEE Transactions on Signal processing*, 66 (2018).

3. M. Chandru, T. Prabha, P. Das, V. Shanthi , A numerical method for solving boundary and interior layers dominated parabolic problems with discontinuous convection coefficient and source terms, *Differential Equations and Dynamical Systems*, (2017).
4. V.K. Mishra and N.K. Tomar, Alternate checking criteria for reachable controllability of rectangular descriptor systems, *Kybernetika*, 53(5) (2017).
5. Yogesh Mani Tripathi,TanmayKayal and SankuDey, Efficient Estimation of the PDF and the CDF of Exponentiated MomentExponential Distribution, *International Journal of Systems Assurance Engineering and Management*, Vol. 8, 1282–1296 (2017).
6. Sheela Suthar and Om Prakash, Energy and Wiener index of Total Graph over Ring Zn, *Electronic Notes in Discrete Mathematics*, 63, 485–495 (2017).
7. Yogesh Mani Tripathi, C. Petropoulos, Farha Sultana and M. K. Rastogi, Estimating a Linear Parametric Function of a Doubly Censored Exponential Distribution, *Statistics*, Vol. 52, 99-114 (2018).
8. S. Singh and Yogesh Mani Tripathi, Estimating the parameters of an inverse Weibull distribution under progressive type-I interval censoring, *Statistical Papers*, Vol. 59, 21-56 (2018).
9. Devendra Pratap Singh, Yogesh Mani Tripathi, Manoj Kumar Rastogi and Nikhil Dabral, Estimation and Prediction for a Burr III Distribution with Progressive Censoring, *Communications in Statistics: Theory and Methods*, Vol. 46, 9591-9613 (2017).
10. R. Radhakrishnan, S. Bhaumik, and N.K. Tomar, Gaussian sum shifted Rayleigh filter for underwater bearings-only target tracking problems , *IEEE Journal of Oceanic Engineering*, Accepted (2018).
11. udhan Majhi, R. Gupta, W. Xiang, and S. Glisic, Hierarchical Hypothesis and Feature based Blind Modulation Classification for Linearly Modulated Signals , *IEEE Transaction on Vehicular Technology*, 66 (2017).
12. Sudhan Majhi, M. Kumar, and W. Xiang, Implementation and Measurement of Blind Wireless Receiver Testbed for Single Carrier Systems, *IEEE Transactions on Instrumentation & Measurement*, 66 (2017).
13. T. kayal, Yogesh Mani Tripathi, M. K. Rastogi and A. Asgharzadeh, Inference for Burr XII distribution under Type-I progressive hybrid Censoring, *Communications in Statistics: Simulation and Computation*, Vol. 46, 7447-7465 (2017).
14. M. Kumar and S. Majhi, Joint signal detection and synchronization for OFDM based cognitive radio networks and its implementation , *Wireless Networks*, 2018 (2018).
15. Y.M. Tripathi, Somesh Kumar and C. Petropoulos, Minimax estimators for the lower-bounded scale parameterof a location-scale family of distributions, *Communicationsin Statistics – Theory and Methods*, Vol. 46, 9185-9193 (2017).
16. Anshika Srivastava, R. K. Pandey and Om Prakash, Motzkin's maximal density and related chromatic numbers, *Unif. Distrib. Theory*, 13(1), 27-45 (2018).
17. M.K. Gupta, N.K. Tomar, V.K. Mishra, and S. Bhaumik, Observer design for semilinear descriptor systems with applications to chaos-based secure communication , *International Journal of Applied and Computational Mathematics*, 3(1) (2017).
18. Chandrakant, Yogesh Mani Tripathi and Manoj Kumar Rastogi, On a Discrete Analogue of Linear Failure Rate Distribution , *American Journal of Mathematical and Management Sciences*, Vol. 36, 229-246 (2017).
19. Pradeep Kumar Rai, On classification of groups having Schur multiplier of maximum order II, *Archiv der Mathematik*, Accepted (2018).
20. Amit K. Verma and Sheerin Kayenat , On the Convergence of Mickens' type Nonstandard Finite Difference Schemes on Lane-Emden Type Equations, *Journal of Mathematical Chemistry*, - (2018).
21. Anshika Srivastava, R. K. Pandey and Om Prakash, On the maximal density of integral sets whose differences avoiding the weighted Fibonacci numbers, *Integers. Electronic Journal of Combinatorial Number Theory*, 17, A48 (1-19) (2017).
22. Raj Kamal Maurya, Yogesh Mani Tripathi, Manoj Kumar Rastogi and A. Asgharzadeh, Parameter Estimation for a Burr XII Distribution under Progressive Censoring, *American Journal of Mathematical and Management Sciences*, Vol. 36, 259-276 (2017).
23. P. Das and J. Vigo-Aguiar, Parameter uniform optimal order numerical approximation of a class of singularly perturbed system of reaction diffusion problems involving a small perturbation parameter, *Journal of Computational and Applied Mathematics*, (2017).

24. Sudhan Majhi, N. Nandan, Secrecy Capacity Analysis of MIMO System over Multiple Destinations and Multiple Eavesdroppers, *Wireless Personal Communications*, 2018 (2018).
25. Habibul Islam and Om Prakash, Skew cyclic and skew (u1 + u2 + v3 + uv4)-constacyclic codes over Fq + uFq + vFq + uvFq, *Int. J. Inf. Coding Theory*, Accepted (2018).
26. Shalini Chandra, Om Prakash and Sheela Suthar , Some Properties of the Nilradical and Non-nilradical Graphs over Finite Commutative Ring Zn , *Algebra Discrete Math.*, 24(2), 181–19 (2017).
27. R. K. Mistri, R. K. Pandey and Om Prakash, Subset and Subsequence Sums in Integers, *J. Comb. Number Theory,* 8(3), 207-223 (2017).

Papers Presented in Conferences

1. Arindam Ghosh and Om Prakash , A Note on Jordan Derivation over Algebra of Matrices,*International Conference on Linear Algebra and its Applications*, Manipal, Karnataka (2017)
2. S. Das, Sudhan Majhi, S. Budisin, Z. Liu and Y. L. Guan , A Novel Multiplier-Free Generator for Complete Complementary Codes, *23rd Asia-Pacific Conference on Communications (APCC)* , Australia (2017)
3. M. Kumar and Sudhan Majhi , An Efficient Blind CFO Estimation Technique for MIMO-OFDM Systems Using Space-time Diversity, *14th International Wireless Communications and Mobile Computing Conference*, Cyprus (2018)
4. M. Chandru, T. Prabha, P. Das, V. Shanthi and H. Ramos , An efficient numerical method for two parameter singularly perturbed problem with discontinuous convection coefficient and source term,*17th International Conference Computational and Mathematical Methods in Science and Engineering (CMMSE 2017)*, Universidad de Cadiz, Spain (2017)
5. Tanma Sen, Yogesh Mani Tripathi, Bayesian optimum warranty length under Type-II unified hybrid censoring scheme, *10th International Conference of the ERCIM (European Research Consortium for Informatics and Mathematics) Working Group on Computational and Methodological Statistics (CMStatistics 2017)*, University of London, UK (2017)
6. R. Radhakrishnan, S. Bhaumik, and N.K. Tomar, Continuous-Discrete Quadrature Filters for Intercepting a Ballistic Target on Reentry using Seeker Measurements, *Third IFAC International Conference on Advances in Control and Optimization of Dynamical Systems*, Hyderabad, India (2018)
7. R. Radhakrishnan, S. Bhaumik, and N.K. Tomar, Continuous-discrete shifted Rayleigh filter for underwater passive bearings-only target tracking,*Asian Control Conference*,Gold Coast Convention Centre, Australia (2017)
8. Anshika Srivastava, Om Prakash and R. K. Pandey, Distance graph with maximum chromatic number, *Research Scholar Day at IIT Patna*, Bihta (2018)
9. C. Petropoulos,Yogesh Mani Tripathi, Farha Sultana and Manoj Kumar Rastogi,Estimating a Linear Parametric Function of a Doubly Censored Exponential Distribution,*European Meeting of Statisticians in Helsinki*, Finland (2017)
10. Farha Sultana, Yogesh Mani Tripathi, Estimating the parameters of the Kumaraswamy Distribution under type-I Hybrid Censoring, *The 2017 IISA International Conference on Statistics*, Hyderabad International ConventionCenter (2017)
11. Tanma Kayal, Yogesh Mani Tripathi, Estimation and prediction for a distribution with bathtub shape under progressive first failure censoring, *10th International Conference of the ERCIM (European Research Consortium for Informatics and Mathematics) Working Group on Computational and Methodological Statistics (CMStatistics 2017)*, University of London, UK (2017)
12. Sudhan Majhi, M. Kumar and W. Xiang, Implementation and Measurement of Blind Wireless Receiver for Single Carrier Systems, *International Instrumentation and Measurement Technology Conference*, USA (2018)
13. Arindam Ghosh and Om Prakash , Jordan derivations and its extension on matrix algebras,*Research Scholar Day at IIT Patna*, Bihta (2018)
14. R. Adhikary, Sudhan Majhi, Z. Liu, and Y. L. Guan, New Optimal Binary Z-Complementary Pairs of Odd Length, *International Workshop on Signal Design and its Applications in Communications (IWSDA)*, Japan (2017)
15. Sudhan Majhi, R. Gupta, and W. Xiang , Novel Blind Modulation Classification of Circular and Linearly Modulated Signals Using Cyclic Cumulant , *IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, Canada (2017)
16. S. Chandra, M.K. Gupta, and N.K. Tomar, Observer Design Approach to Synchronize Lorenz Chaotic Systems for Secure Communication, *International Conference on Computational Modellimg and Simulation*, University of Colombo, Sri Lanka (2017)

17. Tanmay Sen, Ritwik Bhattacharya, Yogesh Mani Tripathi, Biswabrata Pradhan, On optimum reliability acceptance sampling plans under generalized hybrid censoring scheme,*5th IIMA international conference on Advanced data analytics, business analytics and intelligence*, Indian Institute of Management Ahmedabad (2017)
18. Ram Krishna Verma and Om Prakash, On the breadth of p-groups and nilpotent Lie algebras, *Research Scholar Day at IIT Patna*, Bihta (2018)
19. P. Das and J. Vigo-Aguiar, Parameter uniform numerical approximation of the solution ofasystemof reaction diffusionproblemsinvolving a small perturbation parameter, *17th International Conference Computational and Mathematical Methods in Science and Engineering (CMMSE 2017)*, Universidad de Cadiz, Spain (2017)
20. N. Nandan and Sudhan Majhi, Secrecy Outage Analysis by Applying Bi-directional Beamforming in Underlay MIMO-CRN, *14th International Wireless Communications and Mobile Computing Conference*, Cyprus (2018)
21. Farha Sultana, Yogesh Mani Tripathi, Statistical Analysis of Type-II Progressive Hybrid Censoring for Kumaraswamy Distribution, *11th International Conference of Institute for Mathematics, Bioinformatics, Information Technology and Computer Science (IMBIC) on Mathematical Sciences for Advancement of Science and Technology (MS*, Kolkata, India (2017)
22. Amulya Kumar Mahto, Yogesh Mani Tripathi, Statistical inference of Gumbel Type-II distribution under hybrid censoring, *Third International Conference on Statistics for Twenty-First Century (ICSTC-2017)*, University of Kerala, Trivandrum, India. (2017)

Sponsored Research Projects

1. Estimation under censored data (SERB DST, Rs.15.00 Lakhs) (PI : Yogesh Mani Tripathi)
2. Towards New Platform on Generalized Vector Variational Inequalities: Scope in Optimization and Bilevel Programming (Science and Engineering Research Board, Rs.1494350.00) (PI : Dr. Balendu Bhooshan Upadhyay)

Other Activities

Member - Professional Bodies

1. Amit Kumar Verma - Bharat Ganita Parishad
2. Amit Kumar Verma - Indian Mathematical Society
3. Balendu Bhooshan Upadhyay (2011) International Society on Multicriteria Decision Making
4. Balendu Bhooshan Upadhyay (2012) Indian Mathematical Society
5. Balendu Bhooshan Upadhyay (2010) Working Group on Generalized Convexity
6. Nutan Kumar Tomar - Indian Mathematical Society
7. Om Prakash - The Indian Mathematical Society, Pune
8. Om Prakash - The Indian Science Congress, Kolkata
9. Om Prakash - The Calcutta Mathematical Society, Kolkata
10. Prashant Kumar Srivastava (2017) The National Academy of Sciences, India (NASI)
11. Prashant Kumar Srivastava (2013) Society for Mathematical Biology
12. Prashant Kumar Srivastava (2010) Indian Society for Mathematical Modelling and Computer Simulation (ISMMACS)
13. Prashant Kumar Srivastava (2012) Indian Mathematical Society (IMS)
14. Sudhan Majhi (2015) IEEE

Member - Editorial Board

1. Amit Kumar Verma (2018) *Member* - Ganita
2. Pratibhamoy Das (2018) *Editorial Board Member* - Journal of Modern Methods in Numerical Mathematics
3. Pratibhamoy Das (2018) *Editorial Board Member* - Universal Journal of Computational Mathematics

4. Pratibhamoy Das (2018) *Editorial Board Member* - International Journal of Mathematics And its Applications
5. Pratibhamoy Das (2018) *Editorial Board Member* - BIOINFO Computational Mathematics
6. Sudhan Majhi (2015) *Associate Editor* - CSSP

Visits Abroad by Faculty Members

1. Nutan Kumar Tomar - Invited in a DAAD Alumina Event (University of Colombo, Sri Lanka) May 17-19, 2017
2. Prashant Kumar Srivastava - Conference (Institute of Numerical Mathematics, Russian Academy of Sciences, Moscow, Russia) October 30-November 3, 2017

Invited Lectures by Faculty Members

1. Nonlinear Singular Differential Equations arising in Real Life. *by* Amit Kumar Verma (IIT Guwahati)
2. LeTeX [Beamer, Mathematics Typesetting] *by* Amit Kumar Verma (KIIT Bhubaneshawar)
3. A talk was delivered on Fermats Last Theorem and life of Andrew Wiles *by* Amit Kumar Verma (BBVP Pilani)
4. Monotone Iterative Technique *by* Amit Kumar Verma (KKC College, Lucknow on)
5. Impact of information on treatment as well as on disease dynamics *by* Prashant Kumar Srivastava (International Conference on Mathematical Modelling And Computations In Biosystems (ICMCB2018-) March 2018 ,14-12 at IIT Roorkee)
6. Nonlinear Dynamics of Infectious Diseases via Information-Induced Vaccination and Saturated Treatmen *by* Prashant Kumar Srivastava (National Conference on Mathematical and Theoretical Biology (NCMTB 2018), March 2018 ,23-22, held at Jadavpur University Kolkata)
7. Role of Pharmaceutical & Non-pharmaceutical interventions on a Disease Dynamics:Modeling and Control *by* Prashant Kumar Srivastava (International Conference on Current Trends in Theoretical and Computational Differential Equations with Applications, December 2017 ,5-1, at South Asian University, New Delhi)
8. Impact of Information and Treatment on a Disease Dynamics: Modeling and Control*by*Prashant Kumar Srivastava (6th China India Japan Korea Mathematical Biology Colloquium (CIJKMB), August 23-26, 2017, at IIT Kanpur)
9. Systematic construction of Sequence *by* Sudhan Majhi (Vidyasagar University)
10. A posteriori Based Convergence Analysis for A Nonlinear System of Delay Differential Equations with *by* Pratibhamoy Das (Jadavpur University)
11. Rings & Modules *by* Om Prakash (NISER, Bhubaneswar (Training Programme in Mathematics- 2017 (for level-3))
12. Introduction to Rings and Modules *by* Om Prakash (Department of Mathematics, Patna University, Patna)
13. Fun with Mathematics *by* Prashant Kumar Srivastava (National conference on Mathematics at BBVP, Pilani, April 2017 ,15)
14. Generalization of Armendariz rings, Application of skew polynomial rings in coding theory *by* Om Prakash (Department of Mathematics, NEHU Shillong)
15. Applications of Algebra in Coding Theory *by* Om Prakash (NIT Manipur, Imphal)
16. Introduction to Rings & Modules *by* Om Prakash (Department of Mathematics, Manipur University, Imphal)
17. Mathematica in Faculty Development Program *by* Amit Kumar Verma (IIT (ISM) Dhanbad)
18. On Life of Mathematicians and Cardinality of Sets *by* Amit Kumar Verma (Inspire Camp at Gopinath PG College, Gazipur, UP)

Short-Term Courses, Training Programmes and Workshops organised

1. Instructional School for Teachers sponsored by National Board of Higher Mathematics (May 1-13, 2017)
2. Mathematical Framework of Sequence Design for Wireless Communication Systems (1 week)
3. Modelling approaches for coupled multiphysics engineering problems (5 Days)
4. Monotone Iterative Technique (5th Nov 2017 to 11th Nov 2017 at IIT Patna)
5. Workshop on Sobolev Space (16th February to 23rd February 2017)

Mechanical Engineering

Faculty Members

Dr.Akhilendra Singh Associate Professor	FEM, XFEM, Meshfree Method, Computational Mechanics, Fracture and Fatigue, Thermal Engineering
Dr.KaraliPatra Associate Professor	Smart materials and smart systems; Micromachining; Condition Monitoring; Robotics and Mechatronics
Dr.Manabendra Pathak Associate Professor	Computational fluid dynamics and heat transfer; Turbulence modeling; Two-phase flow in micro and minichannels; Dispersion of particles, droplets and bubbles at micro- and nano-scales; Rheological and heat transfer characteristics of viscoplastic fluids; Nuclear materials; Solar thermal technology
Dr.Mayank Tiwari Associate Professor	Tribology, Gear, bearing wear and dynamics, Vacuum Tribology, Machine Dynamics, Rotor dynamics, Vibrations, Acoustics
Dr.Mohd. Kaleem Khan Associate Professor	Nuclear Reactor Safety; Two-phase flow in microchannels; Solar Thermal Technology; Non-Newtonian fluids
Dr.ProbirSaha Associate Professor	Conventional and non-conventional machining, Welding, Soft computing in manufacturing process
Dr.SomnathSarangi Associate Professor	Continuum Mechanics
Dr.SudhanshuSekhar Panda Associate Professor	Tool condition monitoring, Soft Computing, Metal Cutting and Machining, Industrial application of Soft computing technique in Machining, Designing of experiments, Statistical modelling,Bio Machining, Sensors Calliberation
Dr.Atul Thakur Assistant Professor	Bio-inspired robotics, physics-aware planning of robotic systems, and application of robotics techniques for micro-manipulation of biological cells
Dr. Rishi Raj Assistant Professor	Phase Change Heat Transfer, Micro-/Nano-Scale Transport, Energy, Surface Science, Microgravity Science
Dr.Somnath Roy Assistant Professor	Computational Fluid Dynamics, Turbulence, Mixing and Heat Transfer, High Performance Computation
Dr.Subrata Kumar Assistant Professor	Heat transfer, Laser Material Processing, Flow of Granular Materials, CFD
Dr.Anirban Bhattacharya Assistant Professor	Incremental sheet metal forming, Rapid prototyping, Conventional machining, Grinding, Non-conventional machining, Welding, Modeling and simulation of Manufacturing processes and systems
Dr.AnirbanMahato Assistant Professor	*In situ* analysis, High Speed Imaging, Manufacturing processes; Materials Processing; Tribology
Dr.Chiranjit Sarkar Assistant Professor	Magnetorheological (MR) Fluids and Devices, Tribology, CFD of Grease flow
Dr.SudheerSiddapureddy DST INSPIRE Faculty	Heat Transfer in Fire, Thermal Radiation, Computational Fluid Dynamics
Dr.Murshid Imam Assistant Professor	Friction stir welding, Hot deformation of metallic materials, Additive manufacturing
Dr.Deepu P Assistant Professor	Hydrodynamic stability, Bio-physical aerodynamics, Multiphase flow
Dr.Surajit Kumar Paul Assistant Professor	Computational plasticity, fatigue and fracture, sheet metal forming, crashworthiness, finite element analysis, molecular dynamics

Academic Programmes

- B.Tech in Mechanical Engineering
- M.Tech in Mechatronics
- M.Tech in Mechanical Engineering
- Ph.D. Program

Research & Development Activities

Papers Published in Journals

1. S. Suman, M.K. Khan, M. Pathak, and R.N. Singh , Effects of delta-hydride precipitated at a crack tip on crack instability in Zircaloy4-, *International Journal of Energy Research*, 42 284-292 (2018).
2. S. Suman, M.K. Khan, M. Pathak and R.N. Singh, 3D simulation of hydride-assisted crack propagation in zircaloy4- using XFEM, *International Journal of Hydrogen Energy*, 42 18668-73 (2017).
3. Gundupalli, S., P., Hait, S., and Thakur, A., A review on automated sorting of source-separated municipal solid waste for recycling, *Waste Management*, 60:56-74 (2017).
4. D. Yu. Pimenov, V. I. Guzeev, T. Mikolajczyk and K. Patra, A study of the influence of processing parameters and tool wear on elastic displacement of the technological system under face milling, *International Journal of Advanced Manufacturing Technology*, Volume 92, 4473–44 (2017).
5. Pintukumar,S S panda, An innovative method to join two polymer rods through Y-shape extrusion channel, *measurement*, (2018).
6. Kumar, N., Raza, Md. Q., Raj, R., Aqueous Ionic Liquid Solutions for Boiling Heat Transfer Enhancement in the Absence of Buoyancy Induced Bubble Departure, *International Journal of Heat and Mass Transfer*, 22, pp. 354-363 (2018).
7. C K Nirala., SahaProbir, "Precise μEDM-drilling using Real-time Indirect Tool Wear Compensation", *Journal of Materials Processing Technology*, Vol.240,pp.176-189 (2017).
8. P. Deepu, S. Ravichandran and R. Govindarajan, Caustics-induced coalescence of small droplets near a vortex , *Physical Review Fluids*, 2, 024305 (2017).
9. 14. S. Ravichandran, P. Deepu and R. Govindarajan, Clustering of Heavy Particles in Vortical Flows: A Selective Review, *Sadhana - Academy Proceedings in Engineering Science*, 42(4), pp. 597-605 (2017).
10. Lars G. Westerberg, JosepFarréLladós, Chiranjit Sarkar and Jasmina Casals-Terré, Contaminant Particle Motion in Lubricating Grease Flow: A Computational Fluid Dynamics Approach, *Lubricants*, 2018, Vol. 6 No. 10, pp 1 – 14.
11. Y. Guo, A. Mahato, N. K. Sundaram, Controlling surface strain distribution in copper using plane strain wedge sliding, *Journal of Materials Processing Technology,* 2018, 258, 106-115.
12. DesireddyShashidhar Reddy, Mohd. KaleemKhan, Md. ZeeshanAlam, Haroon Rashid, Design charts for Scheffler Reflector, *Solar Energy*, accepted (2018).
13. Ahmed, S., Saha, Probir, Development and testing of fixtures for friction stir welding of thin aluminium sheets, *Journal of Materials Processing Technology*, Vol.252,pp.242-248 (2018).
14. Kumar, A., and Raj, R., Droplets on Microdecorated Surfaces: Evolution of the Polygonal Contact Line, *Langmuir*, 33 (19), pp 4854–4 (2017).
15. Chandan Kumar and S. Sarangi, Dynamic response of unbalanced rigid rotor bearing system with non-linear hydrodynamic force, *ASME- Journal of Computational and Nonlinear Dynamics*, doi:10.1115/1.403799 (2017).
16. Gunjan, M. R., and Raj, R., Dynamic Roughness Ratio Based Framework for Modeling Mixed Mode of Droplet Evaporation, *Langmuir*, 33 (28), pp. 7191-72 (2017).
17. P Deepu, C Peng, S Moghaddam, Dynamics of ultrasonic atomization of droplets, *Experimental Thermal and Fluid Science*, 92, pp. 243-247 (2018).
18. AshuGarg, Anirban Bhattacharya, Ajay Batish, Effect of Cold Vapour Treatment on Geometric Accuracy of Fused Deposition Modelling Parts, *Rapid Protyping Journal*, 23(6), 1226 –1236 (2017).

19. Sanjeev Kumar, Ajay Batish, Rupinder Singh, Anirban Bhattacharya, Effect of cryogenically treated copper-tungsten electrode on tool wear rate during electro-discharge machining of Ti5-Al2.5-Sn alloy , *Wear*, 386–387, 223-229 (2017).

20. Kriti Arya S. Sarangi, Effect of damage on the free radial oscillations of an incompressible isotropic tube, *Mathematics and Mechanics of Solids*, DOI: 10.1080/1532500 (2017).

