खम्मा घणी...!!

भारतीय प्रौद्योगिकी संस्थान जोधपुर

॥ त्वं ज्ञानमयो विज्ञानमयोऽसि ॥

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Khamma Ghani...!!

Indian Institute of Technology Jodhpur

शुभारम्भ!!

2018 के पहले पहर में भारतीय प्रौद्योगिकी संस्थान जोधपुर ने अपने स्थाई परिसर में स्थानांतरण के उपरान्त विभिन्न सुविधाओं का विस्तार किया। इस अवधि के दौरान संकाय सदस्यों द्वारा प्रस्तावित 7 नए प्रायोजित अनुसंधान परियोजनाओं को स्वीकृति भी मिली तथा संकाय सदस्यों द्वारा लिखे गए शोधपत्र विभिन्न प्रतिष्ठित जर्नल एवं अन्य प्रकाशनों में प्रकाशित हुए। इन में 76 जर्नल शोधपत्र, 13 प्रीप्रिंट, 13 कान्फ़रेस पेपर, 12 पुस्तक अध्याय तथा 1 संपादित पुस्तक शामिल हैं। संस्थान ने 04 संकाय सदस्य, 01 प्रशासनिक एवं 05 तकनीकी सदस्यों को परिवार में जोड़ा। संस्थान में राष्ट्रीय महत्व के कार्यक्रमों का आयोजन किया गया। इस पहर में संस्थान ने कुछ नये राष्ट्रीय स्तर के कार्यक्रम भी शुरू किये। राष्ट्र प्रेम की भावना से ओत–प्रोत होते हुए संस्थान में 69वां गणतंत्र दिवस मनाया गया।

भारतीय प्रोद्योगिकी संस्थान जोधपुर अपने स्थाई परिसर में स्थानांतिरत होने के उपरांत अब शैक्षणिक उत्कृष्टता को प्राप्त करने की दिशा में तेज़ गति से अग्रसर हो रहा है।

क्षेमा प्रकाश (संपादक)

BIG NEWS

Shri Vijay Goel, Union Minister of State for Statistics & Program Implementation, visits IIT Jodhpur

Shri Vijay Goel, Union Minister of State for Statistics & Program Implementation, visited IIT Jodhpur on 23 February 2018. Upon arrival, he hoisted the flag of the Ministry and held a meeting with Director, Associate Deans, Heads and Professors In-charge of the Institute, along with Engineers of CPWD (who are the construction partners of IIT Jodhpur). A presentation was made on the development of the work at the Institute. Then, he visited some facilities in the Institute like the Berm, Lecture Hall Building, Service Tunnel and Student Hostels. Before the departure, Shri Vijay Goel planted a tree in front of the Institute Building as a mark of his first visit to the Institute. Mr. Narayan Lal Panchariya, Rajya Sabha Member of Parliament in Rajasthan, joined the Minister on the occasion.

Flag Hoisting by Shri Vijay Goel, Honourable Minister of State, Statistics & Program Implementation

Review of Development of the Institute

Visit to the Service Tunnel

Visit to the Lecture Hall Building

Tree Plantation

INSTITUTE EVENTS

69th Republic Day Celebration

The 69th Republic Day of the Nation was celebrated by Members of IIT Jodhpur, on 26 January 2018 in front of the Administrative Block of the Permanent Campus. The Director hoisted the National Flag, and the National Anthem was patriotically sung by all present.

Flag Hosting by Director IIT Jodhpur on 26 January 2018

Faculty Members, Staff Memebrs and Students during Republic Day Celebration

Cultural Program by Students of IIT Jodhpur on 26 January 2018

2018 International Women's Day Celebrated at Indian Institute of Technology Jodhpur

The 2018 International Women's Day was celebrated at the Indian Institute of Technology Jodhpur on 16 March 2018. The program was organized by the Women Cell, IIT Jodhpur. The program started at 6 pm. *Kshema Prakash, Convener, Women Cell, IIT Jodhpur*, introduced the program to the guest gathering and shared that continuing the initiative of organizing *Spring Activities* in the Institute, the Women Cell of IIT Jodhpur organized an *Extempore Speech Contest* and a *Quiz Competition* their Students and Employees, ahead of time. During this program, Prizes and Certificates of Appreciation were given away to the winners and participants.

Sanjana Malhotra, Zilla Swacch Bharat Prerak, Ministry of Drinking Water & Sanitation, Jodhpur District, graced the occasion as the Chief Guest and delivered key note address. She shared her experience as Zilla Swacch Bharat Prerak and how to work towards alleviation of difficulties that women face, particularly, in rural areas where sanitation is a major challenge.

Thereafter, *Professor Madhu Dixit*, Professor In-charge, Department of Bioscience 7 bioengineering, IIT Jodhpur, shared her views about the event and highlighted the contribution of Indian women across the world. She then presented a memento to Sanjana Malhotra. In closing *Professor Kirankumar Hiremath*, Member, Women Cell, IIT Jodhpur, proposed a vote of thanks.