21. T. Sood, S. Roy and M. Pathak, Effect of Pulse Rate Variation on Blood Flow through Axisymmetric and Asymmetric Stenotic Arteries, *Mathematical Biosciences*, 298, pp. 1-18 (2018).

22. S. Suman, M.K. Khan, M. Pathak and R.N. Singh , Effects of hydrogen on thermal creep behaviour of Zircaloy fuel cladding, *Journal of Nuclear Materials*, 498 20-32 (2018).

23. Ghosh, D. P., Sharma, D., Mohanty, D., Saha, S. K., and Raj, R., Facile Fabrication of Nanostructured Microchannels for Flow Boiling Heat Transfer Enhancement , *Heat Transfer Engineering*, 10.1080/01457632.201 (2018).

24. N. K. Sundaram, A. Mahato, Y. Guo, K. Viswanathan, S. Chandrasekar, Folding in metal polycrystals: Microstructural origins and mechanics , *ActaMaterialia*, 140 (2017).

25. Adera, S., Antao, D. S., Raj, R., and Wang, E. N., Hotspot Thermal Management via Thin-Film Evaporation - Part I: Experimental Characterization, *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 8 (1), pp. 88-98. (2018).

26. Adera, S., Antao, D. S., Raj, R., and Wang, E. N., Hotspot Thermal Management via Thin-Film Evaporation - Part II: Modeling, *IEEE Transactions on Components, Packaging and Manufacturing Technology*, 8 (1), pp. 99-112. (2018).

27. S. Suman, M.K. Khan, M. Pathak, and R.N. Singh, Investigation of elevated-temperature mechanical properties of delta-hydride precipitate in zircaloy4- fuel cladding tubes using nanoindentation, *Journal of Alloys and Compounds*, 726 107-113 (2017).

28. Pankaj Kumar and AkhilendraSingh, Investigation of Mechanical Properties and Fracture Simulation of Solution-Treated AA 5754, *Journal of Materials Engineering and Performance*, 26(10),4689–4706 (2017).

29. TejPratap, KaraliPatra, Micro Ball-End Milling - An Emerging Manufacturing Technology for Micro-feature patterns, *International Journal of Advanced Manufacturing Technology*, Volume 94, 2821–28 (2018).

30. Murshid Imam, Yufeng Sun, Hidetoshi Fujii, Nishu Ma, SeiichiroTsutsumi, HidekazuMurakawa, Microstructural characteristics and mechanical properties of friction stir welded thick 5083 aluminium alloy, *Metallurgical and Materials Transaction A*, 48(1), 208–229 (2017).

31. Murshid Imam, VikranthRacherla, Kajal Biswas, Hidetoshi Fujii, ViswanathChintapenta, Yufeng Sun, Yoshiaki Morisada, Microstructure-property relation and evolution in friction stir welding of naturally aged 6063 aluminium alloy, *International Journal of Advanced Manufacturing Technology*, 91: 5–8, 1753–17 (2017).

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33. Gundupalli, S., P., Hait, S., and Thakur, A. , Multi-material classification of dry recyclables from municipal solid waste based on thermal imaging, *Waste Management*, 70:13-21 (2017).

34. Y. K. Prajapati, M. Pathak and M.K. Khan, Numerical investigation of subcooled flow boiling in segmented finned microchannels, *International Communications in Heat and Mass Transfer*, 86 215-221 (2017).

35. Pintukumar,S SPanda, Numerical simulation of Al1070 alloy through hybrid SPD process, *IJAMT*, (2018).

36. Shashi Prakash and SubrataKumar, Pulse smearing and profile generation in CO2 laser micromachining on PMMA via raster scanning, *Journal of Manufacturing Processes*, 31, 116-123 (2018).

37. AshuGarg, AnirbanBhattacharya, Similar and Dissimilar Joining of AA-6061T6 and Copper by Single and Multi-spot Friction Stirring, *Journal of Materials Processing Technology*, 250, 330 – 344 (2017).

38. A. Mahato, H. Yeung, Y. Guo, K. Viswanathan, N. K. Sundaram, A. Udupa, J. B. Mann, S. Chandrasekar, Sinuous flow and folding in metals: Implications for delamination wear and surface phenomena in sliding and cutting, *Wear*, 376 (2017).

39. H. Yeung, K. Viswanathan, A. Udupa, A. Mahato, S. Chandrasekar, Sinuous Flow in Cutting of Metals , *Physical Review Applied*, 8 (2017).

40. D. S. Thakur, M.K. Khan and M. Pathak, Solar air heater with hyperbolic ribs: 3D simulation with experimental validation, *Renewable Energy*, 113 357-368 (2017).

41. Jakhar, K., Chattopadhyay, A., Thakur, A., and Raj, R., Spline Based Shape Prediction and Analysis of Uniformly Rotating Sessile and Pendant Droplets, *Langmuir*, 33 (22), pp. 5603-56 (2017).

42. Jakhar, K., Chattopadhyay, A., Thakur, A., and Raj, R., Spline Based Shape Prediction and Analysis of Uniformly Rotating Sessile and Pendant Droplets, *Langmuir*, 33(22):5603-5612 (2017).

43. AshuGarg, AnirbanBhattacharya, Strength and failure analysis of similar and dissimilar friction stir spot welds: Influence of different tools and pin geometries, *Materials and Design*, 127, 272-286 (2017).

44. K. Viswanathan, A. Mahato, H. Yeung, S. Chandrasekar, Surface phenomena revealed by in situ imaging: studies from adhesion, wear and cutting , *Surface Topography: Metrology and Properties*, 5 (2017).

45. Kriti Arya S. Sarangi, The Effect of Damage on Small-Amplitude Radial Oscillations of an Incompressible Isotropic Tube Under Pressure, *European Journal of Mechanics / A Solids*, Volume 68, pp 26-37 (2018).

46. L G Westerberg, C Sarkar, J F Lladós, T. S Lundström and E Höglund, "Lubricating grease flow in a double restriction seal geometry: a Computational Fluid Dynamics approach", Tribology Letter, 2017, Vol. 65 No. 82, pp 1 – 17.

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48. C Sarkar and H Hirani, "Experimental studies on Magnetorheological Brake containing Plane, Holed and Slotted Discs", Industrial Lubrication and Tibology, 2017, Vol. 69 No. 2

49. S S Panda, Pintu Kumar, A Review on Properties and Microstructure of Micro Extruded Product using SPD and As Cast Material, Sadhanda, IAS, Accepted, 2018

Papers Presented in Conferences

1. P. Kumar, Rajneesh and M. Pathak, Experimental Investigation of Falling Film Heat Transfer in External Surfaces, *44th National Conference on Fluid Mechanics and Fluid Power* , Amrita University, Kerela, india (2017)

2. S. Raj, M. Pathak, M.K. Khan, A comparative study of subcooled flow boiling in uniform and segmented finned microchannel, *IHMTC2017*-, BITS Pilani, Hyderabad (2017)

3. R. K. Gouda, M. Pathak and M.K. Khan , A novel impinged surface for pool boiling heat transfer enhancement, *10th International Conference on Boiling and Condensation Heat Transfer (ICBCHT2018), Nagasaki, Japan*, Nagasaki, Japan (2018)

4. Sinha, N. R., and Raj, R., Acoustic Detection of Leidenfrost Dynamics on Plain and Nanostrcutured Surfaces, *24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference*, Hyderabad, India (2017)

5. A. K. Sinha, S. K. Sahu, R. K. Bijarniya and K. Patra, An Effective and Affordable Technique for Human Motion Capturing and Teleoperation of a Humanoid Robot Using an Exoskeleton, *2nd International Conference on Man and Machine Interfacing (MAMI)* , Bhubaneswar, India (2017)

6. Kumar, A., Gunjan, M. R., Jakhar, K., and Raj, R., Buoyancy Induced Detachment of Pendant Droplets from Surfaces with Contact Angle Hysteresis, *44th National Conference on Fluid Mechanics and Fluid Power* , Amrita University, Amritapuri Campus, Ko (2017)

7. Raza, Md. Qaisar, Kumar, N., and Raj, R., Critical Heat Flux Mechanism during Pool Boiling with Surfactants, *24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference*, Hyderabad, India (2017)

8. Raza, Md. Qaisar, Kumar, N., and Raj, R., Critical Heat Flux Mechanisms during Pool Boiling with Nanofluids, *10th International Conference on Boiling and Condensation Heat Transfer*, Nagasaki, Japan (2018)

9. A. Kumar, D. Ahmad and K. Patra, Dependence of Actuation Strain of Dielectric Elastomer on Equi-biaxial, Pure Shear and Uniaxial Modes of Pre-stretching , *International Conference on Advanced in Materials and Manufacturing Applications (IConAMMA 2017)*, Bangalore, India (2017)

10. Hedau, G., Ghosh, D. P., Sharma, D., Vaeghese, A., Raj, R., Saha, S.K., Effect of Nanostructure Micrchannels on Flow Boiling Instability, *24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference*, Hyderabad, India (2017)

11. Deepak Kumar Prajapati,Mayank Tiwari, Effect of Surface Topography On Friction Coefficient And Load Distribution On Rolling/Sliding Contacts operating under Mixed-Lubrication Regime using Load-Sharing Concept, *ECOTRIB*, Ljubljana, Slovenia (2017)
12. A. Pratap, K. Patra and A. A. Dyakonov, Enhancing performances of micro-grinding of BK7- glass through modification of PCD micro-tool, *International Conference on Industrial Engineering*, Chelyabinsk, Russia (2017)
13. Pankaj Kumar and Akhilendra Singh , Experimental and Numerical Investigation of Strain Rate Effect on Low Cycle Fatigue Behavior of AA 5754 alloy, *International Conference on Recent Advances in Materials & Manufacturing Technologies*, BITS Pilani-Dubai Campus (2017)
14. R. K. Gouda, M. Pathak and M.K. Khan, Experimental investigation of pool boiling heat transfer in smooth and enhanced surfaces, *44th National Conference on Fluid Mechanics and Fluid Power*, Amrita University, Kerela, india (2017)
15. A Pratap, P Sahoo, K Patra, A ADyakonov, Experimental study of tool wear and grinding forces during BK7- glass micro-grinding with modified PCD tool, *2nd International Conference on Advanced Materials Research and Manufacturing Technologies (AMRMT 2017)*, Phuket, Thailand (2017)
16. Himanshu Pathak, Akhilendra Singh , Fatigue behaviour of artificially corroded marine alloy 5754, *International Workshops, Conferences and Expo for Military and Marine Applications*, Jaipur (2017)
17. AshuGarg, Anirban Bhattacharya, Finite element analysis of thermal and material flow behavior during friction stir spot welding, *CHT17- ICHMT International Symposium on Advances in Computational Heat Transfer*, Napoli, Italy (2017)
18. Ghosh, D. P., Sharma, D., Saha, S.K., Raj, R., Flow Boiling Enhancement using Scalable Nanostructures Inside Rectangular Microchannels, *24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference*, Hyderabad, India (2017)
19. S. Raj, M. Pathak and M.K. Khan , Flow Instability and CHF Characteristics in Segmented Finned Microchannels, *10th International Conference on Boiling and Condensation Heat Transfer (ICBCHT2018), Nagasaki, Japan*, Nagasaki, Japan (2018)
20. D. Ahmad and K. Patra, Fracture Behavior of Dielectric Elastomer under pure shear loading, *2nd International Conference on Advanced Materials Research and Manufacturing Technologies (AMRMT 2017)*, Phuket, Thailand (2017)
21. Md Anwar Ali Anshari, Murshid Imam, Friction stir welding of steels - A localized thermo-mechanical processing technique for producing ultrafine grained structures, *International Conference on Energy, Materials and Information Technology*, Ranchi (2017)
22. T. Pratap and K. Patra , Micromilling of Ti6-Al4-V titanium alloy using ball-end tool, *2nd International Conference on Advanced Materials Research and Manufacturing Technologies (AMRMT 2017)*, Phuket, Thailand (2017)
23. Gunjan, M. R., and Raj, R., Modelling of Inner Coffee Ring Deposits during Evaporation of Nanoparticle-laden Droplets, *44th National Conference on Fluid Mechanics and Fluid Power*, Amrita University, Amritapuri Campus, Ko (2017)
24. I. Ahmad, M. Pathak and M.K. Khan, Numerical investigation of microfluidic transport based on electrowetting of dielectric, *24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTC2017-)*, BITS Pilani, Hydera (2017)
25. M.S.Shah and ProbirSaha, Online Experimental Characterization of Micro-EDM Dressing on Ti6Al7Nb Biomedical Material, *In National Conference on Advanced Materials, Manufacturing and Metrology (NCAMMM2018-)* , CSIR-CMERI, Durgapur, India (2018)
26. Sharma, D., Ghosh, D. P., Saha, S.K., Raj, R., Optimization of Inlet and Outlet Manifolds for Flow Boiling Heat Transfer Enhancement in Microchannels, *24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference*, Hyderabad, India (2017)
27. Ahmed, S. and Saha, P., Parametric study on friction stir welding of ultra-thin aluminium alloy 6061-T6 sheets, *International Conference on Manufacturing Technology and Simulation*, IIT Madras,India (2017)
28. Shah, M.S. and Saha, P., Performance analysis of vibration-assisted Micro-EDM dressing,*Proceedings of the 10th International Conference on Precision, Meso, Micro and Nano Engineering (COPEN 10),* IIT Madras,India (2017)
29. Kumar, N., Raza, Md. Qaisar, Seth, D., and Raj, R., Pool Boiling with Aqueous Ionic Liquid Solution, *10th International Conference on Boiling and Condensation Heat Transfer* , Nagasaki, Japan (2018)

30. Kumar, N., Raza, Md. Qaisar, Seth, D., and Raj, R., Pool Boiling with Aqueous Ionic Liquid Solutions for Zero Gravity Applications, *24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference*, Hyderabad, India (2017)
31. P. Sahoo, T. Pratap, K. Patra and A. A. Dyakonov, Size effects in Micro End-Milling of Hardened P-20 Steel, *International Conference on Advanced in Materials and Manufacturing Applications (IConAMMA 2017)*, Bangalore, India (2017)
32. Jakhar, K., and Raj, R., Spline-based Interface Modeling and Optimization (SIMO) for Tensiometry and Goniometry Applications, *44th National Conference on Fluid Mechanics and Fluid Power* , Amrita University, Amritapuri Campus, Ko (2017)
33. Ritesh Kumar, Mayank Tiwari and Akhilendra Singh, Static and Modal Analysis of Piezoelectric Active Rotor Bearing Support using Finite Element Method, *National Symposium on Rotadynamics*, IIT Patna (2017)
34. Ahmed, S. and Saha, P., Study of Process Parameters and Joint Properties in Friction Stir Welding of Thin and Ultra-thin Aluminium Alloy 6061-T6 Sheets, *Proceedings of the 10th International Conference on Precision, Meso, Micro and Nano Engineering (COPEN 10)*, IIT Madras,India (2017)
35. R. K. Sahu, S. Yadu, K.V. Singh, S. Raju and K. Patra , The effect of micro molecular parameters on the actuation performance of electroactive polymer, *AMSE 2017 International Mechanical Engineering Congress and Exposition (IMECE 2017)*, Tampa, Florida, USA (2017)
36. Adera, S., Antao, D. S., Raj, R., and Wang, E. N., Thin-film evaporation from micropillar wicks in ambient environment, *The Intersociety Conference on Thermal and Thermomechanical Phenomena in Electronic Systems (ITHERM)*, Orlando, FL USA (2017)
37. K. Patra, A. Jha and T. Szalay, Tool condition monitoring in micro-drilling using vibration signals and artificial neural network, *International Conference on Industrial Engineering, Applications and Manufacturing (ICIEAM)*, Chelyabinsk, Russia (2017)
38. M. Pathak, Transient heat transfer characteristics in microchannel heat sinks for electronic cooling in aerospace applications, *National Frontiers of Engineering Symposium, (NatFOE2017 ,11)*, IIT Bombay (2017)

Sponsored Research Projects

1. A Self Adaptive Cooling System by enhanced pool boiling (DST(SERB), Rs.36.25 Lakhs) (PI : Dr. Manabendra Pathak)
2. Acoustic Detection of Leidenfrost Dynamics on Scalable Micro-/Nanostructured Surfaces (DST Nano Mission, Rs.27.00 Lakhs) (PI : Rishi Raj)
3. cluster (TIFAC, Rs.43.00 Lakhs)
4. Design and Development of an Agricultural Waste Based Gasifier Heating System for GreenCHILLTM (DST, MHRD, New Leaf Dynamic technologies, Rs.95.00 Lakhs) (PI : Rishi Raj)
5. Design of an Integral SFD (ARDB PP panel, Rs.36.71 Lakhs) (PI : Mayank Tiwari)
6. Design of an Integral Squeezed Film Damper (Aeronautics R&D Board, Rs.36.41 Lakhs) (PI : Mayank Tiwari)
7. Development of Low Cost, Efficient Mechanism for collection of Garbage and Dirt- for Municipal Corporations, Panchayats (Swachta Action Plan MHRD, Rs.16.71 Lakhs) (PI : Mayank Tiwari)
8. Development of low cost efficient mechanism for collection of garbage and dirt for municipal corporations, Panchayats (Swachhta Action Plan, Rs.16.71 Lakhs) (PI : Dr. Mayank Tiwari)
9. Development of Novel SMA Bearing Supports and Retrofit for Enhanced Performance and Durability of Rotating Machinery (MHRD,Ministry of Power, General Electric, Rs.100.00 Lakhs) (PI : Mayank Tiwari)
10. Enhancement of Boiling Heat Transfer via the Suppression of Coalescence in Microgravity (ISRO RESPOND, Rs.27.00 Lakhs) (PI : Rishi Raj)
11. Flow Boiling Heat Transfer in Scalable Nanostructured Microchannels for High Heat Flux Applications (DST SERB, Rs.49.00 Lakhs) (PI : Rishi Raj)
12. Influence of Hydrogen Content on Burst Characteristics of Zircaloy-4 Cladding (BRNS (completed), Rs.32.00 Lakhs) (PI : MohdKaleem Khan)

13. Influence of Secondary Heat in Friction Stir Welding: Mechanical Properties and Metallurgical Observations (Science and Engineering Research Board, Rs.16.03 Lakhs) (PI : Anirban Bhattacharya)
14. Modeling and analysis of high speed hybrid micromachining (DST , Rs.23.34 Lakhs) (PI : Dr. KaraliPatra)
15. SMA SE for Rotor Vibration Control (UAY Government of India, Rs.180.00 Lakhs) (PI : Mayank Tiwari)
16. Soft active dielectric elastomers for human motion based energy harvesting (DST,Rs.41.14 Lakhs) (PI : Dr. KaraliPatra)

Consultancy Projects

1. Establishing Correlation between specimen level fatigue test and cornering fatigue test (Tata Steel, Rs.15.00 Lakhs) Consultant Name: Dr S K Paul
2. Frequency Based Vibration Analysis (Prophecy Sensorlytics India Private Limited, Rs.2.00 Lakhs) Consultant Name: SomnathSarangi
3. Preparation of Detailed Project Report entitled "Central Instrumentation Facility and Central Robotics Centre (CIF-CRC) Patna (Department of Science and Technology, Goverrnment of Bihar, Rs.3.25 Lakhs) Consultant Name: Dr. Atul Thakur

Patents (filed / granted)

1. Patent Name:A. K. Sinha and K. Patra, A stretching apparatus and a method of stretching; Patent Owner: KaraliPatra
2. Patent Name:An Improved Systemofa Passive Exoskeleton to Reduce Manual Effort in Carrying Load; Patent Owner: Mayank Tiwari
3. Patent Name:K. Patra, S. K. Sahu, A. R. Jithin and V. J. G. Bharadwaj, Dielctric elastomer annular diaphragm based hydroelectric generator; Patent Owner: KaraliPatra
4. Patent Name:LlewellynGrenoldDsa and KaraliPatra, Vibro-tactile feedback system using FSR; Patent Owner: KaraliPatra
5. Patent Name:S. K. Sahu, K. Patra and S.J.A. Koh, dielctric elastomer transducer based exoskeleton type knee motion harvester ; Patent Owner: KaraliPatra
6. Patent Name: Pintu Kumar, S S Panda A Methodof Joining Polymers Rods Through Deformation Technique Using a Y-Shape Die Apparatus, Patent Owner: S S Panda

Other Activities

Fellow - Professional Bodies

1. Akhilendra Singh - Socity of Automotive Engineers
2. Akhilendra Singh - Indian Society of Theoratical and Applied Mechanics

Member - Professional Bodies

1. AnirbanMahato (2017) Society of Automotive Engineers INDIA
2. Atul Thakur (2008) ASME
3. Atul Thakur (2011) IEEE
4. Manabendra Pathak (2010) American Society of Mechanical Engineers (ASME)
5. Manabendra Pathak (2013) Indian Society for Heat and Mass Transfer (ISHMT)
6. Manabendra Pathak (2012) Society of Automotive Engineers India (SAE India)
7. Mayank Tiwari (2017) ASME
8. Mayank Tiwari (2006) Tribology Soceity of India
9. Mohd. Kaleem Khan (2018) International Solar Energy Society (ISES)
10. Mohd. Kaleem Khan (2011) American Society of Mechanical Engineers (ASME)
11. Mohd. Kaleem Khan (2010) American Society of Heating Refrigerating and Air conditioning Engineers (ASHRAE)
12. Rishi Raj (2015) Indian Society of Heat and Mass Transfer

Member - Editorial Board

1. KaraliPatra (2017) *Member, Editorial board* - Bulletin of South Ural State University, Series: Mechanical engineering
2. Mayank Tiwari (2018) *Invited Editor* - Indian Journal of Tribology
3. S S Panda(2018), Section Editor, Journal of Clinical Orthopaedics and Trauma (JCOT), Elsevier

Awards & Honours

1. Mohd. Kaleem Khan (2016) *Certificate of Outstanding Contribution in Reviewing by Applied Thermal Engineering*
2. Mohd. Kaleem Khan (2017) *Certificate of Outstanding Contribution in Reviewing by Flow Measurement and Instrumentation*
3. Mohd. Kaleem Khan (2017) *Certificate of Outstanding Contribution in Reviewing by International Journal of Heat and Mass Transfer*
4. Mohd. Kaleem Khan (2017) *Certificate of Reviewing by International Journal of Thermal Sciences*
5. Mohd. Kaleem Khan (2018) *Certificate of Reviewing by Solar Energy*
6. Subrata Kumar (2018) *Most Cited Article Award 2015-2016, Springer*
7. Akhilendra Singh (2017) *Nominated as best Teacher from the Mechanical Department in UG category*
8. Rishi Raj (2017) *Served as the Session Chair: 24th National and 2nd International ISHMT-ASTFE Heat and Mass Transfer Conference, BITS-Pilani, Hyderabad Campus, December 27-30, 2017.*
9. Rishi Raj (2018) *Serving as the member of International Science Committee for the 10th International Conference on Boiling and Condensation Heat Transfer (ICBCHT2018) will be held from 12th - 15th March, 2018 in Nagasaki, Japan.*
10. Mohd. Kaleem Khan - *Thank you Note by the Director, IIT Patna, for serving the institute as Asscoiate Dean Administration*
11. Rishi Raj (2017) *Was invited to deliver a Keynote Address during the ASME 2017 International Conference on Nanochannels, Microchannels and Minichannels, Hyatt Regency, Cambridge, MA, August 27-30, 2017.*

Visits Abroad by Faculty Members

1. Rishi Raj - Invited Talk (Maryland, USA) August 2017
2. Rishi Raj - Keynote Address (MIT, USA) August 2017
3. KaraliPatra - Joint research work (National University of Singapore) 20 -23 March, 2018
4. Akhilendra Singh - Present my paper in the conference (BITS Pilani-Dubai) 2 8 -2 9 Nov 2 01 7
5. Manabendra Pathak - To attend conference ICBCHT2018 (Nagasaki, Japan) 11-18 March 2018
6. Mayank Tiwari - Conference ECOTRIB 2017 (Slovenia) 4 days

Invited Lectures by Faculty Members

1. Pool Boiling Critical Heat Flux Enhancement Strategies on Earth and in reduced Gravity of Space *by* Rishi Raj (IIT Gandhinagar)
2. Vapor Crowding-based Limit to Pool Boiling Critical Heat Flux *by* Rishi Raj (MIT, Cambridge, USA)
3. Vapor Crowding based Hydrodynamic Limit to Critical Heat Flux during Pool Boiling with Nanoflui *by* Rishi Raj (University of Maryland College Park)
4. condition monitoring *by* SudhansuSekhar Panda (VSSUT Burla)
5. Influence of hydrogen content on the burst characterisitics of zircaloy-4 cladding tube *by* Mohd. Kaleem Khan (BRNS, Mumbai)
6. Research on Fish-Inspired Underwater Robot at IIT Patna *by* Atul Thakur (IIT Gandhinagar)
7. Micro-machining of CFRP Composite Materials, QIP short term course 'MACM 2017 *by* KaraliPatra (Veer Surendra Sai University of Technology, Sambalpur, Odisha)
8. Mesh-free Formulation for Composite Structures *by* Akhilendra Singh (IIT Mandi)

9. Introduction to Mesh-free Methods *by* Akhilendra Singh (IIT Mandi)
10. Friction stir welding – A new trend for in-situ microstructural modification *by* Dr. Murshid Imam (Indian Institute of Technology Hyderabad)
11. Welding Engineering *by* Dr. Murshid Imam (Heavy Engineering Corporation, Ranchi)
12. Transient heat transfer characteristics in microchannel heat sinks for electronic cooling in aerosp *by* Manabendra Pathak (National Frontiers of Engineering Symposium, (NatFOE30 ,(2017 ,11 June, 2017, IIT Bombay)
13. Basic concepts on Fluid Mechanics and Heat transfer *by* Manabendra Pathak (National Institute of Technology Uttarakhand, 21 September 2017)
14. Different solution approaches for solving Fluid Mechanics and Heat transfer problems *by* Manabendra Pathak (National Institute of Technology Uttarakhand, 22 September 2017)
15. CFD analysis of nano-particle enhanced thermal energy storage system *by* Manabendra Pathak (Keynote speaker, International conference on energy, materials and information technology, Amity University, Ranchi, 24-23 December 2017)

Short-Term Courses, Training Programmes and Workshops organised

1. GIAN course: Modeling approaches for coupled multiphysics engineering problems (18-22 December 2017)

Physics

Faculty Members

Dr.Manoranjan Kar Associate Professor	Condensed Matter Physics, Nanomaterials, Materials Science
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.Utpal Roy Associate Professor	Bose-Einstein condensate, Nonlinear Optics, Quantum Optics
Dr. Ajay D. Thakur Assistant Professor	Earth abundant elements based advanced electronic materials for energy and sensing applications. Here the emphasis is on nanomaterials 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.Awalendra K. Thakur Assistant 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 Polymer, Metal-Organic Semiconductor interface, Organic electronic Devices, Molecular Electronics
Dr.Jobin Jose Assistant Professor	Computational atomic and molecular physics: Photoionization / Scattering from atoms and molecules; Electronic structure properties of confined atomic systems; Strong field ionization
Dr.Manas Kumar Sarangi Assistant Professor	Biophysics and Ultrafast spectroscopy, Structure function relation in biopolymers
Dr.Raghavan K Easwaran Assistant Professor	Quantum Optics (Theory and Experiment)
Dr.SoumyaJyoti Ray Assistant Professor	Condensed Matter and Nonoscale Physics, Nanoelectronics, Spintronics, Superconductivity, Magnetism, 2D Materials
Dr.Venkata R. Dantham Assistant Professor	Bio-Photonics, Nanophotonics, Ultrasensitive optical biosensors, Photonic atoms
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

Academic Programmes

- M.Tech in Nano Science and Nano Technology
- M.Sc in Physics
- Ph.D Program

Research & Development Activities

Papers Published in Journals

1. Sunil Kumar, Sweety Supriya and Manoranjan Kar, Correlation between temperature dependent dielectric and DC resistivity of Cr substituted barium hexaferrite, *Mater. Res. Express*, 4, 126302 (2017).

2. Ayash Kanto Mukherjee and Nikita Kumari, Current Voltage Perspective of an Organic Electronic Device, *Physics Letters A*, 382, 1413-1418 (2018).

3. Sugandh Priya, RanjitLaha, Venkata R. Dantham, Development of multiwavelength Kretschmann setup for exciting surface plasmonpolaritons, *AIP Proceedings*, Accepted (2017).

4. S. Kumar, S. Supriya, L. K. Pradhan, R. Kumar and M. Kar, Effect of lattice strain on structural and magnetic properties of Ca substituted barium hexaferrite , *Journal of Magnetism and Magnetic Materials*, 458, 30-38 (2018).

5. S. Kumar, S. Supriya, L. K. Pradhan and M. Kar, Effect of Microstructure on Electrical Properties of Li and Cr substituted Nickel Oxide, *Journal of Materials Science Materials in Electronics*, 28, 16679–16688 (2017).

6. P. Kour, S. K. Pradhan, Pawan Kumar, S. K. Sinha, M. Kar, Effect of Nd Doping on Dielectric and Impedance Properties of PZT Nanoceramics , *Journal of Electronic Materials*, NA (2018).

7. P. Kour, S. K. Pradhan, Pawan Kumar, S. K. Sinha, M. Kar, Effect of Sr doping on electrical properties of lead zirconatetitanatenanoceramics, *Ferroelectrics*, 516, 104-112 (2017).

8. S. Supriya, S. Kumar and M. Kar, Electrical Properties and Dipole Relaxation Behavior of Zinc Substituted Cobalt Ferrite, *Journal of Electronic Materials*, 46, 6884–6894 (2017).

9. Sunil Kumar, Sweety Supriya and Manoranjan Kar, Enhancement of dielectric constant in polymer-ceramic nanocomposite for flexible electronics and energy storage applications, *Composites Science and Technology*, 157, 48-56 (2018).

10. Akash Arya, Amit K. Tagore, Venkata R. Dantham, Enhancement of fluorescence of a few molecules using nanoplasmonic and photonic structures , *AIP Proceedings*, Accepted (2017).

11. A. Arya, R. Laha, G. M. Das, and V. R. Dantham, Enhancement of Raman scattering signal using photonic nanojet of portable and reusable single microstructures, *Journal of Raman spectroscopy*, DOI: 10.1002/jrs.535 (2018).

12. Gour M. Das and Venkata R. Dantham, Enhancement of SERS signal of single/few molecules using photonic nanojet of a dielectric microsphere, *AIP Proceedings*, Accepted (2017).

13. Debarati Dey, Manas Kumar Sarangi, Angana Ray, Dhananjay Bhattacharyya, Dilip Kumar Maity, Excited state hydrogen bonding fluorescent probe: Role of structure and environment, *Journal of Luminescence*, 173 (2016).

14. Ranjit Laha, Gour Mohan Das, Pranay Ranjan, Venkata Ramanaiah Dantham, Experimental optimization during SERS application, *AIP Proceedings*, Accepted (2017).

15. Pranay Ranjan, Atul Kumar, Ajay D. Thakur , Free Standing Graphene Oxide Films for Gas Sensing Applications , *Materials Today: Proceedings*, 5 (1), 732-736 (2018).

16. I. Mehra, A. Fatima and N. K. Nishchal, Gyrator wavelet transform, *IET Image Processing*, 12-432 (2018).

17. Lawrence Kumar, Pawan Kumar, Mukesh Kumar Zope and M. Kar , High-Temperature Magnetic Behaviour of 10 % Aluminium-Substituted Cobalt Ferrite, *Journal of superconductivity and novel magnetism*, 30,1629–1634 (2017).

18. S. Supriya, S. Kumar and M. Kar, Impedance and DC resistivity studies on chromium substituted cobalt ferrite, *Journal of Materials Science Materials in Electronics*, 28, 10652–10673 (2017).

19. Ashutosh Kumar, D. Sivaprahasam, Ajay D. Thakur, Improvement of Thermoelectric properties of Lanthanum cobaltate by Sr and Mn co-substitution, *Journal Alloys and Compounds*, 735, 1787-1791 (2018).

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28. S. K. Rajput and N. K. Nishchal, Optical double image security using random phase fractional Fourier domain encoding and phase retrieval algorithm , *Optics Communications*, 388-38 (2017).
29. Yatish, A. Fatima and N. K. Nishchal, Optical image encryption using triplet of functions, *Optical Engineering*, 57-033103 (2018).
30. A. Fatima and N. K. Nishchal, Optical image security using Stokes polarimetry of spatially variant polarized beam, *Optics Communications*, 417-30 (2018).
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38. SumitBhushan and Raghavan K. Easwaran , Theoretical design for generation of slow light in a two-dimensional magneto optical trap using electromagnetically induced transparency, *Applied Optics*, 56, 3817, May 1 (2017).
39. Ashutosh Kumar, Karuna Kumari, B. Jayachandran, D. Sivaprahasam, Ajay D. Thakur,Thermoelectric properties of (1-x) LaCoO3.xLa0.7Sr0.3MnO3 composite, *Journal Alloys and Compounds*, 749, 1092-1097 (2018).
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45. Norimichi Chinone, Alpana Nayak, Ryoji Kosugi,Yasunori Tanaka, Shinsuke Harada, Yuji Kiuchi, Hajime Okumura and YasuoCho,Universal ParameterEvaluating SiO2/SiC Interface Quality Based on Scanning NonlinearDielectric Microscopy, *Materials Science Forum*,**897**, 159-162 (2017).

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47. Rakesh K. Pandey, Himani Pandey and Alpana Nayak, Electrochemical Charge Transfer Through the Supramolecular Discogen-DNA Hybrid Multi-layered Assembly, *Chemistry Select*, (minor revision submitted 2018).
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49. A. Arya, G. M. Das, and V. R. Dantham, "Enhancement of Raman scattering/fluorescence signals of single molecules using the combinationof nanoplasmonic and photonic devices", (Under communication with Journal of Applied Physics).
50. G. M. Das, A. Arya, V. R. Dantham, and R. Laha, "Role of a dielectric substrate on local field and localized surface plasmon wavelength of single nanoplasmonic structures", (Under communication with Journal of Nanoparticle Research).

Papers Presented in Conferences

1. Subhasish Saha, Afsal Thuppilakkadan , Jobin Jose and Hari R. Varma , Effect of model potentials (smooth Vs hard) on the Wigner time delay of H@C60 photoionization,*Research Scholar Day -2018*, IIT Patna (2018)
2. A. Kumar and N. K. Nishchal , A noise induced cryptographic hash function based on double random gyrator domain phase encoding, *Int'l. Confer. on Advances in Optics & Photonics*, Hisar (2017)
3. Sumit Bhushan and Raghavan K Easwaran, A Two Dimensional Magneto Optical Trap with High and Tunable Optical Depth for Slow Light Applications, *7th Topical Conference of the Indian Society of Atomic and Molecular Physics (ISAMP)*, IISER Tirupathi (2018)
4. Sumit Bhushan and Raghavan K Easwaran, A Two Dimensional Magneto Optical Trap with High and Tunable Optical Depth for Slow Light Applications, *7th Research Scholars' Day organized by the Indian Institute of Technology Patna*, IIT Patna (2018)
5. A. Kumar and N. K. Nishchal, An image encryption scheme using quick response code, *3rd Int'l. Confer. on Microwave and Photonics*, IIT (ISM) Dhanbad (2018)
6. N Kundu & Utpal Roy, Analytical Studies of Two Components Bose-Einstein Condensate in a Trap, *One day workshop on National Science Day Celebration & 125th Birth Anniversary of S. N. Bose*, IIT Patna (2018)
7. Chaitanya Bathina, Ajay D. Thakur, Rishi Raj, Biomass Gasifier Powered Adsorption Chiller for Atmospheric Water Harvesting: Prospects in Developing World, *6th International Conference on Advances in Energy Research 2017 (ICAER2017-)*, Mumbai (2017)
8. Barun Halder, J Bera, S. Ghosh and Utpal Roy, Bose-Einstein Condensate in Bichromatic Optical Lattice: Revealing the Phase-Space, *International Workshop on Bose-Einstein Condensation and Related Phenomena (IWBECRP)*, S. N. Bose National Centre, Kolkata (2018)
9. J. Bera, S Ghosh, Utpal Roy, Bose-Einstein Condensate Trapped in a Vibrating Optical Lattice, *International Workshop on Bose-Einstein Condensation and Related Phenomena (IWBECRP)*, S. N. Bose National Centre, Kolkata (2018)
10. J. Bera, Abdul Q Batin and Utpal Roy, Breathing Dynamics of Ultracold Atoms in a Vibrated Optical Lattice, *Topical Conference07-, Indian Society of Atomic & Molecular Physics*, IISER Tirupati (2018)
11. Rajnish Kumar, A. Kr. Aman, Rakesh Kr. Singh and M. Kar , Competition between strain and superexchange mediated magnetism in modified cobalt ferrite , *DAE Solid State Physics Symposium*, KIIT Bhubaneswar (2016)
12. Atul Kumar, Ajay D. Thakur, Design Issues for Optimum pn Solar Cell Configuration,*International Conference on Condensed Matter and Applied Physics (ICC-2017)*, Bikaner (2017)
13. T. Pitkaaho, V. Pitkakangas, M. Niemela, S. K. Rajput, N. K. Nishchal, and T. J. Naughton, Digital holographic microscopy in remote potable water monitoring, *The Digital Holography and 3D Imaging*, Cheju Halla University, Jeju Island, SOU (2017)
14. T. Pitkaaho, V. Pitkakangas, M. Niemela, S. K. Rajput, N. K. Nishchal, and T. J. Naughton, Digital holographic sensor network and image analyses for distributed potable water monitoring, *Irish Machine Vision and Image Processing Conference*, Maynooth Univ., Ireland (2017)
15. Afsal Thuppilakkadan, SubhasishSaha, Jobin Jose and Hari R. Varma, Effect of model potentials (smooth Vs hard) on the Wigner time delay of H@C60 photoionization, *7th Topical conference of the Indian Society of Atomic and Molecular Physics (ISAMp-TC7)*, IIT Tirupati (2018)

16. S. Kumar, S. Supriya and M. Kar, Effect of Sintering Temperature on Electrical Properties of BHF Ceramics Prepared by Modified Sol-Gel Method , *Science and Technology of Advanced Materials and Devices*, NIT Patna (2016)
17. Km. Akanksha Dubey, Shweta Agrawal, T. Rajgopala Rap, Jobin Jose, Elastic Scattering of H Atom by C60 and Kr@C60 : Calculation of Total Cross- Section and Time-Delay, *7th Topical conference of the Indian Society of Atomic and Molecular Physics(ISAMp-TC7)*, IIT Tirupati (2018)
18. S. Supriya, S. Kumar and M. Kar, Enhanced dielectric of PVDF-CoFe1.5Cr0.5O4 for capacitor application, *DAE Solid State Physics Symposium*, KIIT Bhubaneswar (2016)
19. A. Arya, R. Laha, V. R. Dantham, Enhancement of Raman Scattering using Photonic Nanojet and Whispering Gallery Mode of a Dielectric Microstructure, *20th International Conference on Applied Nanophotonics*, Mumbai, India (2018)
20. L. K. Pradhan, R. Pandey, and M. Kar, Existence of multi crystallographic phase in BNT-BTO solid solution near morphotropic phase boundary (MPB), *DAE Solid State Physics Symposium*, KIIT Bhubaneswar (2016)
21. Akash Arya and VenkataRamanaiahDantham , Fabrication of high quality lollipop shaped microstructures for enhancing Raman signal, *National Conference on Advances in Spectroscopic Techniques and Materials (ASTM2018-),* IIT (ISM), Dhanbad (2018)
22. Ajay D. Thakur, Focused Ion Beam Milling as a Promising Rapid Prototyping Tool for Superconducting Circuits, *East Asian Symposium on Superconducting Electronics*, IIT Delhi (2017)
23. Gour M. Das and Venkata R. Dantham, Giant enhancement of SERS signal of single molecules by focusing of light beyond classical diffraction limit, *Research Scholars Day*, IIT Patna (2018)
24. A. Fatima, I. Mehra, and N. K. Nishchal, Gyrator transform and its applications in optical information processing, *Workshop on Optics and Photonics: Theory & Computational Techniques*, IIT Roorkee (2018)
25. Akash Arya and V. R. Dantham, High quality lollipop shaped microstructures for enhancing Raman signal, *Research Scholars Day*, IIT Patna (2018)
26. Akash Arya and V. R. Dantham , High yield synthesis of surfactant-free gold nanostars for biosensing, photothermal therapy and drug delivery applications, *International Conference and Exhibition on Nanomedicine and Drug Delivery*, Osaka, Japan (2017)
27. J. Bera and Utpal Roy, Interference of Bose-Einstein Condensate in a Toroidal Trap, *One day workshop on National Science Day Celebration & 125th Birth Anniversary of S. N. Bose*, IIT Patna (2018)
28. Atul Kumar, Ajay D. Thakur , Investigating absence of optimal photovoltaics response in CZTS solar cell, *International Conference on Condensed Matter and Applied Physics (ICC2017-)*, Bikaner (2017)
29. Barun Halder, Utpal Roy & S Ghosh , Isotope Separation of Bromine Molecules, *Topical Conference07-, Indian Society of Atomic & Molecular Physics*, IISER Tirupati (2018)
30. S Ghosh, BarunHalder, and Utpal Roy, Molecular isotope separation by utilizing Sub-Planck scale structures, *International conference on "Quantum & Nonlinear Optics Conference (QNO2018-)*, Kuala Lumpur, Malaysia (2018)
31. SugandhPriya, RanjitLaha, Venkata R. Dantham, Multi-wavelength Kretschmann setup for improving the figure of merit of the nanoplasmonic biosensors, *Research Scholars Day*, IIT Patna (2018)
32. Yatish, A. Fatima and N. K. Nishchal, Multiple image encryption using unity modulus decomposition, *Int'l. Topical Meeting on Applied and Adaptive Optics*, IIST Trivandrum (2017)
33. P. Ranjan, Ajay D. Thakur, Non-toxic Earth Abundant Element Based Functional Nanomaterials -- Scope (Prospects) and Challenges, *International Conference on Nanotechnology: Ideas, Innovations and Initiatives (ICN:3I) 2017*, IIT Roorkee (2017)
34. A. K. Gupta and N. K. Nishchal, Phase characterization of a liquid crystal spatial light modulator, *3rd Int'l. Confer. on Microwave and Photonics*, IIT (ISM) Dhanbad (2018)
35. A. Fatima and N. K. Nishchal, Phase modulation based optical asymmetric image encryption, *OSA Frontiers in Optics + Laser Science APS/DLS*, Washington, USA (2017)
36. Barun Halder, Utpal Roy & S Ghosh, Phase-space structures and Isotope Separation of Bromine Molecules, *One day workshop on National Science Day Celebration & 125th Birth Anniversary of S. N. Bose*, IIT Patna (2018)

37. Jobin Jose, Quantitative Rescattering Theory: A novel way to study many-electron corrrelation effects in HHG from atoms, *Workshop on recent developments in ultrafast phenomena in atomic physics*, IIT Tirupati (2018)

38. A. Kumar and N. K. Nishchal, Quick response code-based asymmetric image encryption scheme, *Int'l. Topical Meeting on Applied and Adaptive Optics* , IIST Trivandrum (2017)

39. R. Pandey, C Panda, Pawan Kumar, L. K Pradhan and ManoranjanKar, Role of Grain and Grain Boundary on the Electrical and Thermal Conductivity of Bi0.9Y0.1Fe0.9Mn0.1O3 Ceramics, *61th DAE*, KIIT Bhubaneswar (2016)

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41. SumitBhushan, Vikas S. Chauhan, and Raghavan K. Easwaran, Slow Light with Rydberg Atoms in a Two Dimensional Magneto Optical Trap, *Contemporary Trends in Optics 2017*, Indian Institute of Science Education (2017)

42. J. Bera and Utpal Roy, Spatial Interference Patterns in the Dynamics of a 2D Bose-Einstein Condensate, *2nd International Conference on Condensed Matter & Applied Physics*, Bikaner (2017)

43. Ashutosh Kumar, Ajay D. Thakur, SrBi4Ti4O15 Aurivillius Phase Thin Films by pulsed laser deposition using Nd:YAG Laser, *International Conference on Condensed Matter and Applied Physics (ICC2017-)*, Bikaner (2017)

44. Ashutosh Kumar, C. V. Tomy, Ajay. D. Thakur, Structural, Magnetic and Thermoelectric Properties of -MnO2 synthesized by Hydrothermal Process, *29th Annual General Meeting of Magnetic Research Society of India and National Symposium on "Advances in Functional and Exotic Materials"*, Thiruchirapalli (2018)

45. KarunaKumari, Ashutosh Kumar, JayakumarBalakrishanan, Ajay D Thakur and SoumyaJyoti Ray, Structural, Magnetic and Transport Properties of La0.7Sr0.3MnO-3Graphene Nanocomposite,*MRSI National symposium on Advances in Functional and Exotic Materials*, Trichy (2018)

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47. P.Kour,S.K.Pradhan, Pawan Kumar, S.K.Sinha, ManoranjanKar, Study of Ferroelectric and Piezoelectric Properties on Ca Doped PZT Ceramics , *Science and Technology of Advanced Materials and Devices*, NIT Patna (2016)

48. Mithilesh Kumar Parit, Gour Mohan Das, and VenkataRamanaiahDantham, Study of local electric field of different single nanoplasmonic structures for optimizing the surface enhanced Raman scattering and fluorescence signals of single molecules, *Contemporary Trends in Optics*, IISER Kolkata Campus (2017)

49. SumitBhushan and Raghavan K Easwaran, Theoretical design for generation of slow light in a two-dimensional magneto optical trap using electromagnetically induced transparency,*International Workshop on Bose Einstein Condensate and Related Phenomena 2018*, S N Bose National Centre for Basic Scien (2018)

50. Vikas Singh Chauhan, SumitBhushan, and Raghavan K Easwaran, Theoretical Study of Efficient Quantum Memory by Using Ultracold Rydberg Atoms in a Two Dimensional Magneto Optical Trap,*7th Research Scholars' Day organized by the Indian Institute of Technology Patna.*, IIT Patna (2018)

51. Vikas Singh Chauhan,Sumit Bhushan and Raghavan K Easwaran, Theoretical Study of EIT in 2D MOT by using Ultracold Rydberg Atoms, *Workshop on National Science Day*, IIT Patna (2018)

52. Vikas Singh Chauhan, SumitBhushan, and Raghavan K Easwaran, Theoretical Study of EIT in 2D MOT by using Rydberg Atoms for Storage of Terahertz Frequency Signals,*International Workshop on Bose Einstein Condensate and Related Phenomena 2018*, S N Bose National Centre for Basic Scien (2018)

53. Subhasish Saha, Afsal Thuppilakkadan, Jobin Jose, Hari R.Varma, Time delay in photoionization from confined atoms: A contrasting study of hard Vs smooth jellum model potential, *DAMOP2018-*, Florida (2018)

54. N Kundu& Utpal Roy, Two Component Bose-Einstein Condensate in a Bichromatic Optical Lattice, *International Workshop on Bose-Einstein Condensation and Related Phenomena (IWBECRP)*, S. N. Bose National Centre, Kolkata (2018)

55. N Kundu&Utpal Roy , Two Components Bose-Einstein Condensate in a Frustrated Optical Lattice, *Topical Conference07-, Indian Society of Atomic & Molecular Physics*, IISER Tirupati (2018)

56. Pragya Tiwari and VenkataRamanaiah Dantham, Ultra-sensitive optical biosensors for the real-time detection of single viruses/molecules and estimation of their size, molecular weight and number of amino acids, *Research Scholars Day*, IIT Patna (2018)

57. Prakhar Verma, Snehasis Daschakraborty, Alpana Nayak, Santanu Kumar Pal, Sandeep Kumar, K. A. Suresh, Effect of Ionic Polar Group on LB film Deposition of Discotic Liquid Crystal Molecules, poster presentation by PrakharVerma at NCLC 2017, IISER Mohali.
58. Samapika Mallik, Alpana Nayak, Snehasis Daschakraborty, Santanu Kumar Pal, Sandeep Kumar, K. A. Suresh, Complex formation of DNA with discotic liquid-crystalline dimer at air-water and air-solid interfaces, poster presentation by Samapika Mallik at NCLC 2017, IISER Mohali.

Sponsored Research Projects

1. Study of Optical Image Fusion Techniques for Securing Multispectral Data (CSIR New Delhi, Rs.21.24 Lakhs) (PI : Dr Naveen Kumar Nishchal)
2. Design and Development of an Agricultural Waste Based Gasifier Heating System for GreenCHILLTM (DST under Ucchatar Aavishkar Yojana, Rs.95.07 Lakhs) (PI : Dr. Rishi Raj Co-PI: Dr. Ajay D. Thakur).
3. Electromagnetically Induced Transparency and Slow light using (SERB, Depart of Science and Technology (DST), Rs.21.20 Lakhs) (PI : Raghavan K. Easwaran)
4. 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. VenkataRamanaiahDantham)
5. Fluctuations in DNA for molecular recognition (SERB, Rs.43.00 Lakhs) (PI : Manas Kumar Sarangi)
6. Photoionization and Electron Scattering Dynamics of Free and Confined Atomic Systems(DST SERB, Rs.25.00 Lakhs) (PI : Jobin Jose)
7. Real time detection and sizing of single protein molecule using a nanoplasmonic-whispering gallery mode hybrid microresonator (SERB (DST), Rs.54.40 Lakhs) (PI : Dr. VenkataRamanaiahDantham)
8. Superconducting Spintronics using hybrid Superconducting- Ferromagnetic Metamaterial(Department of Science and Technology - INSPIRE Scheme, Rs.35.00 Lakhs) (PI : Dr. S. J. Ray)
9. "Novel Spin-triplet Superconductivity using ferromagnetic-superconducting heterostructures"(UGC-DAE, Rs. 1.35 Lakhs) (PI : Dr. S. J. Ray)
10. Generation, Imaging and Control of Novel Coherent Electronic States in Artificial Ferromagnetic-Superconducting Hybrid Structures and Devices (DST-SERB, Rs.50.00 Lakhs) (PI : Dr. S. J. Ray)
11. Investigations on Thin Films of Discotic Liquid Crystal Molecules for Applications in Organic Electronics (SERB, Rs. 50 Lakhs) (PI: Alpana Nayak)

Patents (filed / granted)

1. Patent Name:System and Method for Heat Recovery in Gasification Process; Patent Owner: Ajay Thakur

Other Activities

Fellow - Professional Bodies

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

Member - Professional Bodies

1. Ajay Thakur (2012) Indian Physics Association
2. Ajay Thakur (2016) Magnetics Society of India
3. Jobin Jose (2009) Indian Society of Atomic Physics
4. Naveen Kumar Nishchal (2010) Indian Science Congress Association
5. Naveen Kumar Nishchal (2003) Laser and Spectroscopy Society of India
6. Naveen Kumar Nishchal (2015) OSA-The Optical Socity
7. Naveen Kumar Nishchal (2015) SPIE
8. Utpal Roy (Life Member) Indian Society of Atomic & Molecular Physics

Awards & Honours

1. Utpal Roy and Jayanta Bera (2018) *2nd Best Oral Presentation Award, Workshop on National Science Day & 125th Birth Anniversary Celebration of Prof. S N Bose, IIT Patna*
2. Utpal Roy and Jayanta Bera (2018) *Best Oral Presentation Award, Modulated Frequency Generation in Bose-Einstein Condensate in a Perturbed Optical Lattice Trap, 125th Birth Anniversary Celebration of Prof. S N Bose, Centenary Celebrations of Patna University, Patna Science College*
3. Venkata Ramaniah Dantham (2018) *Gour Mohan Das has obtained the 2nd MERIT AWARD for the poster presentation on the occasion of National Science Day, at IIT Patna.*
4. Naveen Kumar Nishchal (2017) *Outstanding Reviewer 2016, Journal of Optics (IOP)*
5. VenkataRamaniahDantham (2018) *Mr. Akash Arya won the MERIT PRIZE for oral presentation at the conference on Advances in Spectroscopic Techniques and Materials (ASTM-2018) held at IIT (ISM), Dhanbad.*
6. VenkataRamaniahDantham (2017) *Mr. Gour Mohan Das (supervised by me) won the BEST POSTER AWARD in the International Conference on Condensed Matter and Applied Physics (ICC - 2017) at Bikaner, India.*
7. Utpal Roy, Barun Halder & S Ghosh (2018) *3rd Best Poster Award, Phase-space structures and Isotope Separation of Bromine Molecules, One day workshop on the National Science Day Celebration & 125th Birth Anniversary of S. N. Bose, IIT Patna*
8. Utpal Roy and Jayanta Bera (2017) *Best Poster Award, Chopping of Ultracold Atoms by Potential Knives, Research Scholar Day-17, IIT Patna*
9. Utpal Roy and Nilanjan Kundu (2018) *Best Poster Award, Two Components Bose-Einstein Condensate in a Frustrated Optical Lattice, Research Scholar Day, IIT Patna*
10. VenkataRamaniahDantham (2017) *Selected as a BEST TEACHER for post-graduate students at IIT Patna*
11. Raghavan K E (2017) *Selected as Best Teacher for teaching Physics UG course (B.Tech) on Optics and Lasers based on teaching feedback from students. This was on teachers day celebration IIT Patna*
12. Alpana Nayak (Bharat Vikas Award 2017 for her contribution in the field of Nanoscience and Technology)
13. Lagen Kumar Pradhan, Rabichandra Pandey, Sunil Kumar, Sweety Supriya and Manoranjan Kar (*Best poster award in 62nd DAE Solid State Physics Symposium (BARC, Mumbai): "Role of lattice distortion on diffuse phase transition temperatures in Bi0.5Na0.5TiO3-BaTiO3 [BNBTO] solid solutions")*

Visits Abroad by Faculty Members

1. Manoranjan Kar - Conference (Singapore) 2nd – 4th October
2. Naveen Kumar Nishchal - Attending a conference (Cheju Halla University, Jeju Island, SOUTH KOREA,) May 29-June 01, 2017
3. Naveen Kumar Nishchal - Attending a conference (Cholalongkorn University, Bangkok, THAILAND ,) Aug. 16-18, 2017
4. Utpal Roy - To Deliver an Invited Talk (International conference on Quantum & Nonlinear Optics Conference (QNO-2018), Kuala Lumpur, Malaysia) Feb 2-5, 2018

Invited Lectures by Faculty Members

1. Mesoscopic superposition states in Bose-Einstein condensate by tunneling and reflection *by* Utpal Roy (International conference on "Quantum & Nonlinear Optics Conference(QNO2018-), Kuala Lumpur, Malaysia)
2. Long Time Evaluation of Bose-Einstein Condensate in a Toroidal Trap *by* Utpal Roy (Topical Conference07-, Indian Society of Atomic & Molecular Physics, IISER Tirupati)
3. Introduction to Rietveld refinement Technique and electron optics *by* ManoranjanKar (NIT Durgapur)
4. Polymer-Oxide Nanocomposite For Possible Energy Harvesting And Storage *by* ManoranjanKar (Rourkela)
5. Vibrational spectroscopy to understand the crystal symmetry of substituted Spinel CoFe2O4 *by* ManoranjanKar (Mahatma Gandhi University, Kottayam)
6. Band gap enginnering in Zn substituted CFO for optoelectronic application *by* ManoranjanKar (Singapore)

7. Analytical and Numerical Approaches to the dynamics of Bose-Einstein Condensate in a trap *by* Utpal Roy (International Workshop on Bose-Einstein Condensation and Related Phenomena (IWBECRP), S. N. Bose National Centre for Basic Sciences, Kolkata)
8. Optical security *by* Naveen Kumar Nishchal (Mahindra EcoleCentrale, Hyderabad)
9. Information security through polarization encoding *by* Naveen Kumar Nishchal (Guru Jambheswar University Hisar)
10. Optical encryption schemes *by* Naveen Kumar Nishchal (Cholalongkorn University, Bangkok)
11. Asymmetric optical encryption schemes *by* Naveen Kumar Nishchal (IIST Trivandrum)
12. Securing 3D information using digital holography *by* Naveen Kumar Nishchal (Cheju Halla University, Jeju Island, SOUTH KOREA)
13. Optics for information security *by* Naveen Kumar Nishchal (Magadh University, Bodh Gaya)
14. Elastic Scattering of H Atom by C60 and Kr@C60 : Calculation of Total Cross- Section and Time-Delay *by* Jobin Jose (IIT Tirupati)
15. Quantitative Rescattering Theory: A novel way to study many-electron corrrelationefects in HHG from *by* Jobin Jose (IIT Tirupati)
16. MOS capacitor: Depletion, Accumulation and Inversion *by* Ayash Kanto Mukherjee (IIT Patna)
17. Curved Space *by* Ayash Kanto Mukherjee (IIT Patna)
18. Unveiling protein-DNA interaction by ultrafast temperature jump spectroscopy *by* Manas Kumar Sarangi (Trivandrum)
19. Charge transfer in DNA *by* Manas Kumar Sarangi (APCAsymposium, IIT patna)
20. The art of being artificial *by* Manas Kumar Sarangi (RESPECT2017- IIT Patna)
21. Focused Ion Beam Milling as a Promising Rapid Prototyping Tool for Superconducting Circuits *by* Ajay Thakur (IIT Delhi)
22. Non-toxic Earth Abundant Element Based Functional Nanomaterials -- Scope (Prospects) and Challenges *by* Ajay Thakur (IIT Roorkee)
23. Women in Science *by* Ajay Thakur (IIT Patna)
24. Nobel Prize in Physics 2017--Laser interferometric gravitational wave observatory (LIGO) experiment *by* Ajay Thakur (IIT Patna)
25. Application of Rayleigh scattering towards single virus/protein molecules detection in real-time *by* VenkataRamaniahDantham (RESPECT-KVs workshop held at IIT Patna)
26. Role of tunable Lasers in the detection of diseases at very early stage*by*VenkataRamaniahDantham (Advances in Physics: From Concepts to Applications, held at IIT Patna)
27. Quantum Mechanics & Applications to Physical Systems *by* Utpal Roy (Workshop on 'Advances in Physics: From Concepts to Applications', IIT Patna)
28. Dynamics of Bose-Einstein Condensate by Manipulating External Trap *by* Utpal Roy (21st National Conference on Atomic and Molecular Physics (NCAMP-XXI), Physical Research Laboratory, Ahmedabad)
29. Chaired a Session (Quantum Optics) *by* Utpal Roy (Topical Conference07-, Indian Society of Atomic & Molecular Physics, IISER Tirupati)
30. Mimicking biological synapse by discotic LC-based atomic switch device by Alpana Nayak at the conference NCLC 2017 (IISER Mohali).
31. Atomic switch for next generation electronics by Alpana Nayak(RESPECT-KVs 2017, IIT-Patna)
32. Introduction to Numerical Techniques *by* Jobin Jose (Workshop on 'Advances in Physics: From Concepts to Applications', IIT Patna)

Short-Term Courses, Training Programmes and Workshops organised

1. One-day workshop on National Science Day Celebration and 125th Birth Anniversary of Prof. Satyendra Nath Bose, Department of Physics (March 6th, 2018).
2. Science Academies' Refresher Course in Experimental Physics (November 07-22, 2017), Course Coordinator: Utpal Roy, Department of Physics
3. 'Workshop on Advances in Physics: From Concepts to Applications' organized by Physics Society, Department of Physics, (July 20th - 21st, 2017).
4. Workshop on Revitalizing School Physics Education through Concept orientation Teaching, Jobin Jose & Utpal Roy, Department of Physics (7-9th April, 2017)
5. Unveiling of annual magazine of Physics Society -'17 AMPS – (7th April 2017)

Centralized Services, Programmes and Units

Central Library

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 19,061 books till date. During the reporting year (2017 – 2018), 1968 new books have been added to the Central Library. All books are RFID tagged and duly

processed before use or circulation. Within this period Central Library has also subscribed various new e-resources in the form of full-text e-journals and e-books to disseminate the requirement of the users. Central Library has added archive collection of various e-journals collection i.e. backfiles of IOP Science Journals, Nature & Allied Journals and started the subscription of BIS Database (Online), to satisfy the information need of the users of IIT Patna. 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 Proquest, Web of Science, Turnitin etc.

The Central Library has subscribed the "Remote Xs" to provide the access of subscribed e-resources to its bonafide users outside the IIT Patna campus in this reporting year.

Computer Center

People

Name	Role
Dr. Joydeep Chandra	Head - Computer Center
Dr. Abyayananda Maiti	Assoc. Head - Computer Center
Mr. Sandip Kishore	Scientific Officer
Mr. Rajender Kumar	Sr. Technical Supdt.
Mr. Ajay Kumar Sharma	Jr. Technical Supdt.
Mr. Arpit Ashok	Jr. Technical Supdt.

Preface

IIT Patna has a state of the art computer center. There are two computer center labs, CC-1 and CC-2. CC-1 is equipped with 172 desktops and CC-2 is equipped with 42 Desktops. These labs operate from 9:00 AM till 12:00 PM on all seven days. In addition there are twelve UNIX/Linux/VMware based servers that caters to the institute IT services like Mail, Institute Webserver, Intranet, Online recruitment and admissions and students' academic requirements and research purpose.Availabilty 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:

Sl No	ISP Name	Bandwidth (Mbps)
1	Railtel	75
2	Reliance	--
3	National Knowledge Network	1000*

*Shared for virtual classroom and internet

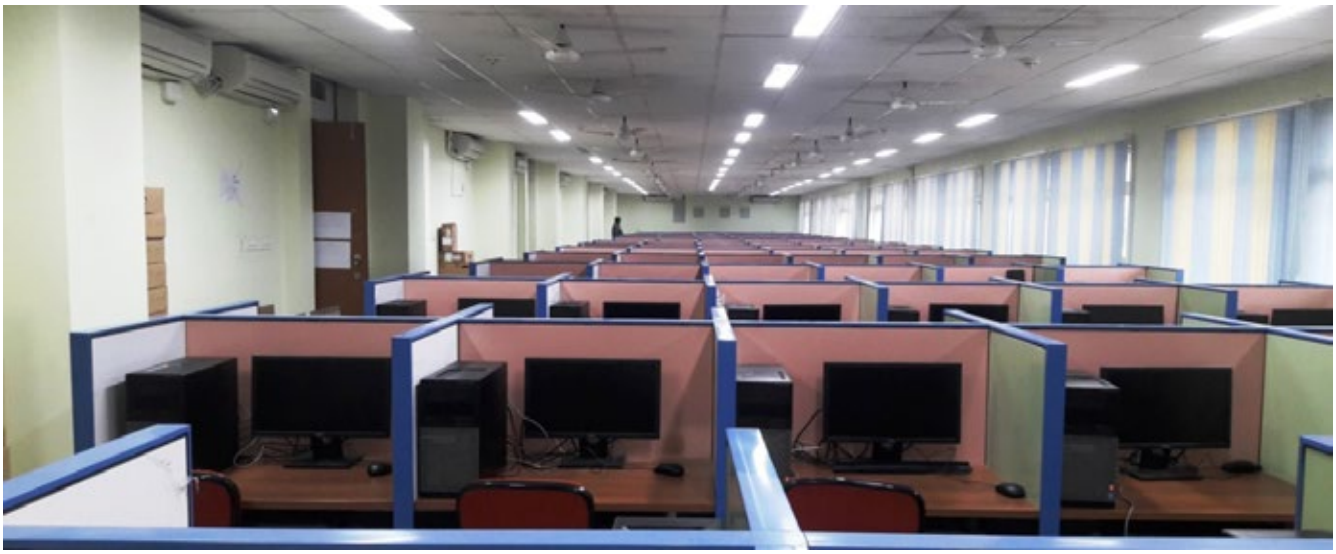
Hardware Resources

During the period of 2017-18, 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:

Sl No.	Item	Unit	Price (INR)
1	Desktop Computer(Acer Veriton)	130	83,31,844
2	HP Pro book (Laptop)	30	18,48,486
3	Canon Printer	05	1,85,307
4	SAN/NAS Storage	01	28,32,000
	Total		**1,31,97,637**

Overall, hardware resources of value **INR 1, 31, 97,637only**were procured to cater for needs of computer Center.



CC LAB-1

Maintenance and Software Resources

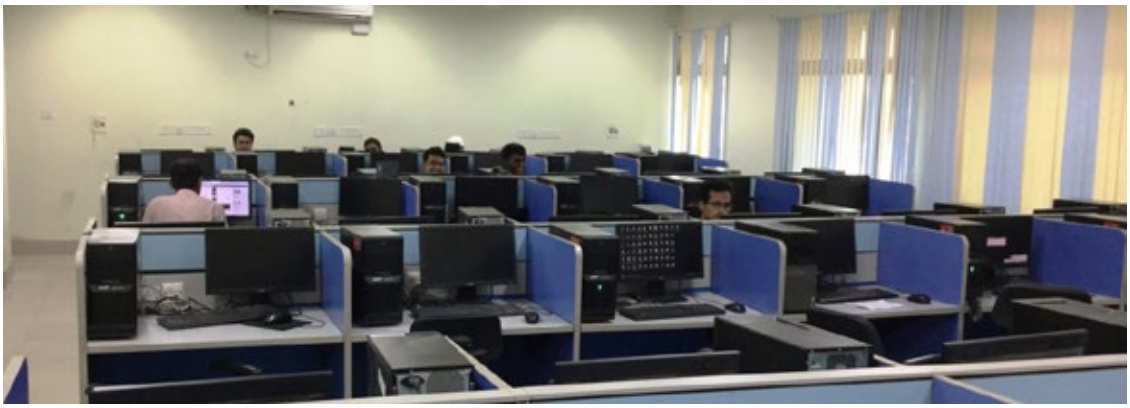
During the period of 2017-18, maintenance and renewal of existing H/W and S/W resources was taken up and new Software resources were added to Computer Center inventory. These resources align with the requirements of faculty, staff and students.

Following is the list of Software resources procured:

Sl No.	Item	Unit	Price (INR)
1	1 year maintainence contract of online UPS	4	1,41,600
2	Cyberoam renewal for 3 years		17,84,656
3	Railtel ISP renewal	1	12,81,500
4	Matlab Campus wide License	1	9,02,700
5	12V/65AH Exide Battery for CC Office Backup	32	1,28,640
6	Campus Wide Anti-Virus-Sophos	500	12,70,673
7	Institute Website Upgradation	1	4,82,620
8	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.

* Upgradation of current campus e-mail infrastructure to Enterprise Grade secure and highly available e-mail solution is under process. Estimated project value: Rs. 2 crore only.



CC LAB-1

Network

During the period of 2014-15, IIT Patna shifted to its permanent campus of 550 Acres. To provide LAN, internet and telephone service access across the campus, IIT Patna had floated a tender (via e-tendering) for turnkey solution including design, supply, installation, testing, commissioning, operation & maintenance for 3 years of backbone network for providing Data & Telephone services at BihtaCampus.The project was awarded to M/S IBM India Pvt Ltd and currently it is final stage of completion.

The value of this project is around **Rs. 6,50,99,490**.
The technical solution offered by IBM (CISCO as Original Equipment Manufacurer 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.
- 3 years warranty with smartnet for CISCO components and 24X7 operation & maintenance. Shall provide 1 site manager+ 3Engineers+1 reliever.
- There are around 3800 end points for LAN/Internet and IP telephones implemented during this period across the campus.

The above project went Go-Live on 15th Feb, 2016 and acceptance testing was completed by 14th Aug, 2016. The above project is currently in maintenance phase.

Project Kushal- Campus ERP and automation:

During the period of 2017-18, Campus ERP and automation project for "Supply, Installation, and Implementation & Hosting of Commercial Off-the-Shelf (COTS) based Enterprise Resource Planning Solution to automate Academic & Administrative Functions for Indian Institute of Technology Patna" has been initiated. M/S Pricewaterhouse Coopers Pvt. Ltd. has been selected as consultant partner through tendering for preparation of Software Requirements Specification (SRS), RFP, assisting with bidder evaluation and selection and Project Monitoring.

The SRS and RFP have been prepared and the tendering is under process.

Services and Support

- 365 X 24 X 7 support services for Network
- Desktop/Laptop/Server support on all working days during office hours
- Institutte 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 Maintainance.
- Support for training programs organization.
- Support for student Gymkhana website for events like anwesha, celesta, reverberance and other extra cocurricularactivities.
- 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

Server Room

Sophisticated Analytical Instrument Facilities

SAIF IIT Patna is a DST, Govt. of India sponsored data collection facility at IIT Patna. Like all other SAIFs, this centre is also providing data collection facilities to both internal as well as external users. At present this centre has two sophisticated instruments namely, High-resolution mass spectrometer(HRMS) and single crystal XRD. Within April 2017 to March 2018, SAIF IIT Patna has provided data of more than 350 HRMS samples and more than 80 single crystal XRD data to external as well as internal users. SAIF users have published more than 10 papers in various international journals using these data. SAIF is in the process of procuring a 500 MHz NMR. SAIF IIT Patna website was created with the help of CC team. All the information for SAIF IIT Patna is now available in http://saif.iitp.ac.in/. This website is also linked with the IIT Patna website under the service and amenities section.

High Resolution Mass spectrometer coupled with LC at SAIF IIT Patna

Single crystal XRD facility of SAIF-IIT Patna

Apart from data collection, SAIF IIT Patna also organized a two-day training session on single crystal XRD application for internal users of SAIF during 11-12th Aug 2017. More than ten students, and staffs participated in this training session. Dr. Sudha Devi from SAIF IIT Madras was invited as an external expert for conducting the training session. Similarly, SAIF IIT Patna organized a three-day national workshop on "THEORY AND APPLICATIONS OF SINGLE CRYSTAL X-RAY DIFFRACTION" during March 21-23, 2018. Dr. Chilla Malla Reddy from IISER Kolkata was invited as an external speaker for theory lectures. Dr. Debajit Sarma from Dept. of Chemistry also delivered a lecture on application of XRD techniques. After the theory lectures, there were a few practical sessions for data solving and data refinement. Dr. Sudha Devi from SAIF IIT Madras was invited for giving

the demonstration on practical sessions. Total twenty-five participants from different institutes such as IIT(ISM) Dhanbad, the University of Burdwan, IIEST Shibpur, NIT Patna, DRDO as well as IIT Patna students and staffs registered for this workshop.

Incubation Centre

The Incubation Centre(IC) at IIT Patna is focused on ESDM with special focus on Medical Electronics. It is a joint collaboration of IIT Patna, Ministry of Electronics and IT(MeitY) and Government of Bihar. The primary objective of IC is to promote innovation and entrepreneurship with the aim to identify, nurture and translate technological ideas and innovation in the broad area of ESDM sector with a focus in Medical Electronics.

The overall project outlay for setting up the IC is Rs 47.10 crore. The project is being implemented through joint funding from MeitY (Rs 22.10 crore) and Government of Bihar (Rs.25 crore) as matching Grant. This IC is being set up in area of 3000 square meters constructed space with state of the art facilities designated for ESDM incubation, in the premises of IIT Patna.

IC is expected to give an impetus to entrepreneurship amongst interested students, faculty and external innovators. The total project duration to set up the Incubation Centre is 5 years; the IC aims to incubate 10 ideas each years. In addition to state of art facilities for ESDM incubation, this IC will also provide the following support services:

Business Mentoring: Guidance by Angels, Experienced & Successful CEOs and Industry Veterans on a broad range of topics, including help in identifying suppliers, the appropriate location for the business, pricing of the product, marketing, developing effective business process etc.

IPR Mentoring: Guidance by mentors on IPR Strategy to be followed by the incubatees, in co-ordination with the larger overall strategy of the venture.

Support by Incubator Team: The Incubator team will provide complete support in terms of tracking the progress of the venture and also provide a complete support system for Incubatees.

Identification and negotiation of strategic alliances: Help in development of strategic relationships with key collaborators in related industries in order to increase market penetration, shorten the sales cycle, or develop other strategic arrangements.

Major Milestones achieved in 2017-18

The incubator has made significant progress during 2017-18. IC has accelerated its promotion and branding activities and has been on-boarding companies at a faster pace. The major milestones and accomplishments of IC through the FY 17-18 are listed below.

Incubation Program

Programs

Incubation centre is offering two types of programs: a two year incubation program and a 3 months pre-incubation program.
IC receives technical and business proposals from prospective incubatees through national level call for proposals and also through the startup portal of Bihar Udyog Vibhag (BUV). The proposals will be put through a preliminary scrutiny and the shortlisted proposals will be invited for a presentation before the Project Evaluation Team that comprises of experts from medical, technology, entrepreneurship and investment areas. This panel evaluate the proposals and selects companies to be admitted to these programs.

Evaluation Cycles

Three evaluations cycles were done in 2017-18 FY (fourth cycle in progress) for national level proposals. Five evaluation cycles were carried out for proposals from startup portal of BUV, thus making the total number of proposal evaluations cycles to **eight** this FY.

Till the end of 2017-18 FY, IC has evaluated a total of **190 Business Plans across 11 evaluation cycles**.

The number of incubatees has increased from 3 at the beginning of the 2017-18 FY to 13 at the end of the FY. **Nine new companies joined regular incubation program in this FY** and 1 company is undergoing pre-incubation.

Incubated Companies

The companies receiving incubation support from IC are:
Bionic Hope Pvt Ltd, the first company to be incubated at IC, is working on an Active Prosthesis. The company has developed an MVP in this FY and it is undergoing testing. The team has secured a BIRAC grant of 43.40 lacs under IIPME scheme. The team also reached the top 40 in National Bio Entrepreneurship Competition conducted by BIRAC. Ms Priyanka Kumari, one of the co-founders was selected among Top 15 Women in Entrepreneurial Research by Tie Delhi & BIRAC.

I. Electro CurieTech is developing a small wearable/handheld device for Cataract Screening and has progressed with an initial prototype. The team is refining the prototype for miniaturization.

II. 4Mirrortech Innovatives is working on a Remote patient monitoring system for critical care and is working on building an refined Prototype.

III. Atlamedico Tech Solutions is working on a Critical patient monitoring device in the cardiology space and is building a prototype

IV. Felicity Innovations, a team of students from IIT Patna, is working on the prototype design of an EEG based patient monitoring system

V. Dentedge Healthcare is working on the prototype design of a diagnostics toothbrush which can provide early warnings related to oral health

VI. Wityliti Automation and Solutions is developing a suite of products for home automation and has launched a room automation product by name "Roommate". Using this product, a user can control the lights and fans in an existing room without making any modifications to the wiring or the appliances. The company is working on next set of devices in the suite.

VII. Sivpinak Systems is designing a robot that can clean solar panels, thus automating the job.

VIII. Amrenjeet Surenjeet Ltd, selected from application received through BUV, is working on a Magnetic Engine and is refining the prototype after initial testing. The team has received financial support in the form of soft loan from Bihar Government under Bihar Startup Policy.

IX. Techpro Labz, selected from application received through BUV, is working on Robotics Training Kits and are developing refined prototypes of the same.

X. Avronica Solutions, selected from application received through BUV, is working on Fonoclock technology based timers and is working on design of the second iteration of their MVP

XI. Rishabh Kishore and team, a team of students from IIT Patna, is working on a Li S based battery with higher efficiency for electric vehicles. Design of the prototype is in progress.

XII. Soil Doctor is working in the field of automated soil testing and is in the pre-incubation program where the team is provided mentorship on technical aspects.

The teams are mentored regularly by expert mentors and Incubation Centre administration.

Facilities Currently Offered to Admitted Companies

Incubated companies are provided with office infrastructure including professional co working space, internet access, printers and storage facilities.

The companies are also provided access to the shared labs set up for initial design and prototyping, PCB design &fabrication, testing & calibration and 3D printing facilities. Assistance of technical staff is provided in the labs as and when required.

In addition to the access to office and technical infrastructure, In FY 2017-18, IC started providing ecosystem exposure to various companies through the events in which IC participates. This enables the companies to see the competition, connect with potential partners, suppliers and customers.

Expert mentors meet with companies frequently to review the progress of the companies and to guide them to accomplish the plans. Support from IC administration is provided on an ongoing basis for various day to day support needed by the companies.

IC collaborated with Bihar Udyog Vibhag to make its soft loan facility under Bihar Startup Policy extended to the Incubatees selected through national level call for proposals. IC also facilitate connects to service providers, both technical and non-technical, for the companies as needed.

Incubation Centre Team

IC was working under the able leadership of Dr Kailash Chandra Ray, Professor in charge until Dec 2017 and IC operations were well established under his guidance. Dr PK Tiwari, Asst Professor, Dept. of EE has taken over as the Professor In Charge of IC since Dec 2017.

IC has added a Manager and Assistant Manager (ops&marketing) to its team in the last FY. As on the end of FY 2017-18, IC is operating with 9 staff members.

While Manager looks after overall operations of IC, Asst manager ops& marketing takes care of regular operations and marketing. Three executives takes care of marketing, procurement, HR and administration functions respectively. Three executives maintains and operate the laboratories. There is one attendant to takes care of the file movements and housekeeping.

Facility and Labs

Over the last one year, IC has added offices for incubated companies and has enhanced the capacity of labs for incubated companies to work on their products.

Office

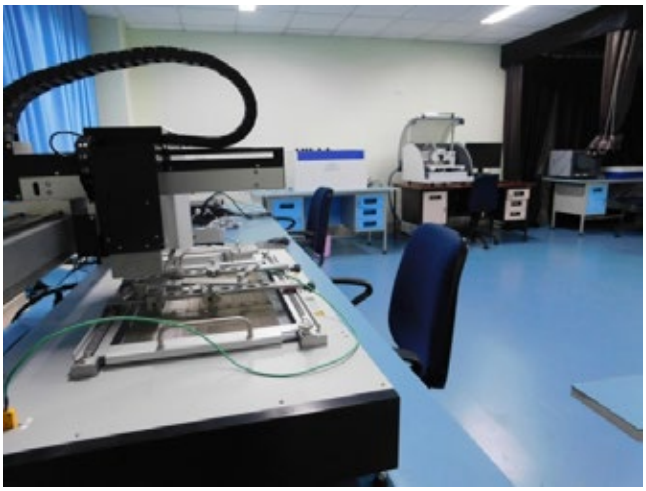
The incubator has set up office space for incubated companies. Each office can accommodate 4 to 5 people. The office space is provided with ergonomical chairs, storage and whiteboards. In addition to this, electronic workbenches are set up with advanced features to facilitate prototyping and preliminary testing.

Laboratories

The labs that are operational and available to incubated companies are:

Electronic System Design and Prototype Lab

This lab provide access to the incubated companies to design and prototype their ideas. Advanced design software and electronic components required for early prototyping are available here. Additional design software and prototyping hardware components were added to this lab in the last FY

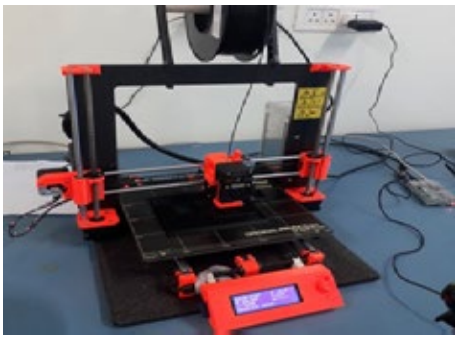


PCB Design and Manufacturing Lab

This lab consists of a set of equipment that enables a PCB design to be prototyped on board. The state-of-art equipment from Germany is capable of creating prototypes of upto 8 layered PCBs and include machines to rework on board if needed.

Testing and Calibration Lab

This lab consists of equipment for testing and calibrating the PCB prototypes. The equipment include pattern generators, logic analyser, RSA, MDO etc.



Mechanical Packaging and Product Prototype Lab

In the current FY, three more 3D printers were added to this lab, making the total to 4 printers. Two of the new additions are Prusa machines while the third is an FDM machine from BOLT3D that can print objects of dimensions upto 60cmX60cmX-60cm with a layer height of 0.04mm. Multicolour printing is possible with the help of three extruders and it supports printing with various materials such as ABS, PLA, Nylon and PETG.

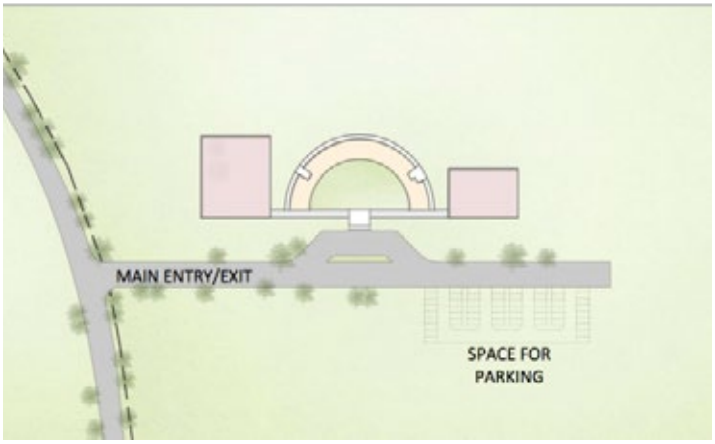
Events and Promotion

In the FY 17-18, IC continued its outreach and deal generation efforts through events, college outreach and digital marketing activities.

IC organized a Startup conclave and Medtech hackathon in December 2018 at IIT Patna, along with Nexus IITP 2017. Entrepreneurship Club of the institute was a partner in the event. The winner of the hackathon was provided the opportunity to present their business proposal before Project Evaluation Team of IC, in addition to cash award and certificate. The outreach efforts undertaken by IC proved effective as teams from various colleges participated and there were many registrations from South India as well. IC has also organized a workshop for startups in September 17 and it was attended by nearly 140 people.To promote the brand of IC among tech startups, IC attended 10 ESDM/Startup events in the FY 17-18, such as 'India Medical Devices', 'India Electronics Week' etc. These events took place at various cities such as Bangalore, Delhi and Hyderabad. During this period, 8 college outreach programs were carried out to prestigious institutions such as IIIT and MNNIT Allahabad, RV and BMS College Bangalore and other colleges in Patna and other cities. IC conducted entrepreneurship seminars in these colleges to promote the IC facilities and also to encourage students to take up entrepreneurship.

IC carried out Digital marketing campaigns through facebook and google and conducted three e-mail campaigns to target audience interested in entrepreneurship and ESDM. IC has also provided articles for Electronics For You magazine and placed 3 advertisements in it as EFY is widely popular among ESDM enthusiasts. Various IC events such as startup conclave and hackathon were covered by online and print media including Hindustan Times.

IC maintains its membership of ISBA and is connected with the Incubator network in the country



Construction of Permanent Building of Incubation Centre

A permanent facility of about 30,000 Sq Ft will be constructed for IC in the IIT Patna campus. A MoU was signed with Bihar Rajya Pull Nirman Nigam Ltd (BRPNNL) for the construction of the facility in last FY.

In FY 17-18, IC has finalized the concept design for the building from a set of three concepts submitted by BRPNNL. The construction committee has finalized the concept and reviewed the preliminary design drawings and estimates. Expenditure Sanction was provided to BRPNNL and tender for construction contracts was floated.

Conclusion

IC has made significant progress in setting up a state of the art technology incubation facility at IIT Patna with a focus on ESDM and Medical Electronics. IC enjoyed great support from the institute and the faculty and staff of various departments in activities widely varying from Incubatee selection and mentoring to Construction. IC is grateful to each member of IIT Patna fraternity for its whole hearted support and contribution. IC desires this collaboration to continue with full momentum as it is aiming to graduates a few companies in the FY 2018-19.

Sponsored Research and Industrial Relations Unit [SRIRU]

Dr. Asif Ekbal, Associate Professor, Department of Computer Science and Engineering is the Associate Dean, Research & Development in IIT Patna. At present 141 Sponsored projects, 40 consultancies are being undertaken at IIT Patna as on 07.05.2018 worth Rs. 10340.97 (In lakh) (Rs. 10010.87 + Rs. 330.10)

Some of the notable centers or research facilities include:

(a) Incubation Centre

(b) Electronic System Design and Manufacturing (ESDM),

(c) Technology Business Incubator

(d) Centre for Earthquake Engineering Research

(e) Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNMTT) for Internet-of-Things

(f) Sophisticated Analytical Instrumentation Facility (SAIF) Centre

(g) Centre for Endangered Language Studies

(h) Elsevier Centre of Excellence for Natural Language Processing etc

The following projects have been sanctioned by the various agencies in the FY 2017-18:

Name of the Investigators	Dept	Project Title	Funding Agency	Total Granted Fund (Rs. in Lacs)
Dr. Arijit Mondal Dr. R. K. Behera	CS/ EE	A Software tool for planning and design of smart micro power grids (proposal id-6158)	MHRD	86.04
Dr Shovan Bhaumik Dr. Nutan Kumar Tomar	EE	Underwater Target Motion Analysis with Passive Sensors	NPOL,DRDO	9.98
Dr Suman Majhi	CS	A Computational Model for 3DFluorescence Microscopy Super Resolution	SERB	15.10
Dr. Ranganathan Subramanian	CH	Theoretical investigation of intermolecular forces and optical properties of atmospheric aerosols	CSIR	4.00
Dr Mayank Tiwari Dr. Akhilendra Singh	ME	Design of an integral sqeeze film damper	ARDB	36.41
Dr Sudhir Kumar	EE	Cyber-Physical Systems for M-Health	SERB	22.15
Dr. Mohd. Kaleem Khan	ME	Enduro student india 2018	IITP	6.96
Dr Sanjeev Kumar	CB	A coupled process for simultaneous ethanol and methane production from enzymatically pretreated algal biomass	SERB	10.29
Dr. Venkat Ramanaiah Dantham	PH	Enhancement of Raman scattering signal of single molecules using photonic nanojet mediated surface enhanced Raman scattering (SERS) technique	CSIR	21.79
Prof. Pushpak Bhattacharya Dr. Asif Ekbal	CS	A platform for Crosslingual and Multilingual Event Monitoring in Indian languages	DeiTY	85.392
Dr Anup Kumar Kesari	MS	Plasma Sprayed Carbon Nanotube reinforced Molybdenum Disulphide anti-Friction Nanocomposite Coating with enhanced mechanical and wear properties	NRB	15.05
Dr. Afshan Naaz and Dr. A K Thakur	PH	Development of FRET based nanosensor for measurement of in vivo flux of amino acids	SERB	19.2
Dr. Pradeep Kumar Rai	MA	Investigation of Schur Multiplier and Bogomolov multiplier of groups	DST	35

Name of the Investigators	Dept	Project Title	Funding Agency	Total Granted Fund (Rs. in Lacs)
Dr. Sriparna Saha Dr. Asif Ekbal Prof. Pushpak Bhattacharya	CS	LG Life Assistant	LG Soft	7.5
Dr. Sriparna Saha Dr. Asif Ekbal Prof. Pushpak Bhattacharya	CS	1. Sentiment analysis based business intelligence system 2. Imagery based deep learning alogrithms for real time feature analytics	SkyMap Global	52.128
Dr. Mayank Tiwari	ME	Development of Low Cost efficient mechanism for collection of garbage and dirt for municipal copporations, panchayats	MHRD	16.71
Dr. Koushik Roy Dr. Vaibhav Singhal	CV	Development of structureal health monitoring technique for existing bridges in bihar: a pilot study	BRPNNL	2.7
Dr. Richa Chaudhary	HS	Green Human resource management in tamilnadu automobile industry	ICSSR	6
Prof. Pushpak Bhattacharya Dr. Asif Ekbal	CS	Hindi to English Machine Translation System for Judicial domain	TDIL Meity	77.71
Prof. Pushpak Bhattacharya, Dr. Asif Ekbal Dr. Sriparna Saha Dr. Jimson Mathew Dr. Joydeep Chandra Dr. Abhayananda Maity Dr. Sourav Dandpat	CS	Development of C-DAC Digital Forensic Centre with Artificial Intelligence based knowledge support tools	Meity	91.02

Training and Placement Cell

Training and Placement Cell (TPC) of the institute handles all aspects of placements for the graduating students of all departments. Right from contacting companies to managing all logistics for arranging the tests, pre-placement talks and conducting final interviews, TPC provides the best possible assistance to the recruiters. TPC comprising of student representatives and faculty members who facilitate the interaction between students and organizations to find their best matches in terms of their expectation, aspirations and requirements.This year, the TPC has been actively involved in the placement of the final year UG students and final year PG students, who were admitted in the year 2014 and 2016 respectively. Placement process has set a new benchmark by attracting the highest number of recruiters. Out of 140 UG students registered, 122 have got placed with an average package of 11.35 Lakhs. Also, out of 49 registered PG students, 29 have got placed with an average package of 8.32 L. This year, IITP has placed 88 % of its B.Tech (2014-18) and 60% of the M.Tech (2016-18) students till date with 179 offers. Five Ph.D students too received offers from various universities. The highest package of approx. 50 Lakhs was offered by Google as PPO (Pre Placement Offer) and Rs. 39.23 L per annum by Adobe. Similarly, DE Shaw has offered 29.5 L to two students and Amazon has hired four students so far this year, offering 27.6 L.

This year placement season also saw a hike in the number of core companies visiting the campus. Students have received tempting offers from ISRO, IOCL, HPCL, Amazon, Mathworks, Microsoft, Directi, Samsung – Delhi, Goldman Sachs, Deloitte, Future First, Arista Network, United Health Group, Cognum, Codenation, Sigmoid, L&T ECC, L&T Heavy Engineering, Infoedge (Naukri.com), Oyo Rooms, Infosys, Mediatek, Siemens, Volvo Eicher, Adobe, Netapp, Smartprix, Finisar, Tejas Network, Cognizant, TCS Research, Capgemini, TVS Motors, Samsung Noida, Timetooth Technologies, Axsiom (Namekart), Tata Motors and many more.Training and Placement Cell also help the pre-final year B.Tech, and M.Tech students to get summer internship for a period of 8 - 10 weeks. This year, our students received the summer internship offer from various private companies, PSU, R & D organizations in India and abroad. Few of the names are Amazon, Mathworks, Webstaff, Microsoft, Arista Networks, DRDO, SAIL, NTPC, IOCL, TCS Research, IISc Bangalore, IIT Kanpur, Maruti Suzuki, Tata Steel etc. A good number of students have got internships in foreign universities including Nanyang Technological University of Singapore, SUTD Singapore, Stanford University, University of Tokyo, Indiana University etc.

This year onward, Training and Placement Cell is actively organizing the various training sessions, industry interactions and career guidance sessions for our students. Till now, TPC has conducted three workshops with the association of B-Factory, Universal Education Bangalore and Thinkers & Fillers, Patna. Apart from these, industry interaction sessions with Mojo Networks and LnT Heavy Engineering were also organized for our students. A Japanese language course was also conducted by TPC with the association of Webstaff, Bangalore.

Health Facilities

Health care is an important tool in the development of Institute.IIT Patna Hospital has been running with the help of Ruban Memorial Hospital. We have associated ourselves with local hospitals such as Mahavir Vatsalaya Aspatal, Sahayog Hospital, Kurji Holy Family Hospital and Paras HMRI Hospital to cater to the basic needs of our employees and students on cashless basis. Part time specialist doctors (in specialization of gynecology, pediatrics, psychiatric & physicians) are also visiting the campus hospital on weekly basis. Hospitalization expenses of all students are covered under a medical insurance policy. A PIC Medical, Pharmacist and an Assistant are available on a full-time basis to look after the medical services. For the routine medical services within the campus, two in-house resident doctors from Ruban are residing in the campus. An Ambulance Service 24 hrs is also available to provide emergency needs to student, staff & faculty. An intranet portal for the IIT Patna Hospital has been developed to impart information about the visiting consultants & empanelled hospitals. The IIT Hospital Patna is functional with primary basic health care facilities for employees and students.

People

Name	Designation	Phone	Email
 Dr. Murshid Imam	PIC, Medical	0612-302-8699	pic_medical@iitp.ac.in
 Ravi Shankar	Pharmacist	0612-302-8802	ravi@iitp.ac.in
 Purna Chandra Mandal	Jr. Att.	0612-302-8802	pcmandal@iitp.ac.in

Unnat Bharat Abhiyan Cell

Unnat Bharat Abhiyan is an initiative started by the Indian government for transformational change in the rural Development process by leveraging knowledge institutions to help build the architecture of inclusive India.

The Main aim is to act as a bridge between the society and an inclusive Academic System along with providing knowledge and practices to emerging professions and to upgrade the capabilities of both public the private sector in responding to the developments needs of rural India..

The UBA cell of IIT Patna is one of the participating institutes which has formed an inter–disciplinary team of faculty members and support staffs. Under this project we have identified few villages around our permanent campus and have chosen to work on selected themes.

We have adopted following villages namely:-

- Dilawarpur – Rajpur
- Amhara.
- Ibrahimpur.
- Kanchanpur-Khargpur.
- Parev

At the very first level we are going through massive survey of each household comprising of detailed survey with each and every member of the house individually.

The major themes and the challenge areas which comes into picture under the entire project will be analyzed at the end of the survey process of each village with time, in coordination with reports generated from both the participating and the coordinating institute altogether. Steps for the improvement and transformation of the same will be decided accordingly.

For instance we have almost completed survey of each house in the village Dilawarpur. A major Part of the population of this village is combined with a separate village Rajpur which constitutes a large part of land and population of the people living in the village according to the geographical distribution.

We are initially working in two teams to collect the data and digitize it simultaneously via software so that an e-report can be generated as a whole and major problems in villages can be identified which acts as an obstacle in the development needs of rural India.

As of now, there are some challenges which are identified during the survey at ground level as per the Field Study of Dilawarpur-Rajpur by the team where majority of people of this village are under Below Poverty Line lacking source of economy.

quarter finals. For the first time, volleyball girls' team participated in sports meet and performed really well.

Major Problem consists of :-

Road: - The Road connectivity in this area is extremely poor and since the interior parts of this villages are a bit far from the main road it becomes difficult for the people to go to and fro for their source of economy.

Drainage & Waste Collection Method:-

One of the most terrible problem is of 'Drainage' and 'Waste Collection method'. There is no proper outlet of the household drainage and dumping common area which is making the environment polluted and hence making difficult for the villagers to maintainhygiene, as a result sanitation of the village is destroyed. Compost Pit still unknown.

Source of energy and power:-'

Electricity availability" of almost 18 hrs, status seems to be in a balanced ratio between both the types, whereas cooking is still leading in case of 'cow dung', 'wood' or 'kerosene' as compared to 'LPG', Biogas still Unknown.

Information of Government Schemes:-

Education Is being ignored as a least priority basic need in these areas where majority of people are educated only till low level education as a result of which lack of awareness is seen in case of 'Information Of government Schemes and the number of people benefited.

Toilet: -

Few people however do have private toilets installed inside their houses, but majority of people are still following "open defecation method", due to lack of knowledge and fund they are unable to build individual toilets in their house.

Source of Water: -

Almost none of the houses have community tap or piped water facility. People are still managing individual water storage via hand-pump be it public or private. No wells found in this village.

*The effort to provide best possible solution based on "**Activities Undertaken in the villages**" to the above highlighted problems of the villages will be the first concern during the **Village Development Plan** where we look forward for active participation by the 'faculty members', 'support staffs' and 'government bodies' by conducting salient projects in different areas of intervention (Education/Health/ Awareness/ Women Empowerment/Water/Agriculture/Energy etc.).*

Students Gymkhana

- IIT Patna students team participated in Udghosh Sports Meet-2017 held at IIT Kanpur from October 12 to 15, 2017. Ashish Kumar secured 4th position in Javelin throw.
- IIT Patna boys Football team participated in AIIMS Patna Fest -2017 from 04.11.2017 to 05.11.2017 and got gold medal.
- 102 students including 88 boys and 14 girls participated in the 52nd Inter IIT Sports Meet-2017 at IIT Madras from December 16 to 23, 2017. IIT Patna contingent participated in various games and sports and performed well in events like Badminton, Tennis, Table Tennis, Basketball, Volleyball, Football, Cricket and Athletics. Ashish Kumar qualified for the semifinals of the 400 meter running event. Volleyball and football boys' team played very well in leagues and reached in quarter finals. For the first time, volleyball girls' team participated in sports meet and performed really well.
- IIT Patna staff members' team also participated Inter IIT Staff Sports Meet-2017 in various games like Volleyball, cricket, badminton, table tennis, lawn tennis and athletics and performed well.
- IIT Patna boys volleyball team won silver medals in BIT Patna fest -2018 from 9.3.2018 to 11.3.2018 and Anurag Meena (4th year) got player of the tournament award.
- IIT Patna sports council organized Intra-mural competition from 29.03.2018 to 01.04.2018 in various games and sports in which huge number of students, faculty and staff members participated in different games and sports and made event great success.
- Senior Sports Officers Dr.B.B.Appaji (IIT Bombay) and Mr.P.K.Roy (IIT Kharagpur) to visited our campus and suggested possible improvements in the student training programme and for infrastructure development.


PATNA

Various Activities at IIT Patna

Fifth Convocation

August 6, 2017 is an important date for graduating B. Tech and M. Tech batches of IIT Patna. This being the 5th Convocation of IIT Patna, saw 175 B.Tech. Students, 70 M.Tech. Students and 28 PhD students receiving their degrees. The convocation began with an invocation during which the National Song and the Institute song were sung while the academic procession comprising the Chairman, Director, Members of the Board of Governors, Members of the Institute Senate entered the venue. It was declared open by the Chairman, BoG, Padma Bhushan shri Ajai Chowdhry.

While the President of India Gold Medal for academically best student went to Shubham, B. Tech. from Department of Computer Science, the Director's Gold Medal for best all rounder was awarded to Divya Garg, B.Tech from Department of Chemistry. The Institute Silver Medal for securing highest CPI in each course went to Shbham, Garima Gautam, Raunak Srivastava, J.A. Reddy, and Ashutosh Singh. The Chairman's Gold Medal awarded to academically best student for M.Tech students was awarded to Tapan Sood from Department of Mechanical Engineering and the Institute Silver Medal for securing highest CPI in each course was awarded to Arabinda Swain, Dept of CEE, Ankit Makkar, Dept. of EE, Saurabh Srivastava, Dept. of CSE, Tapan Sood, Dept of ME, Kishan Gopal Karwa, dept. of ME and EE, Kiran Singh, Depts. Of Physics and Chemistry. Apart from these medals, B.Tech and M.Tech. Students were awarded "proficiency in project work prize" of Rs. 5000/- for the best project works in their departments.

The chief guest for the occasion was the renowned industrialist Padmabhushan Shri Babasaheb Kalyani. Ill-health kept him away from the convocation but he made his presence felt virtually. He exhorted the students to be enthusiastic about the future and make an effort to face challenges thrown to them by the outside world. The two chief guests for the occasion – Prof. M.S.Vijay Kumar, Executive Director J- WEL & Associate Dean and Senior Strategic Advisor for Digital Learning MIT and Prof. Ajit Prasad, Director IIM Lucknow lauded the students for their excellent performance. The Chairman of the Board of Governors, Padma Bhushan Shri Ajai Chowdhry congratulated the students on their success. The director of the Institute, Shri Pushpak Bhaatcharyya dwelt at length over the growth of the Institute during the last year. New constructions are coming up like boys' and girls' hostels; focus is being given to entrepreneurial activities with a lot of support from the Government of Bihar; faculty

have been getting accolades at various academic forums and the students too have shown their mettle in various competitions at the national level. There have been various collaborations with international institutes like IST, Lisbon, Portugal and Wright State University, Ohio, USA.

The campus was a scene of festivities and happy faces and emotional moments with group photos, selfies, and celebrations adding to the mood. Family members exchanged notes of the success of their wards and immensely enjoyed the graduation ceremony.

Foundation Day & Nebula '17

IIT Patna celebrated its 9th Foundation day on August 6, 2017 with fullvigor and enthusiasm. Several cultural and literary competitions were heldto mark the day. Dr. M.S. Vijay Kumar (Executive Director J-Wel andAssociate Dean at MIT) - the Chief Guest, addressed the crowd highlightingthe importance of education in one's life. Prof. Ajit Prasad (Director, IIMLucknow) was the Guest of Honour for the Day. The students were in highspirits and made the most of the celebratory atmosphere on the campus.

11thof August, 2017 was also marked as a memorable day in the life of every fresher of 2017-18 batch at IIT Patna. Nebula was filled with excitement, joy, music, enthusiasm and happiness. The celebration started with IIT Patna's Institute song followed by lamp lightening and welcoming the chief guests Prof. Pushpak Bhattacharya, Director IIT Patna and Mrs. Aparna Bhattacharya with bouquets. The freshers were formally welcomed into the IIT family by Mr. Vipin Mavi, Vice President, Student Gymkhana and Prof. Pushpak Bhattacharya, Director, IIT Patna.




Independence Day '17

The 70thIndependence Day at IIT Patna was celebrated with full vigor and enthusiasm by the IIT Patna family. The national flag was hoisted by the Hon. Director Prof. Pushpak Bhattacharyya amidst heavy rains with the pledge to work towards national peace and harmony. The students presented cultural programmes to mark the day special.

Republic Day'17

The 69thRepublic Day was celebrated at IIT Patna with the pledge to maintain and uphold the dignity and harmony of our nation. The flag was hoisted by Hon. Director Prof. Pushpak Bhattacharyya. Flag hoisting was followed by a series of cultural and patriotic performances by the students like songs, speech, street plays and so on.

International Yoga Day celebration in IIT Patna

IIT Patna has celebrated International Yoga Day on June 21, 2017 with very warm spirit and enthusiasm. It has been organized by Institute Wellness Center and NSS. The students, staffs, faculty, and their families have attended the event joyfully.

Prof. Pushpak Bhattacharyya, Hon'ble Director of IIT Patna, has inaugurated the program and addressed the gathering and talked about the significance and important benefits of the practice of Yoga.

Dr. Atul Thakur, Assistant Professor, MED, IIT Patna has conducted a workshop to demonstrate and practice Yogasanas. All the people assembled have participated in this workshop during 6:00-7:00 AM. After that, Dr. Thakur has also delivered a nice talk on Stress-free Life with Ashtanga Yoga for about an hour.

Dr. Atul Thakur, Assistant Professor, MED; Dr. Akhilendra Singh, Associate Dean Student Affairs; Dr. Ajay Thakur, PIC, NSS; Mr. Sanjay Kumar, Deputy Registrar; Dr. S. K. Samanta, PIC, Wellness Center; Dr. Arijit Mondal, PIC, PR; Student Volunteers, Staffs and many other people contributed to conduct this event meticulously and make it a grand success.

Conferences, Seminars and Workshops

Workshop on 'Advances in Physics: From Concepts to Applications'

A workshop on 'Advances in Physics: From Concepts to Applications' during July 20-21, 2017 was organized at the Department ofPhysics, IIT Patna.Prof. P. K. Mukherjee, Professor, Ramakrishna Mission Vivekananda University and ex-senior Professor, Indian Association for theCultivation of Science, Kolkata addressed the audience and gave an inspiring lecture on "Advancement in atomic and molecularstructure: A chronological development". The two-day workshop ended with the valedictory function on 21st July 2017 and Prof. DollySinha, Pro-VC of Patna University, became the chief guest for the event.

Workshop on "Language- Mind- Brain:Interface Studies"

A two-day workshop on "Language- Mind- Brain: Interface Studies" was organized by HSS, IIT Patna on 19- 20 August, 2017 in collaboration with School of Language and Linguistics, Jadavpur University and Central Institute of Indian Languages, Mysore. Around 50 academicians participated in the workshop from all across the country. Prof. (Retd.) R. Amritavalli (EFLU, Hyderabad), Dr. Niladri Dash (ISI Kolkata), Dr. Dipanjan Roy (National Brain Research Centre, New Delhi) and Dr. Kamal Kumar Chaudhary (IIT Ropar) were the resource persons. Dr. Sweta Sinha was the convener of this workshop.

Science Academies 93rdRefresher Course inExperimental Physics

A "Refresher Course in Experimental Physics",supported by the three Prestigious ScienceAcademies in India, during November 07-22,2017 was organized in the Department ofPhysics, IIT Patna.Prof. C.S Sundar (IGCAR, Kalpakkam) wasthe Course Director and Prof. Utpal Roy,Department of Physics, IIT Patna was theCourse Coordinator.

39th International Conference of theLinguistic Society of India (ICOLSI 39)

The 39thInternational Conference of the Linguistic Society of India (ICOLSI- 39) commenced at IIT Patna on December 8 on a very high note. The four day conference (8- 11 December) consists of paper presentations and discussion sessions on various aspects of languages and Linguistics. The current Linguistic Society of India President (Padma Shree) Prof. Anvita Abbi inaugurated the conference along with Prof. Caroline Fery (University of Frankfurt), Prof. Panchanan Mohanty (Central University of Hyderabad) and Prof. P.K. Pandey (Jawaharlal Nehru University). The Director of Central Institute of Indian Languages (Mysore) Prof. D.G. Rao motivated the paper presenters for taking up further research in Indian languages. The second day of the conference had plenary talks by Prof. Girish Nath Jha (JNU) and Prof. K.V. Subbarao (Delhi University). The third day of the conference has special sessions on language- technology interface and talks by Ms. Kalika Bali from Microsoft Research- India and Dr. Niladri Dash (ISI Kolkata). The participation is not only national but enthusiastic linguists have come from Nepal, Bangladesh and Europe. The conference conveners Dr. Smriti Singh and Dr. Sweta Sinha also informed the august gathering about a special centre for the studies on endangered languages being set up under the aegis of HSS department through MPLADS.




Guest lecture on Vedic Mathematics and Science

Shree Shree Jagadguru Shankaracharya Swami Nishchalananda SaraswatiMaharaj has visited IIT Patna on the eve of 16th Feb, 2018. He washeartily welcome by Prof. S. K. Parida (Acting Director and AssociateDean, Academics) and Dr. S. K. Samanta (Professor In-Charge, InstituteWellness Centre). The program was coordinated by Dr. S. K. Samanta, IITPatna and Mr. Vivek Vikash, Regional Coordinator, Patna. On this occasion,Pujyapad Shree Shree Jagadguru Shankaracharya has delivered lecture onVedic Mathematics and Science. He also talked on Vikash Ki Adhunik Aur

Vaidik Vidha. He was elaborating on the negative impacts of technologyapplications and consumerism culture on present generation and how itshould be rectified for the benefit of mankind and environment. Theprogram was conducted during 4:45-7.00 PM at Senate Hall, Admin Block.This program was attended by about 200 people.

OpenGovDataHack

'OpenGovData' is poised to boost the App Ecosystem and App Developers in the country: Shri Sanjay Singh Gahlout, DDG, NIC

Fourth edition of #OpenGovDataHack begins at IIT Patna in Bihta (Patna), which is witnessing excited and energetic app enthusiasts who are committed to develop Next Big Apps, based on Open Government Data, for the citizens of the country.

The 24 hrs Hackathon is organized by National Informatics Centre (NIC), in association with IAMAI & Startup India, who have collaborated to conduct Nation Wide Hackathon across seven cities of India and also an online Hackathon event. IIT-Patna is the hosting partner for the Patna edition of #OpenGovDataHack and is supported by IEEE SB & NJACK of IIT-Patna.

Patna #OpenGovDataHack was inaugurate by the **Deputy Director General of National Informatics Centre, Shri Sanjay Singh Gahlout**, who deliberated upon the importance of the Data for developing the Apps and also encouraged the app enthusiastic Students and Professionals to come forwards and contribute towards developing a *Citizen focused App Ecosystem*. He also shared his views on DATA.GOV.IN which is one of the unique opportunities with vast potential to do wonders for the App ecosystem.

The participants were overwhelmed with the presence of **Shri Rahul Singh, Secretary IT, Govt. of Bihar**, who interacted with participating teams and shared his valuable inputs, which helped the participants in improving their work in the respective domains of OpenGovData Apps/Infographics.

Dr. Sriparna Saha, Branch Counselor of IEEE Student Branch & Asst. Professor, CS&E Department, IIT-Patna, in her welcome remarks, talked about the IIT-Patna's initiatives for app-ecosystem. **Dr. Mahesh Kolekar, Associate Professor, Electrical Engineering Department, IIT Patna**, also shared his view and welcomed the participants of the Hackathon.

Shri D P Misra, Technical Director, NIC, deliberated upon the Hackathon process and conducts he briefed the participants on themes and usability of OpenGovData for the hackathon.

The event is being managed by the office bearers of IEEE student branch IIT Patna including Pramit Biswas (Chairman), Rakesh Sanodiya (Vice Chairman), Dipanjyoti Paul (General Secretary) and Pratik Dutta (Treasuer), who have put their immense effort day and night to make this successful. Some senior PhD scholars including Nilotpal Chakraborty (Ex-Chariman, IEEE student branch) and Roshni Chakraborty were also present during the inauguration and encouraged students to take up this challenge to deliver the next best apps from Patna.

The Hackathon will continue for 24 hrs and will be over by 11 am on 15th October. The winners of the Patna City challenge will be awarded with prizes after finish of the Hackathon.

Workshop on Commercializing Technology Innovations

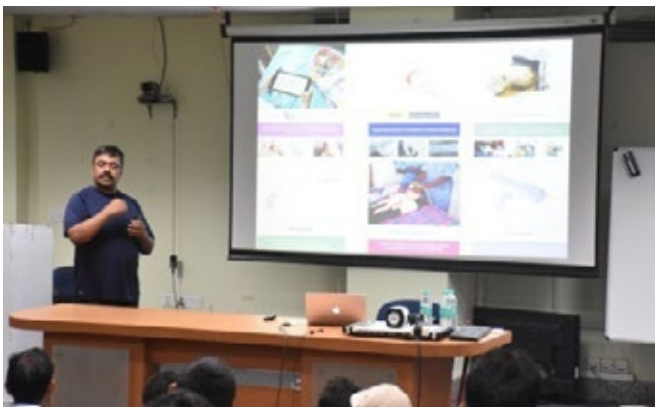
IC IIT Patna conducted a half day workshop on the topic "Commercializing Technology Innovations" on 24th September, Sunday.

The Workshop was conducted at Incubation Centre conference hall at IIT Patna campus at Bihta from 2:00 pm to 5:00 pm. The event was well attended by students, members of faculty, innovators and startups aspirants from various engineering and medical institutes from Bihar and rest of the country i.e MNNIT Allahabd, NSIT Bihta, BITmesra Patna, NIT Patna, AIIMS Patna and many other premier institutes.

Dr. Kailash Chandra Ray, Professor In Charge of Incubation Centre, in his welcome note observed that lack of awareness in the ecosystem about the nuances of translating a technology innovation into a product is a major roadblock faced by innovators and aspiring entrepreneurs. He said "Incubation Centre IIT Patna is in the forefront of technology business incubation in the state and the region and has strongly felt the need to build awareness in the community about this knowledge gap", describing the context of the workshop.

Dr. Prashant Jha, who serves as the Fellowship Director of Medical Device Innovation Program at AIIMS and IIT Delhi conducted the workshop. Dr Jha is a multidisciplinary expert who trains physicians, engineers, designers and entrepreneurs in the art and science of innovating and commercialising low-cost, high-impact medical devices. He also serves as visiting faculty in several Medical, Engineering and Business Schools in India, Australia, Finland, Japan, UK and USA. He shared his experiences in setting up over a dozen enterprise over last 20 years and discussed the key lessons learnt on the way. He talked the participants through the steps involved in bringing an idea to market & building a sustainable enterprises.

While giving the vote of thanks, Entrepreneurship club coordinator, Piyush, said that we aim to foster the entrepreneurship spirit among the students in the field of startup.



In its two year Incubation programme, the IC IITP will support start-up companies to validate ideas, develop products, build and test prototypes for innovations in the area of ESDM and Medical Electronics. IC IITP will enable the start-ups with fully furnished office space, conference rooms, internet and communication facilities, state of the art laboratories for Electronic System Design, PCB Prototyping, Testing and Measurement, Mechanical packaging and Product Prototyping. It will also facilitate guidance by mentors from Industry, IITP faculty, Investors and IC management on business, technology, IPR and other aspects. Incubator will facilitate investor connect, which will help start-ups in getting needed funds in addition to the seed money of 10 lakhs provided by Govt. of Bihar.
Incubation centre is supporting 11 technology startup companies now. Bionic Hope Pvt Ltd, a company incubated in Incubation Centre IIT Patna has recently won BIRAC grant of more than 43.4 lakh rupees for their product development. IC is preparing to onboard its next batch of incubatees.

Incubation Centre IIT Patna now receives applications for its next batch of Incubation. Have an innovative idea? Send your business plan to iciitp@iitp.ac.in to be evaluated for incubation. Visit Incubation Centre website www.iciitp.com for more details.

GIAN – Global Initiative of Academic Networks

The following courses took place in the last financial years.

Course Name	Monotone Iterative Techniques
Foreign Faculty :	Prof Alberto Cabada Fernandez, Spain
Host Faculty :	Amit Kumar Verma, Mathematics
Duration :	05-11-2017 to 11-11-2017
Course Name	Complex Network Analysis
Foreign Faculty :	Dr. Natarajan Meghanathan, United States of America
Host Faculty :	Dr. S. Tripathy, Computer Science and Engineering
Duration :	20-11-2017 to 24-11-2017
Course Name	Machine Learning and its Role in the Internet of Things (IoT) Analytics
Foreign Faculty :	Prof. Ramakrishna Thurimella, , United States of America
Host Faculty :	Dr. Samrat Mondal
Duration :	04-12-2017 to 08-12-2017
Course Name	Neural Machine Translation
Foreign Faculty :	Prof. Andy Way, Ireland
Host Faculty :	Dr. Asif Ekbal, Computer Science and Engineering
Duration :	04-12-2017 to 10-12-2017
Course Name	Fuzzy Techniques for Intelligent Decision Making
Foreign Faculty :	Dr. Sukhamay Kundu, Louisiana State University, United States of America
Host Faculty :	Dr. Samrat Mondal
Duration :	11-12-2017 to 15-12-2017
Course Name	Modelling approaches for coupled multiphysics engineering problems
Foreign Faculty :	Dr. Vinod Kumar
Host Faculty :	Dr. Manabendra Pathak
Duration :	18-12-2017 to 22-12-2017
Course Name	Energy Management in Cloud Data Centers
Foreign Faculty :	Prof. Krishna Kant, United States of America
Host Faculty :	Dr. Rajiv Misra
Duration :	25-12-2017 to 29-12-2017
Course Name	Beyond the Kalman filter: Bayesian recursive filtering in engineering and finance
Foreign Faculty :	Prof Paresh Date, United Kingdom
Host Faculty :	Shovan Bhaumik, Electrical Engineering Department
Duration :	01-01-2018 to 05-01-2018
Course Name	Mathematical Framework of Sequence Design for Wireless Communication Systems
Foreign Faculty :	Zilong LIU, Singapore
Host Faculty :	Dr. Sudhan Majhi, Electrical Engineering and Mathematics
Duration :	13-01-2018 to 19-01-2018
Course Name	Big Social Data Analysis
Foreign Faculty :	Erik Cambria, Singapore
Host Faculty :	Prof. Pushpak Bhattacharyya, Computer Science and Engineering
Duration :	26-02-2018 to 02-03-2018

7th Research Scholars' Day

Celebration of Research Scholars Day (RSD) is a remarkable event in the academic calendar of Indian Institute of Technology Patna where research scholars from the institute display their research work through poster and oral presentation. This year it was celebrated on March 17, and it was the 7th edition of RSD and it is one such event that is marked by originality, versatility and diligence of research work done at the institute. This event gives an opportunity to fellow young researcher to learn and communicate their work not only amongst their peers but represent it in front of the experts. In the recent years, enormous increase in the interest of research scholars towards participation dictates a promising future of research culture at IIT Patna.

This year we witnessed eminent personalities like Prof Sudhakar Rao, Chairman Department of Civil engineering IISc Bangalore as chief guest; Prof Pratap Raychaudhuri (Shanti Swarup Bhatnagar Awardee & Proferssor Department of Condensed Matter Physics TIFR Mumabi) as guest of honor and Prof Shankar Ashish Dutt (Professor, Department of English Patna University) as our special guest.

There were total 110 participants in three minutes and poster presentation competition. In the three minutes presentation, there were 24 participants from the ten departments and among them Mr. Durga Prasad Ghosh (ME) and Ms. Sonam Kumari (CH) were awarded first best presentation award, Mr. Rakesh Palisetty (EE): 2nd and Mr. G (ME) got the third prize.

Among the 102 poster presentation from ten departments, the department wise winner is as follows: Rakesh Kumar Sinha (CBE), Kumari Sweta (CE), Yogesh Jaiswal (CH), KM Pooja (CSE), Rahul Gupta (EE), Mamta Kumari (HSS), Anshika Srivastava (MA) Ashu garg (ME) and Nilanjan Kundu (PHY).

Organizing Committee:

Prof Pushpak Bhattacharyya	Patron
Dr. Ajay D Thakur	Convener
Dr. Meghna Dutta	Member
Dr. R.K. Bag	Member
Mr. Ashutosh Kumar	PG Representative

National Science Day

One day workshop on the "National Science Day Celebration & 125th Birth Anniversary of S. N. Bose" is organized by the Department of Physics, convened by the Head of the Department, Dr. Utpal Roy, on 6th March in the Senate Hall, IIT Patna.

National Science Day has been organized since couple of years by the department of Physics, IIT Patna. This year, it is clubbed with the 125th Birth Anniversary of the great scientist, Prof. S N Bose. This is a part of the celebration, which was inaugurated by the Prime Minister Narendra Modi on 1st January, 2018 and set the ball rolling for a year-long celebration to mark the 125th birth anniversary of eminent physicist Satyendra Nath Bose who was born on 1st January, 1894.

The inaugural session was graced by three eminent chief guests, Prof. Amitava Datta (University of Calcutta), Prof. R. K. Kotnala (NPL, Delhi), Prof. Sourabh Basu (IIT Guwahati) and Head of the Department, Dr. Utpal Roy.

Dr. Roy mentioned about the origin of the workshop and the importance of C V Raman and S N Bose in Indian Science. It was followed by three guest lectures, respectively on "Symmetry & Supersymmetry"by Prof. Datta, "Hydroelectric Solar Cell" by Prof. Kotnala and "Bose-Eisntein condensate-A tribute to SN Bose" by Prof. Basu.

Guest lectures are followed by a competition of oral presentation by the senior research students of IIT Patna and a poster presentation by the other research students.

Program is concluded with the prize distribution to the winner of oral & poster presentation.

Celesta'17

The morning of 7th October 2017 had plethora in store for the premier college-the Indian Institute of Technology,Patna for it welcomed the inauguration of the 9th edition of the annual techno-management fiesta of the college -Celesta 2K17

The year 2009 saw the birth of Celesta!Since then it has grown in ways truly magnificent and unprecedented.Ever since 2009,the efforts which have gone into making this fest, what it finally is today are commendable and it is manifested very well by the benchmarks the previous editions of Celesta have achieved.So much so that it stands today shoulder to shoulder with most of the fests in eastern India of this kind, with an escalating footfall year after year.A showcase of innovation,it aims to bring competition alive and celebrate student life.The fest provides a platform for the youth to showcase their talents and skills in fierce competitions,displaying cutting-edge technology and research.The guest lectures by the renowned lluminaries,wherein they motivate the youth and promote solutions to alleviate the common man of his banal yet significant problems, definitely add a feather to the cap.

The day began with the opening ceremony held at the Senate Hall of IIT Patna sharp at 9:00 am. Professor S.K. Parida, Associate Dean Academics, IIT Patna, graced the occasion with his auspicious presence as the chief guest of the first and the foremost event in the lengthy itinerary of technical and managerial events. The opening ceremony marked yet another milestone in the history of Celesta and the very commencement of Celesta' 17.

Soon after this the crowd dispersed and a cacophony of voices pervaded the registration

desk set up in the tutorial block, giving the organisers a hard time, as the number of participants was ever increasing. The partakers comprised of students hailing from well known schools and colleges in *Patna-Radiant School, Litera Valley School, Foundation Academy School, BIT Mesra, Maulana Azad Engineering College, NIT Patna, Bakhtiyarpur Engineering College, NSIT and KV Kankarbagh.*

Day one of the technical carnival consisted of various contests like the Astroparticle Voyage, Rocket Propulsion**,** Spagaridge, Aqua Soccer, B-Quiz, IPL Auction, Static Rush, House of Cards and a Virtual Auto Expo. Also the RTDC (Rural Technology Development Club), IIT Patna, organised a school exhibition- "Jigyasa" wherein the students finally gave their living thought a tangible form via their models and projects. Another management event in line was "Manthan" - the research conclave of Celesta.The participants got an opportunity to present a piece of their research work which has the potential to blow the minds of the onlookers via a presentation.

Out of this kaleidoscope of events House of Cards, Static Rush and IPL Auction were the events that were most sought after by the participants.The team of Celesta'17 ensured a warm stay of the participants at IIT Patna and made it a point that the winners didn't return empty-handed. Each event had its own amount awarded to the winners as prize money.There was one such team of Shiv Raj and Ankit Kumar from the Bakhtiyarpur College of Engineering, Patna who bagged the first position in Virtual Auto Expo.

Last but not the least, it was Monopoly,the real business game that finally closed the day!

The fervour of the participants was unbiased even on the following day. As the sweltering heat of the noon increased in degree so did the number of participants, hour after hour. The cynosure for day two were events like Adhyayan, Chem-O-Quest, Robowars and Chem Charades. Chem-O-Quest, was the treasure hunt of the chemical department, by the chemical department but not for the chemical department and Chem Charades, witnessed participation in multitudes.

There was this event under RTDC, again called "Sam-adhan"-as the name itself manifests, the event caused you to exercise your brain while analysing a problem, portrayed in the form of a picture. The problems pelted at the participants were of the challenging sort but the solutions that these brainstormers clubbed these problems with, were incredible too!

As the day drew to a close Celesta '17 refused to give up to throw surprises on the way of the spectators. The closing ceremony was a treat to the eyes and the mind, with two very renowned dignitaries-Mr. Manish Jain and Mr. Rahul Singh-adorning the same. While the former happens to be working at "IUCAAScience Center" -a

research institute, aimed to increase public awareness and understanding of Science & Astronomy, the later turns out to be the Secretary Expenditure at Finance Department, Govt. of Bihar. As the seconds silently passed away, we knew it was close, the official proclamation of closing the two day long techfrenzy. The hardwork of a hundreds of students, put in by them day and night had yielded visible results so that with their heads held high and tears in their eyes, they finally wished Celesta'17 an official and a reluctant goodbye!

MoUs Signed in 2017-18

National Informatics Center (NIC)

IIT Patna has signed up a Memorandum of Understanding (MoU) with National Informatics Center (NIC). **This MoU was signed by Director, IIT Patna and Deputy Director General, Govt. of India, Dept. of Information Technology, National Informatics Centre, New Delhi on 02.03.2017.**

The purpose of this collaboration is to undertaking joint research, participation in seminars, workshops, colloquia, short term courses and other types of academic discussions, contributions to training programmes, conduct study tours, joint consultancy and research work, participation in research and internship for IIT Patna students at NIC Patna.

TUSUR University

IIT Patna has signed up a Memorandum of Understanding (MoU) with TUSUR University, with aims to promote academic cooperation and academic mobility of students, staff and researchers.**This MoU was signed by Director, IIT Patna and Professor Alexander Shelupanov, Rector, TUSUR University, Tomsk, Russia on 02.12.2017.**

The purpose of this Agreement is exchange of undergraduate and graduate students (internship or academic program), exchange of faculty and staff members, joint research and consultancy activities, participation in seminars and academic meetings, exchange of academic materials and other information and special short-term academic programs and projects.

Dublin City University (DCU)

IIT Patna has signed up a Letter of Intent (LOI) with Dublin City University, with the aim of furthering research collaboration and student & staff exchange. **This MoU was signed by Director, IIT Patna and Professor Andy Way, School of Computing, DCU on 07-12-2017**.

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.

Innopolis University

IIT Patna has signed up a Memorandum of Understanding (MoU) with Innopolis University, with aims to increase collaboration, cooperation and interaction for the further promotion and understanding of Computer Science and Information Technology.**This MoU was signed by Director, IIT Patna and Mr. Kirill Semenikhin, Director, Innopolis University, Innopolis City 420500, Russia on 06-02-2018.**

The purpose of this collaboration is to –Exchange of faculty members, researchers, students for lectures, visits, joint, experiments, implementation of other collaborative projects. Cooperative research projects to be carried out in selected fields agreed upon mutually; Exchange of publication and other academic research information of common interest, as availability and resources permit; Development of joint degree programs, special programs and/or internship; Organizing of events of common interest (including conferences, workshop etc.).

University of Denver

IIT Patna has signed up a Letter of Intent (LOI) with University of Denver, with the aim of furthering research collaboration and student & staff exchange in the field of Computer Science, Electrical & Computer Engineering and Mechanical & Material Engineering. **This LOI was signed by Dr. Probir Saha, Associate Dean Resource, IIT Patna and Professor JB Holston, Dean, Ritchie School, University of Denver on 20-02-2018**.

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 fields of Computer Science, Electrical & Computer Engineering and Mechanical & Material Engineering. Ritchie School recognizes the benefits to be derived from increased collaboration, cooperation and interaction for further promotion and understanding of these areas of engineering.

Statistical Information

(A) Admission to Undergraduate Students

Admission to B.Tech. at IIT Patna were made through Joint Entrance Examination held in May, 2017. A department wise and category wise breakup of the students admitted to IIT Patna for the academic session 2017-18 is given below:

Students admitted through JEE 2017 in IIT Patna:

Course	Gen	OBC	PD	SC	ST	Grand Total
Computer Science & Engineering	27	14	2	8	4	55
Electrical Engineering	26	14	1	9	4	54
Mechanical Engineering	27	15	1	8	4	55
Chemical Science and Technology	13	8	1	4	1	27
Civil and Infrastructure Engineering	14	7	1	4	2	28
						219

Branch-wise list of students who enrolled for B.Tech at IIT Patna for the academic session 2017-18 is given below:

(I) Computer Science & Engineering:

Roll No.	Candidate Name	Gender	Category
1701CS01	ADARSH KUMAR CHAUDHARY	Male	SC
1701CS02	AJEET KUMAR	Male	OBC-NCL
1701CS03	AKSHAT JAIN	Male	General
1701CS04	AMIT PRIYANKAR	Male	OBC-NCL
1701CS05	ANKIT KUMAR	Male	SC
1701CS06	ANKIT SINGH	Male	General
1701CS07	ANKUR DUBEY	Male	General
1701CS08	ANUBHAV	Male	General
1701CS09	ANUJ SHASTRI	Male	General
1701CS10	ARSH MAHAJAN	Male	General
1701CS11	ARYA DAS	Male	General
1701CS12	ASUTOSH SWAIN	Male	OBC-NCL
1701CS13	ATUL UPADHYAY	Male	General
1701CS14	BHOLA KUMAR	Male	SC
1701CS15	BOPPANA DHANVANTH	Male	General
1701CS16	CHANDAN KUMAR	Male	OBC-NCL
1701CS17	DEEPANJAN DATTA	Male	General
1701CS18	DHEERAJ KUMAR	Male	SC
1701CS19	DIKSHA BANSAL	Female	General
1701CS20	DIVYANSHU N SINGH	Male	SC
1701CS21	GAURAV KUMAR	Male	OBC-NCL
1701CS22	GOPUGARI BADRINATH REDDY	Male	General
1701CS23	GURRAMKONDA HIMA SAGAR	Male	ST
1701CS24	KANAV GHAI	Male	General
1701CS25	KAPIL GUPTA	Male	General
1701CS26	MANAVJEET GUPTA	Male	OBC-NCL
1701CS27	MAYANK	Male	General
1701CS28	MOHIT KISHORE	Male	General
1701CS29	NAYAN RAJU THULKAR	Male	SC

Roll No.	Candidate Name	Gender	Category
1701CS30	NENAVATH PRABHU	Male	ST
1701CS31	NIHAL KUMAR KHARWAR	Male	ST
1701CS32	NIKHIL NAINAN GEORGE	Male	General
1701CS33	PIYUSH RAMSHARAN CHAUHAN	Male	OBC-NCL
1701CS34	PRADUMAN	Male	General
1701CS35	PRIYANSHU NANDAN	Male	OBC-NCL
1701CS36	RAHUL GROVER	Male	General
1701CS37	RAHUL KUMAR	Male	OBC-NCL
1701CS38	RAHUL PANDEY	Male	General
1701CS39	RAVI KISHAN	Male	General
1701CS40	RITU RAJ	Male	OBC-NCL
1701CS41	RIZWAN KHAN	Male	OBC-NCL
1701CS42	ROHIT KUMAR	Male	ST
1701CS43	ROHIT YADAV	Male	OBC-NCL
1701CS44	SHASHI RANJAN	Male	OBC-NCL
1701CS45	SHEETAL GUPTA	Male	General
1701CS46	SHIVANSH SHUKLA	Male	General
1701CS47	SHREYASH VILAS GEDKAR	Male	SC
1701CS48	SHUBHANKAR AMITABH	Male	General
1701CS49	SNIGDH SINHA	Male	General
1701CS50	SUNNY SINGH	Male	General
1701CS51	VAIBHAV GAJBHIYE	Male	SC
1701CS52	VATSAL SINGHAL	Male	General
1701CS53	VIJIGIRI VRUSHANK VARMA	Male	OBC-NCL
1701CS54	VINNAKOTA SAI SUJEETH	Male	General
1701CS55	VIVEK KUMAR SHAW	Male	OBC-NCL

(II) Electrical Engineering:

Roll No.	Candidate Name	Gender	Category
1701EE01	ABHIPRAY SINGH	Male	General
1701EE02	ADDULA SAKETH REDDY	Male	General
1701EE03	ADITYA GUPTA	Male	General
1701EE04	ADITYA RANJAN	Male	OBC-NCL
1701EE05	ADITYA RAO	Male	SC
1701EE06	ADUPA SRI RANGANADH	Male	OBC-NCL
1701EE07	AMGOTH MISHANLAL	Male	ST
1701EE08	ANIKET KUMAR	Male	General
1701EE09	ANSHUMAN DWIVEDI	Male	General
1701EE10	ASHISH	Male	SC
1701EE11	AVINASH SINGH	Male	SC
1701EE12	BOMMERA NIKHIL	Male	OBC-NCL
1701EE13	GUDE VIGNESH KUMAR	Male	OBC-NCL
1701EE14	HITVARDHAN	Male	General
1701EE15	JAY SHANKAR PANDIT	Male	OBC-NCL
1701EE16	JAYESH GUPTA	Male	General
1701EE17	KARHAD RAMAN VIJAYRAO	Male	General
1701EE19	MADHAV MANISH	Male	General
1701EE20	MANOJ KUMAR	Male	General
1701EE21	MD AZAM	Male	General
1701EE22	MUDASSIR SARWAR	Male	General
1701EE23	NANDAN RAJENDRA SHAH	Male	General

Roll No.	Candidate Name	Gender	Category
1701EE24	NARENDRA MEENA	Male	ST
1701EE25	NAVEEN KUMAR RATHI	Male	SC
1701EE26	NEERAJ KUMAR MEENA	Male	ST
1701EE27	NELAPUDI SANDEEP	Male	SC
1701EE28	NIKHIL BHARATI	Male	SC
1701EE29	NITIN YADAV	Male	OBC-NCL
1701EE30	PEDADA SREE HARSHA	Male	OBC-NCL
1701EE31	PIYUSH TIWARY	Male	General
1701EE32	PRATEEK KUMAR RAI	Male	General
1701EE33	PRIYESH RANJAN	Male	General
1701EE34	RACHUMALLU YASWANT	Male	General
1701EE35	RAGHU VAMSI VEERAPANENI	Male	General
1701EE36	RAHUL ANAND	Male	OBC-NCL
1701EE37	RAJESHWAR OJHA	Male	OBC-NCL
1701EE38	RAPELLI RAMA KRISHNA	Male	OBC-NCL
1701EE39	RISHAB KUMAR	Male	General
1701EE40	ROHAN KUMAR	Male	General
1701EE41	ROHIT SHYAMKANT CHAUDHARI	Male	General
1701EE42	SADULA NIRANJAN REDDY	Male	General
1701EE43	SAURABH SINGH	Male	SC
1701EE44	SHAIK SHADIQ	Male	General
1701EE45	SHUBHAM SINGH	Male	General
1701EE46	SHUBHAM SWARAJ	Male	OBC-NCL
1701EE47	SUBHAM MONDAL	Male	SC
1701EE48	SUMIT SOURABH	Male	OBC-NCL
1701EE49	SWADHA PANDEY	Female	General
1701EE50	TANURUHA MAJUMDAR	Male	General
1701EE51	UMANG JAIN	Male	General
1701EE52	UTKARSH	Male	SC
1701EE53	VAIBHAV VATSAL	Male	OBC-NCL
1701EE54	VIKAS SINGHAL	Male	ST
1701EE55	VIKRAM PATEL	Male	OBC-NCL

(III) Mechanical Engineering:

Roll No.	Candidate Name	Gender	Category
1701ME01	ABHIJEET MANYU	Male	SC
1701ME02	ABHISHEK KUMAR	Male	SC
1701ME03	AMAN DEEP	Male	General
1701ME04	AMAN DEEP	Male	OBC-NCL
1701ME05	AMAN MISHRA	Male	General
1701ME06	AMAR RAJ	Male	OBC-NCL
1701ME07	ANSHU KUMAR	Male	OBC-NCL
1701ME08	BADAVATH BHARATH CHANDRA	Male	ST
1701ME09	BANDARI TARUN	Male	SC
1701ME10	BANDARU VENKAT	Male	OBC-NCL
1701ME11	BANDI LOKNATH	Male	General
1701ME12	BANSAL KUMAR	Male	OBC-NCL
1701ME13	BHARADWAJ NAYANAR	Male	General
1701ME14	CHANDAN BHAT	Male	General
1701ME15	DEEP ROSHAN	Male	SC
1701ME16	GURPREET SINGH	Male	General

Roll No.	Candidate Name	Gender	Category
1701ME17	HARSH JINDAL	Male	General
1701ME18	HARSHIT SINGH	Male	General
1701ME19	HARSHITH JAYA SUNDAR UPPADA	Male	SC
1701ME20	IMANDI KANAKA MARKANDEYA VENU GOPAL	Male	OBC-NCL
1701ME21	KARTIK SINGH	Male	SC
1701ME22	KOMARA DEVI CHARAN	Male	OBC-NCL
1701ME23	KOSHYARI ANSHUL DEVENDRA	Male	General
1701ME24	KSHITIJ JAIN	Male	General
1701ME25	MALLAVARAPU TARUN REDDY	Male	General
1701ME26	MUKESH RAYPURIYA	Male	SC
1701ME27	PATIL VAIBHAV RAJARAM	Male	General
1701ME28	PRANIL JAYANT KESARALIKAR	Male	General
1701ME29	PRATEEK	Male	OBC-NCL
1701ME30	RAKSHIT BHATT	Male	General
1701ME31	RATHOD SRINIVAS	Male	ST
1701ME33	RITESH KUMAR	Male	SC
1701ME34	ROHAN J ADITYA	Male	General
1701ME35	ROHIT DUTTA	Male	General
1701ME36	ROUSHAN KUMAR	Male	OBC-NCL
1701ME37	SACHIN PANDEY	Male	General
1701ME38	SAHIL AGGARWAL	Male	General
1701ME39	SAIF AHMAD	Male	General
1701ME40	SHARIQUE NOMANI	Male	General
1701ME41	SHASHANK SHREYASKAR	Male	OBC-NCL
1701ME42	SHIVAM KUMAR	Male	General
1701ME43	SHREYAS SANJAY TAWARE	Male	General
1701ME44	SHRISH CHANDRA SHARMA	Male	General
1701ME45	SHUBHAM CHOUKSEY	Male	OBC-NCL
1701ME46	SHUBHAM PATHAK	Male	General
1701ME47	SUDHIR YADAV	Male	OBC-NCL
1701ME48	SUJIT JUSTINE BARWA	Male	ST
1701ME49	TEJAS GOYAL	Male	General
1701ME50	UJJWAL KUMAR	Male	OBC-NCL
1701ME51	VAIBHAV GUPTA	Male	OBC-NCL
1701ME52	VAIBHAV PANDEY	Male	General
1701ME53	VELAMALA BHARATH	Male	OBC-NCL
1701ME54	VIBHOR UPADHYAYA	Male	General
1701ME55	VIJENDRA MEENA	Male	ST
1701ME57	RAJKUMAR YADAV	Male	OBC-NCL

(IV) Civil and Environmental Engineering:

Roll No.	Candidate Name	Gender	Category
1701CE01	ABHAY KUMAR	Male	General
1701CE02	AJAY	Male	SC
1701CE03	AMAN KUMAR	Male	OBC-NCL
1701CE04	ANUJ KUMAR	Male	OBC-NCL
1701CE05	CHIDARA NAGAMANIKANTA SAI	Male	General
1701CE06	DAKSH BHATNAGAR	Male	General
1701CE07	DHARMENDRA KUMAR GURJAR	Male	OBC-NCL
1701CE08	EKTA	Female	ST
1701CE09	GOPIKRISHNAN NAIR SURESH KUMAR	Male	General

Roll No.	Candidate Name	Gender	Category
1701CE10	JAGDISH KUMAR	Male	OBC-NCL
1701CE11	KAUSHAL KUMAR JANGIR	Male	OBC-NCL
1701CE12	KOUSHIK MONDOL	Male	SC
1701CE13	MANAS SINGH	Male	General
1701CE14	MD SAIFULLAH NASIM	Male	OBC-NCL
1701CE15	MOHD JAKIR	Male	General
1701CE16	NARENDRANATH GOGINENI	Male	General
1701CE17	NEERAJ PARALIYA	Male	ST
1701CE18	PAWAN TIWARI	Male	General
1701CE19	RAJEEV KUMAR TILAK	Male	SC
1701CE20	RAKESH RAUSHAN	Male	OBC-NCL
1701CE21	RAKSHIT MAHESHWARI	Male	General
1701CE22	SATYAM SINGH	Male	General
1701CE23	SHIRKE PRANAV VINAYAK	Male	General
1701CE24	SHIVAM PRAKASH	Male	SC
1701CE25	SHRISTI SHREYA SINGH	Female	General
1701CE26	VIKAS MISHRA	Male	General
1701CE27	VINEET MISHRA	Male	General
1701CE28	YASH RAWAL	Male	General

(IV) Chemical and Bio Chemical Engineering:

Roll No.	Candidate Name	Gender	Category
1701CB01	AASHAY HARSHIT	Male	ST
1701CB03	AFTAB AMEER MOHIDEEN	Male	General
1701CB04	ANUP PURANDAS ALONE	Male	SC
1701CB05	ASHISH SANTHOSH JACOB	Male	General
1701CB06	ATHARVA RAJESH EKATPURE+	Male	OBC-NCL
1701CB07	DIVYA VERMA	Female	SC
1701CB08	GAURAV MISHRA	Male	General
1701CB09	HIMANSHU GUPTA	Male	General
1701CB10	IRAGARAJU BHAVANI SUSMITHA	Female	OBC-NCL
1701CB11	KETAN BATHOM	Male	General
1701CB12	MAYANK SINGH	Male	OBC-NCL
1701CB13	MRIDUL SRIVASTAVA	Male	General
1701CB14	MUPPALLA YASWANTH CHOWDARY	Male	General
1701CB15	NALLAM SAI NIRANJAN	Male	General
1701CB16	NAMATHABAD SANDEEP KUMAR	Male	OBC-NCL
1701CB17	POTHAPRAGADA VENKATA SG KRISHNA SRIKAR	Male	General
1701CB18	PRAKASH SINGH	Male	General
1701CB19	PRANSHU CHANDANI	Male	General
1701CB20	PRATHIPATI NITHISH	Male	SC
1701CB21	PRIYANSH SINGH RAO	Male	OBC-NCL
1701CB22	RIYA RANJAN	Female	SC
1701CB23	ROHIT KUMAR	Male	OBC-NCL
1701CB24	SAURABH GUPTA	Male	OBC-NCL
1701CB25	SAURODEEP DAS	Male	General
1701CB26	VIKASH PRASAD SONI	Male	OBC-NCL
1701CB27	VIVEK GARG	Male	General
1701CB28	RUPESH NEEKHRA	Male	General

(B) Admission to Postgraduate Students (M.Tech)

Admission to M.Tech Courses at IIT Patna were made through GATE score (70% weightage) and Personal Interview (30% weightage) in May, 2017. A department wise and category wise breakup of the students admitted to IIT Patna for the academic session 2017-18 is given below:

Students admitted in M.Tech in 2016-17 in IIT Patna:

Course/Specialization	Category					Grand Total
	GEN	OBC	PD	SC	ST	
CIVIL & INFRASTURUCTURE ENGINEERING	5	0	0	1	0	6
COMMUNICATION SYSTEM & ENGINEERING	4	3	0	1	0	8
COMPUTER SCIENCE & ENGINEERING	8	4	0	3	1	16
MATERIAL SCIENCE & ENGINEERING	6	2	0	1	0	9
MATHEMATICS & COMPUTING	8	4	0	1	0	13
MECHANICAL ENGINEERING	7	4	0	3	0	14
MECHATRONICS	7	5	0	2	1	15
NANOSCIENCE AND TECHNOLOGY	4	2	0	1	0	7
VLSI & EMBEDDED SYSTEMS	5	1	0	0	0	6
Grand Total	**54**	**25**	**0**	**13**	**2**	**94**

Branch-wise list of students who enrolled for M.Tech at IIT Patna for the academic session 2017-18 is given below:

(I) Civil & Infrastructure Engineering:

Roll No.	Candidate Name	Gender	Category
1711CE02	ANKESH KUMAR	Male	General
1711CE03	KUMAR ANJNEYA	Male	General
1711CE04	MAHEEP TIWARI	Male	General
1711CE09	SHASHI PRAKASH	Male	General
1711CE10	TANMOY DAS	Male	SC
1711CE11	YASH GUPTA	Male	General

(II) Communication System & Engineering:

Roll No.	Candidate Name	Gender	Category
1711EE01	AKSHAY JAISWAL	Male	OBC NCL
1711EE04	BRIJ MOHAN KUMAR	Male	OBC NCL
1711EE05	PINKY	Female	OBC NCL
1711EE07	RAGHIB AKHTER	Male	General
1711EE08	RISHI CHANDRA	Male	SC
1711EE09	SHEETAL JAIN	Female	General
1711EE11	SUSHMITA	Female	General
1711EE13	ZUFISHAN HAQUE	Female	General

(III) Computer Science & Engineering:

Roll No.	Candidate Name	Gender	Category
1711CS01	AAKASH	Male	General
1711CS02	ABHIJEET RAVINDRA KHARAT	Male	SC
1711CS03	ANKIT KUMAR	Male	General
1711CS04	ASHISH KUMAR RANJAN	Male	OBC NCL
1711CS05	BRIJENDRA KUMAR SUMAN	Male	SC
1711CS06	KODIDASU MURALI KUMAR	Male	OBC NCL
1711CS07	KUMAR SHIKHAR DEEP	Male	General
1711CS08	KUMARI POONAM	Female	SC
1711CS09	MAINAK MAULIK	Male	General
1711CS10	MANISH KUMAR KAUSHIK	Male	General
1711CS11	NISHA SINGH CHAUHAN	Female	OBC NCL
1711CS12	SANDIP KISHORE	Male	General
1711CS13	SANDIP PATEL	Male	ST
1711CS15	SUNNY YADAV	Male	OBC NCL
1711CS16	SWAGARIKA JAHARLAL GIRI	Female	General
1711CS17	WALIULLAH AL MAMUN	Male	General

(IV) Materials Science & Engineering:

Roll No.	Candidate Name	Gender	Category
1711MS01	AKASH YADAV	Male	OBC NCL
1711MS02	BIHAR GAURAV	Male	SC
1711MS03	DURGA CHARAN MISHRA	Male	General
1711MS06	RAVI KUMAR SINGH	Male	General
1711MS07	RISHI RAJ	Male	General
1711MS08	ROHIT GUPTA	Male	General
1711MS09	SHRESHTHA RANJAN	Male	OBC NCL
1711MS10	VISHNU R NAIR	Male	General
1711MS11	RAKESH KUMAR	Male	General

(V) Mathematics & Computing:

Roll No.	Candidate Name	Gender	Category
1711MC01	ABHISHEK DIXIT	Male	General
1711MC02	ARJUN ROY	Male	General
1711MC04	BHUVNESH MAHAJAN	Male	OBC NCL
1711MC05	CHANDAN KUMAR	Male	SC
1711MC06	DIPAK KUMAR BHUNIA	Male	General
1711MC07	HIMANSHU SHEKHAR	Male	General
1711MC08	KESHAV RANJAN	Male	OBC NCL
1711MC09	MD MAHATAB UDDIN MOLLA	Male	OBC NCL
1711MC10	NIKHILANAND ARYA	Male	OBC NCL
1711MC11	SAUMAJIT SAHA	Male	General
1711MC12	SHIVESH KUMAR ROY	Male	General
1711MC13	SUYASH	Female	General
1711MC14	SWATI	Female	General

(VI) Mechanical Engineering:

Roll No.	Candidate Name	Gender	Category
1711ME01	AJIT KUMAR TANTI	Male	SC
1711ME02	AKASH RAWAT	Male	General
1711ME04	AMIT CHAUDHARY	Male	SC
1711ME05	ANUPAM CHAUDHARY	Male	OBC NCL
1711ME06	ANURAG KUMAR	Male	OBC NCL
1711ME07	ASHUTOSH KUMAWAT	Male	General
1711ME09	DURGESH RANJAN	Male	General
1711ME11	HRITHIK CHANDRA	Male	SC
1711ME12	INDRAJEET KUMAR	Male	OBC NCL
1711ME14	NITISH KUMAR	Male	General
1711ME16	SACHIN SINGH SOLANKI	Male	General
1711ME18	SHREYANSH SHEKHAR	Male	General
1711ME19	SURYA PRAKASH SINGH	Male	OBC NCL
1711ME20	UTTAM KUMAR	Male	General

(VII) Mechatronics:

Roll No.	Candidate Name	Gender	Category
1711MT01	ABHIJITH V NAIR	Male	General
1711MT02	AMIT KUMAR	Male	OBC NCL
1711MT03	ANDHARIKAR UTKARSH NITIN	Male	General
1711MT04	ARJUN V	Male	General
1711MT06	BEERAJ KUMAR	Male	General
1711MT07	DEEPAK KUMAR MEHTA	Male	OBC NCL
1711MT08	NIKHIL SHARMA	MALE	OBC NCL
1711MT09	RAHUL RANJAN BHARTI	Male	OBC NCL
1711MT10	RAJEEV GAUTAM	Male	SC
1711MT11	SHUBHAM PATHAK	Male	General
1711MT12	SOURAV KUMAR	Male	OBC NCL
1711MT13	SUMAN KUMAR SINGH	MALE	General
1711MT14	SUSHRUT SURESH LINGAYAT	Male	SC
1711MT15	VAGEESH KUMAR	Male	ST
1711MT16	VIVEK KUMAR SINGH	Male	General

(VIII) Nanoscience & Technology:

Roll No.	Candidate Name	Gender	Category
1711NT02	NIKHIL ANAND	Male	General
1711NT03	NIKHIL DILIP KULKARNI	Male	General
1711NT04	RABINDRANATH SARANGI	Male	General
1711NT05	RAHUL KUMAR	Male	OBC NCL
1711NT06	RAJU KUMAR SHARMA	Male	OBC NCL
1711NT07	ROHIT	Male	General
1711NT10	VIVEK KUMAR VIHANGAM	Male	SC

(IX) VLSI & Embedded Systems :

Roll No.	Candidate Name	Gender	Category
1711EE14	ABHILASH SRIVASTAVA	Male	General
1711EE15	Akash Vaibhav	Male	General
1711EE16	BHAWENDRA KUMAR JHA	Male	General
1711EE17	DISHAV BOHARE	Male	General
1711EE18	RAUSHAN RAJ	Male	OBC NCL
1711EE19	RISHABH SIRVASTAVA	Male	General

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

Admission to M.Sc. Courses at IIT Patna were made through JAM score in June/July, 2017. A department wise and category wise breakup of the students admitted to IIT Patna for the academic session 2017-18 is given below:

Students admitted in M.Sc. in 2017-18 in IIT Patna:

Course/Specialization	Category					Grand Total
	GEN	OBC	PD	SC	ST	
MATHEMATICS	4	3	0	1	1	9
PHYSICS	3	4	0	2	0	9
CHEMISTRY	4	3	0	0	1	8
Grand Total	**11**	**10**	**0**	**3**	**2**	**26**

Branch-wise list of students who enrolled for M.Sc. at IIT Patna for the academic session 2017-18 is given below:

(I) Mathematics:

Roll No.	Candidate Name	Gender	Category
1712MA01	BINAY SAHU	Male	OBC
1712MA02	DAMINI SIDOLA	Female	GEN
1712MA03	LABANI HALDER	Female	SC
1712MA04	MANSI	Female	GEN
1712MA06	RAHUL KUMAR MEENA	Male	ST
1712MA07	RISHI RAJ	Male	OBC
1712MA08	ROHIT KUMAR SHARMA	Male	GEN
1712MA09	SHRIDHAR KUMAR	Male	GEN
1712MA10	SUMAN KASWAN	Female	OBC

(II) Physics:

Roll No.	Candidate Name	Gender	Category
1712PH01	KOWSHICK MALLICK	Male	GEN
1712PH02	MANAVENDRA PRATAP SINGH	Male	GEN
1712PH03	PRABHAT RANJAN	Male	OBC
1712PH04	PUSPENDU BAR	Male	SC
1712PH05	RAJ KUMAR DAS	Male	SC
1712PH07	SAFIKUL ISLAM	Male	OBC
1712PH08	SONALI JANA	Female	GEN
1712PH09	VIJAY KUMAR	Male	OBC
1712PH10	VINEET KUMAR	Male	OBC

(III) Chemistry:

Roll No.	Candidate Name	Gender	Category
1712CH01	ALOK MAHATA	Male	OBC
1712CH02	ARCHITA MAITI	Female	GEN
1712CH03	BHARTI	Female	GEN
1712CH05	GAURAV KHATANA	Male	OBC
1712CH06	NIKUMONI DOLEY	Female	ST
1712CH07	PREETI JAIN	Female	GEN
1712CH08	SACHIN KUMAR	Male	OBC
1712CH09	SANTU GOSWAMI	Male	GEN

Students awarded Merit-Cum-Means (MCM) Scholarship

Under the Merit-Cum-Means (MCM) scheme, the following benefits are provided to the students:

(a) For **General & OBC** category students: Rs. 1,000/- per month for two semesters (8 months in a year) and Free Tuition Fee.

(b) For **SC & ST** category students: Free Messing (Dues of only basic menu), Exemption from Hostel Room Rent, Pocket allowance of Rs. 250/- per month.

Provided below are the details of the MCM scholarships awarded during FY 2017-18:

Batch	GEN+OBC	SC+ST	Total
2014 (B.Tech.)	39	7	46
2015 (B.Tech.)	39	7	46
2016 (B.Tech.)	17	2	19
2017 (B.Tech.)	16	1	17
2016 (M.Sc.)	4	3	7
2017 (M.Sc.)	5	4	9
Total	**120**	**24**	**144**

The following 128 undergraduate students (B.Tech. Programme) and 16 Postgraduate students (M.Sc. Programme) were selected for the award of the Merit-Cum-Means (MCM) scholarship in the academic year 2017-18 by the Institute:

ROLL NO.	NAME OF THE STUDENT
1401CS50	ALAN AIPE
1401ME37	SARTHAK RASTOGI
1401CS54	THIRUMALA REDDY MANOJ REDDY
1401CH20	SAURABH KUMAR
1401EE39	SHAILESH KUMAR KASHYAP
1401ME19	JATIN KALRA
1401CE17	SUBHASH I PATEL
1401CS38	RAJDEEP GUPTA
1401CH16	PRANJALI SHARMA
1401CS55	SATISH GUPTA
1401CS02	ABHISHEK JAISWAL
1401CE02	ABHINAV KUMAR
1401CE05	AKSHAY PATNI
1401ME15	HAROON RASHID
1401EE30	RAKESH KUMAR BIJARNIYA
1401CS48	VIPIN MAVI
1401ME28	MOHIT SHARMA
1401CS13	CHIRAG SONI
1401EE06	AMAN OMKER
1401EE26	PARAS MANI
1401CH10	LAKHAN AGGRAWAL

ROLL NO.	NAME OF THE STUDENT
1401CE23	SUNIL KUMAR
1401CE07	ANIL
1401ME45	SOURABH JAIN
1401CS22	LAXMAN KUMAR PRABHAKAR
1401ME41	SHIV JEE
1401CH02	AMIT KUMAR
1401CH03	ANKIT CHAHAL
1401ME36	SAI MANISH B
1401CH05	BHAGYA SHRI VERMA
1401ME16	HARSHIT AGRWAL
1401CS29	NEWTON KUMAR
1401EE23	MOHD ASAD
1401CE15	NANNAPANENI SRIMAAN
1401CH04	APOORVA SHRIVASTAVA
1401ME35	S VIJAY ANAND
1401ME48	POLISETTY VENKATA KISHORE BABU
1401CH07	DARAPU THARAKESHWARA REDDY
1401ME44	SHUBHAM SHUKLA
1401EE04	AKASH GOYAL
1401EE19	LOKESH KUMAR RAIGER
1401EE14	DESHRAJ MEENA

ROLL NO.	NAME OF THE STUDENT
1401CH22	SHIVAM KUMAR SUTRAKAR
1401EE18	HET RAM MEENA
1401ME05	ANURAG MEENA
1401EE03	ABHISHEK MEENA
1501CS11	ASHIISH RAJ
1501EE43	SHIVAM TIWARI
1501ME31	ANIKET LAXMIKANT KULKARNI
1501ME51	SAURABH DUBEY
1501CE20	SUMIT KUMAR NANDAN
1501EE49	UMESH KUMAR
1501CE10	NIPOON GUPTA
1501ME52	VISHAL RAWAT
1501CS29	MOOLCHANDRA MRIDUL
1501CS41	SAIKAT SARKAR
1501ME06	ALOK BARANWAL
1501CE17	SHIVPREET SHARMA
1501CE02	AMAN KUMAR
1501CS52	SHASHWAT TIWARI
1501CH03	AKHIL JAIN
1501ME11	ASHISH KUMAR
1501ME02	ABHISHEK MAURYA
1501CE04	G VENKATA SAI SWAROOP
1501CH06	ARPIT KUMAR
1501CS35	PRAVEEN SINGH DHAKED
1501CS13	ASHUTOSH DUBEY
1501CS46	THATIPARTHI CHAITHANYA REDDY
1501ME05	ALAPAN KAR
1501ME12	AUGUST DUBEY
1501CE09	MOHIT SINGH
1501CS03	ABHISHEK KUMAR
1501CH23	VIJAY YADAV
1501ME19	CHINTHA TEJESWAR REDDY
1501ME07	AMRIT RAJ
1501CS15	AVINASH KUMAR
1501ME13	AVINASH KUMAR
1501CH12	DIVYANSHU KHANDELWAL
1501CS39	SAHIL MANSOORI
1501ME35	NAGUDALA MANOJ KUMAR
1501ME23	GIRIJESH TIRPATHI
1501EE13	B.SHIVA KARTHIK REDDY
1501ME10	ASHISH KUMAR
1501ME50	ABHISHEK TALELE
1501CH04	AMAN KUMAR
1501ME04	ABHISHEK SINGH
1501CH11	BOTCHA VIDYA SAGAR
1501EE44	SOUMIK SIKDER
1501CS25	KORRA RAVINDER
1501CS07	ANAND RAJ
1501CS04	ABHISHEK KUMAR
1501ME26	JANJARLA RAJASHEKAR
1601CS51	MAYANK WADHWANI

ROLL NO.	NAME OF THE STUDENT
1601CS33	PRAKASH KUMAR
1601CE01	ABHINAV GYAN
1601EE43	SHAGUGTA NAAZ
1601CE09	ASHUTOSH KUMAR SINGH
1601EE27	NILENDU SHUBHAM
1601CE24	SURAJ KUMAR SINGH
1601CE10	BANKEY BIHARI JHA
1601EE05	AMAN JHA
1601EE17	GAURAV KATARIA
1601CE07	AMIT SINGH
1601ME26	RAHUL KUMAR
1601CS36	RAJ MANI
1601ME33	ROSHAN KUMAR GUPTA
1601ME41	SURAJ KUMAR JHA
1601CE08	ANKIT RAI
1601CE13	MAYANK KUMAR SINGHAL
1601CB18	SACHIN
1601ME28	RAKESH BAIRWA
1701EE51	UMANG JAIN
1701ME05	AMAN MISHRA
1701ME41	SHASHANK SHREYASKAR
1701CS53	VIJIGIRI VRUSHANK VARMA
1701ME37	SACHIN PANDEY
1701ME39	SAIF AHMAD
1701EE34	R YASWANT
1701EE19	MADHAV MANISH
1701CE15	MD. JAKIR
1701CE11	KAUSHAL KUMAR JANGIR
1701CS37	RAHUL KUMAR
1701ME16	GURPREET SINGH
1701CS19	DIKSHA BANSAL
1701CS40	RITU RAJ
1701ME47	SUDHIR YADAV
1701ME49	TEJAS GOYAL
1701ME02	ABHISHEK KUMAR
1612PH09	ROHIT KUMAR
1612MA08	SUMAN KUMARI
1612CH06	NITESH KUMAR
1612CH08	RAJKUMAR SAHOO
1612MA10	VAISHALY VERMA
1612MA07	SNEHAMOY KABIRAJ
1612CH01	ARGHA SAHA
1712MA04	MANSI
1712CH01	ALOK MAHATA
1712PH01	KOWSHICK MALLICK
1712MA09	SHRIDHAR KUMAR
1712PH08	SONALI JANA
1712MA03	LABANI HALDER
1712PH05	RAJ KUMAR DAS
1712PH04	PUSPENDU BAR
1712MA06	RAHUL KUMAR MEENA

Students Enrolled in Undergraduate Courses

The Table below gives the total number of students in B.Tech. Course (Up to 31.3.2018):

Batch	Gen	ST	SC	OBC	PD	Total
2013	0	1	0	2	0	3
2014	88	15	26	50	3	182
2015	92	13	30	50	3	188
2016	96	14	29	53	1	193
2017	107	15	33	58	6	219

Statement of Results (Undergraduate)

Following table shows the summary of the results of the undergraduate students at IIT Patna in the year April 2017 to March 2018 (up to end semester examination Nov, 2017):

Years		CSE	EE	ME	CE	CH	All Dept.
4th Year	Total	55	44	45	18	20	182
	Pass	53	38	41	18	19	169
	Fail	2	6	4	0	1	13
3rd Year	Total	55	43	49	21	20	188
	Pass	52	42	45	20	19	178
	Fail	3	1	4	1	1	10
2nd Year	Total	55	49	46	23	20	193
	Pass	53	46	42	23	18	182
	Fail	2	3	4	0	2	11
1st Year	Total	55	54	55	28	27	219
	Pass	53	54	53	25	26	211
	Fail	2	0	2	3	1	8
All Years (Registered)	Total	220	190	195	90	87	782
	Pass	211	180	181	86	82	740
	Fail	9	10	14	4	5	42
On Leave/ Not Registered		0	0	0	0	0	0

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

Statement of Results (Postgraduate)

Following table shows the summary of the results of the Postgraduate students (M.Tech.) at IIT Patna in the FY 2017-18:

Years		Civil & Infra	Computer Sc	Communication Systems	Maths & Comp	Mechanical	Material Sc	Mechatronics	Nano Sc & Tech	VLSI & Embedded Systems	All Dept.
1st Year	Total	6	16	8	13	14	9	15	7	6	94
	Pass	4	15	6	12	12	9	14	7	6	85
	Fail/ Incomplete	2	1	2	1	2	0	1	0	0	9
2nd Year	Total	11	12	11	9	10	9	14	10	NA	86
	Pass	10	10	11	8	3	9	11	7	NA	69
	Fail/ Incomplete	1	2	0	1	7	0	3	3	NA	17
All Years (Registered)	Total	17	28	19	22	24	18	29	17	6	180
	Pass	14	25	17	20	15	18	25	14	6	154
	Fail/ Incomplete	3	3	2	2	9	0	4	3	0	26
On Leave/Not Registered		0	0	0	0	0	0	0	0	0	0

Fail means one or more subject failure or CPI less than 06

(A) Following table shows the summary of the results of the Postgraduate students (M.Sc.) at IIT Patna in the FY2017-18:

Years		Mathematics	Physics	Chemistry	All Dept.
1st Year	Total	9	9	8	26
	Pass	9	9	8	26
	Fail/ Incomplete	0	0	0	0
2nd Year	Total	9	8	5	22
	Pass	9	8	5	22
	Fail/ Incomplete	0	0	0	0
On Leave/Not Registered		0	0	0	0
Grand Total		**18**	**17**	**13**	**48**

List of Research Scholars Enrolled for the PhD Degree

The table below represents the number of research scholars in various departments as of FY 2017-18:

Year of admission	CBE	CEE	CSE	EE	ME	MSE	CHE	MA	PHY	HSS	TOTAL
2010-11	0	0	1	0	0	0	0	1	0	0	2
2011-12	0	0	3	0	0	0	0	0	0	0	3
2012-13	0	0	1	2	0	0	0	1	1	3	8
2013-14	0	3	9	9	7	3	3	3	6	3	46
2014-15	1	1	6	13	10	1	4	5	4	1	46
2015-16	3	3	17	10	12	4	8	11	4	8	80
2016-17	2	5	12	19	22	0	9	8	16	12	105
2017-18	5	8	9	13	13	3	11	11	11	9	93
TOTAL	**11**	**20**	**58**	**66**	**64**	**11**	**35**	**40**	**42**	**36**	**385**

List of Research Scholars Enrolled in Acadamic Year 2017-18

Roll No.	Name of Student
1721CB04	NIWESH OJHA
1721CE02	KOTESWARAARAO JADDA
1721CE04	MD HANZLA
1721CE05	GUNDAVARAM DINESH
1721CE06	SAURABH SUMAN
1721CE07	DATTATREYA TRIPATHY
1721CH03	SAPTARSHI MANDAL
1721CH04	SHIKHA PRIYADARSHINI
1721CH08	SOURAV MAJUMDER
1721CH05	AKSHOY JAMADAR
1721CH06	MOHD AVAIS
1721CH09	KORUTLA SRIKANTH
1721CH11	VIKAS DUBEY
1721CS08	DIPANJYOTI PAUL
1721CS09	NEERAJ
1721CS10	RAMESH KUMAR THAKUR
1721CS11	SOURAJIT BEHERA
1721CS12	SASWATA ROY
1721CS13	KAMAL KUMAR GUPTA
1721CS07	ANURAG CHOUBEY
1721EE12	SURYAPRAKASH
1721EE13	SANJEET KUMAR
1721EE15	ADHISHREE
1721EE16	MD MUZAFFAR SABA
1721EE17	ABHISHEK MANI SHUKLA
1721EE18	CHAUDHARI MAHESH SHAMRAO
1721HS05	AJIT ANAND
1721HS06	ADITI
1721HS07	MADHU MONJURI GOHAIN
1721HS08	PUJA GUPTA
1721HS09	MRITYUNJAY KUMAR
1721HS10	AYESHA FATMA
1721MA03	SUBRATA RANA
1721MA04	RAJKARAN KORI
1721MA06	RAMEN GHOSH
1721MA05	SAYANTAN MAITY
1721MA07	UJJWAL PRATAP
1721MA09	TANUJA DAS
1721MA10	NAZIA URUS
1721ME07	DEEP SINGH THAKUR
1721ME09	MD ANWAR ALI ANSHARI
1721ME11	ANURAG KUMAR
1721ME12	ASHUTOSH RAJPUT
1721ME13	ANOOP KUMAR SINHA
1721ME05	DEEPA GUPTA (VIS)
1721MS02	MD AMINUL ISLAM
1721MS04	HAREKRISHNA PANIGRAHI

Roll No.	Name of Student
1721MS05	ADITYA ARUN
1721PH05	PRAVEEN KUMAR
1721PH06	REBTI BHUSHAN
1721PH07	SHANTANU MAJUMDER
1721PH08	SHIVANI RANI
1721PH09	GAURAV PANDEY
1721PH10	LEEPSA MISHRA
1721PH12	SUMIT CHAHAL
1721PH13	MURLI KUMAR MANGLAM
1721PH16	SACHIN SINGH
1821CB03	GAURAV SHUKLA
1821CB01	AKASKSHA PATHAK
1821CB04	NITISH KUMAR SINGH
1821CB02	AMIR KHURID
1821CE04	SUMIT KUMAR
1821CE03	SHANTI SWAROOP
1821CE05	TIRTHA SATHI
1821CH03	PRABHAS BHAUMICK
1821CH01	AKHTAR ALAM
1821CH02	NOOHUL ALAM
1821CH04	SHIVAM DUBEY
1821CS01	FAZAIL AMIN
1821CS03	SANTOSH KUMAR MISHRA
1821EE08	SUHUBHAM ANAND
1821EE02	BRAJESH KUMAR
1821EE07	RAM PRAKASH
1821EE04	P SURYA TEJA NAGA SRINIVAS
1821EE06	RAGHVENDRA
1821EE03	HEMANT VERMA
1821EE01	ARJUN ABHISHEK
1821HS03	SWATI TIWARI
1821HS01	MADHU LATA
1821HS02	RASHMI
1821MA01	AKRITI SRIVASTAVA
1821MA04	KAMAL SANTRA
1821MA02	JAYAKANTA BEHERA
1821MA05	SHIKHA PATEL
1821MA03	JUHI JAISWAL
1821ME07	RAHUL KESHARWANI
1821ME06	PUJA GHOSAL
1821ME08	SWETA SAROJ
1821ME04	MADHAV RATURI
1821ME03	KAMLESH KUMAR
1821ME02	AKASH PRIY
1821ME05	MANDEEP
1821PH02	NISHANT KUMAR

Infrastructure Development at IIT Patna

Phase- II

Under the revised sanction from MHRD, IIT P has decided to construct various facilities under Phase-II. The entire Phase-II work had been entrusted to CPWD. The following buildings will be constructed under Phase-II:

1) Academic Buildings, G+5, 2 numbers
2) Workshops 3 numbers.
3) Central Lecture hall 1 number.
4) Central Library
5) Guest House, G +2 (Double bed room 48, single bed room 8 and suite 9)
6) Girls Hostel for 232 students capacity.
7) Boys Hostel for 950 students capacity.
8) Auditorium, 2000 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(Food Court) balance part
15) Services like substation, street lighting, WTP, STP, Fire fighting system, water supply distribution network etc.

The work has been awarded to M/S NCC Limited on EPC (Engineering Procurement and Construction) mode. M/s Suresh Goel and Associates has been engaged as an Architectural firm by NCC for the EPC contract. Almost all concept drawings have been finalized after discussing with stakeholders.

Phase-I Part-2:

Project Management Consultant for this part is Engineers India Limited (EIL). The contractor is M/s Kamladitya Construction Private Limited. The Status of ongoing works under EIL is as follows:

Girls Hostel (Capacity: 200) 90% complete
(Painting, fittings and fixing in progress)

Boys Hostel (Capacity: 450 capacity)45% complete
(RCC of 6th and 7thfloor is in progress)

Gymkhana: 35% complete (RCC work is in progress)

C type Quarters (Capacity: 56 units) 40% complete(RCC of 5th floor is in progress

In addition to above, the following works have also been entrusted to CPWD:

1) Sports facility
2) Swimming pool
3) Cycle stand with shades
4) Car parking's with shades etc
5) Wardrobe in existing Quarters
6) Six Bus Stops in campus

Accounts

FORM OF FINANCIAL STATEMENTS (CENTRAL HIGHER EDUCATIONAL. INSTITUTIONS)

NAME OF ENTITY: **INDIAN INSTITUTE OF TECHNOLOGY PATNA**

RECEIPTS AND PAYMENTS ACCOUNT FOR THE PERIOD/YEAR ENDED: 31ST MARCH 2018

Amount in Rupees

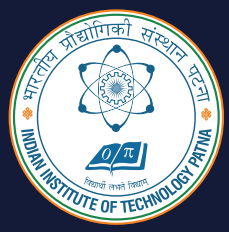
RECEIPTS	Current Year	Previous year	PAYMENTS	Current year	Previous Year
I. Opening Balances			**I. Expenses**		
a) Cash Balances			a) Establishment Expenses	322,939,256.00	218,864,377.00
b) Bank Balance			b) Academic Expenses	18,606,793.00	40,567,253.00
I. In Current accounts	66,244,941.00	326,753,097.85	c) Administrative Expenses	205,895,523.00	118,100,068.50
II. Savings accounts	174,320,090.50	3,951,895.00	d) Transportation Expenses	8,215,029.00	9,650,550.00
III. In deposit accounts	660,114,200.00	320,606,355.00	e) Repairs & Maintenance	44,590,779.00	33,565,702.00
II. Grants Received			f) Prior period expenses	2,695,894.00	4,670,593.00
			II. Payments against		
a) From Government of India- Capital	2,100,000,000.00	1,253,704,315.00	Earmarked/Endowment Funds		
- Revenue	326,000,000.00	341,972,000.00			
			III. Payments against Sponsored		
b) From State Government			Projects/Schemes		
			IV. Payments against Sponsored		
c) For other sources (details)			Fellowships/Scholarships	98,791,452.00	89,380,919.45
(Grants for capital & revenue exp/to be shown separately if available)			V. Investments and Deposits made		
III. Academic Receipts (Including Mess Fee)	88,527,180.00	81,404,278.00	a) Out of Earmarked /Endowments funds	81,417.00	81,230.00
IV. Receipts against					
Earmarked/Endowment Funds			b) Out of own funds (Investments - Others)		
V. Receipts against Sponsored					
Projects/Schemes			VI. Term Deposits with Scheduled Banks		
VI. Receipts against sponsored Fellowships			VII. Expenditure on Fixed Assets and		
and Scholarships		-	Capital Works - in - Progress		

A. O. Assistant Registrar (F&A) DR (F&A) Registrar Director

VII. Income on Invesments from			a) Fixed Assets	392,616,202.00	251,009,797.50
a) Earmarked/Endowment funds	74,490.27	81,230.00	b) Capital Works-in-Progress	571,487,212.00	212,641,637.00
b) Other investments			VIII. Other Payments including statutory Payments	114,594.68	68,126.90
VIII. Interest received on			IX. Refunds of Grants		
a) Bank Deposits	89,697,723.00	32,775,916.18	X. Deposits and Advances	545,806,723.73	498,784,455.18
b) Loans and advances			XI. Other Payments		
c) Savings Bank Accounts	10,096,097.00	2,653,711.00	**XII. Closing Balances**		
IX. Investments encashed			a) Cash in hand		
X. Term Deposits with Scheduled Banks encashed			**b) Bank balances**		
XI. Other Income (including Prior Period Income)	34,409,887.59	14,161,143.00	In Current Accounts	194,515,210.80	66,244,941.00
XII. Deposits and Advances	-	-	In Savings Accounts	28,976,005.56	174,320,090.50
			In Deposit Accounts	1,114,152,517.59	660,114,200.00
XIII. Miscellaneous Receipts including Statutory Receipts	-				
XIV. Any other Receipts					
TOTAL	**3,549,484,609.36**	**2,378,063,941.03**	**TOTAL**	**3,549,484,609.36**	**2,378,063,941.03**

A. O. Assistant Registrar (F&A) DR (F&A) Registrar Director

Important Notes



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