2018 International Women's Day Celebration: *Sanjana Malhotra, Zilla Swacchh Bharat Prerak, Jodhpur* giving away prizes and certificates to the participants of Spring 2018 Competitions

2018 International Women's Day Celebration: *Sanjana Malhotra, Zilla Swacchh Bharat Prerak, Jodhpur*, delivering keynote address

Institute Day Celebrated at Indian Institute of Technology Jodhpur

The 2018 Institute Day was celebrated on 20 April 2018 in the Institute from 4.30 pm. This is an event marks a culmination of the Year's academic and non-academic activities. Sri Subhash Pandey, Advisor (Administration) welcomed the gathering. Reports of the Institute's activities during 2017-18 were presented by Rakesh K. Sharma (Associate Dean (R&D), Suril V. Shah, (Associate Dean (Academics), Samanwita Pal (Associate Dean (Students), and C. V. R. Murty (Director).

Certificates of appreciation were distributed to Students for their achievements in academic and non-academic activities during previous year. Thereafter Madhu Dikshit (Professor-in-Charge, Department of Bioscience & Bioengineering), B. P. Kashyap (Professor-in-Charge, Department of Metallurgical & Materials Engineering), and Shri M. L. Bapna (Advisor (Industry – Academia Interface)) addressed the gathering on growth of the Institute. The Director, in his closing remarks, wished the outgoing students a fulfilling career and satisfying life ahead.

Ankita Sharma, Chairperson, Student Counselling Service, welcoming the attendees

Rakesh K. Sharma, Associate Dean (R&D) presenting Report of R&D Activities during 2017-18

Suril V. Shah, Associate Dean (Academics) presenting Report of Academic Activities during 2017-18

Samanwita Pal, Associate Dean (Students) presenting Report of Student Activities during 2017-18

Suril V. Shah, Associate Dean (Academics) presenting Certificates to Students for Academic Achievements

Samanwita Pal, Associate Dean (Students) presenting Certificates to Students for Non-Academic Achievements

Madhu Dixit, Professor In-charge, Department of Bioscience & Bioengineering presenting the roadmap for growth of the Institute

B. P. Kashyap, Professor In-charge, Department of Metallurgical & Materials Engineering presenting the roadmap for growth of the Institute

M. L. Bapna, Advisor (Industry-Academia Interface) presenting the roadmap for growth of the Institute

Outgoing Students attending the function

4th International Yoga Day Celebrated at Indian Institute of Technology Jodhpur

The 4th International Day of Yoga was observed on 21 June 2018 at the Indian Institute of Technology Jodhpur. Members of the IIT Jodhpur fraternity including Students, Faculty and Staff Members, and their family members enthusiastically participated in the event.

Professor Bhagwati Prasad Kashyap, Professor In-charge, Department of Metallurgical & Materials Engineering, IIT Jodhpur, in his opening remarks, welcomed the participants and explained the benefits of Yoga for physical and mental health. The participants were taught various *Aasanaas* and *Pranayam*. The instructor encouraged the participants to practice yoga every day. A vote of thanks was proposed by *Shri Subhash Pandey*, Advisor (Administration), IIT Jodhpur.

Yoga session in progress at Permanent Campus and at GPRA Residential Campus, IIT Jodpur

Participants of the 4th International Yoga Day, 21 June 2018

ACADEMICS

IIT Jodhpur rolls out new B.Tech. and M.Tech. programs

From July 2018, IIT Jodhpur had rolled out following new academic programs, namely

(a) B.Tech. Bioscience & Bioengineering with 60 seats;
(b) M.Tech. Computer Science and Engineering with 20 seats; and
(c) M.Tech. Metallurgical and Materials Engineering with 10 seats

These academic programs are aimed at developing trained manpower with an understanding and appreciation of Science and Technological complexities, and the know-how to manipulate the same to develop technological solutions for National Grand Challenges.

Ph.D. Thesis Defense

The following eight students of IIT Jodhpur successfully defended their Ph.D. Theses in these six months.

S. No.	Name of Student	Title of Thesis	Supervisor	Department	Date of Defense
1.	Bibin G. Anand	*Nanoparticle based inhibitors to target protein aggregation*	Karunakar Kar	Bioscience & Bioengineering	11 January 2018
2.	Pura Ram	*Rare Earth Doped LiMn2O4 Cathodes for Lithium Ion Battery*	Rakesh Kumar Sharma	Chemistry	20 February 2018
3.	Puneet Kumar Jain	*Processing of Heart Sound Signal to Monitor Cardiovascular Functions in Real-life Scenario*	Anil Kumar Tiwari	Electrical Engineering	23 February 2018
4.	Ram Niwash Mahia	*Input-Output Dynamic Properties of Complex Networks*	Deepakkumar M. Fulwani	Electrical Engineering	12 March 2018
5.	Pradumn Kumar Pandey	*Parametric network models, network reconstruction and diffusion protocols for networks*	Venkata Ramana Badarla, Bibhas Adhikari, & Mainak Mazumdar	Computer Science & Engineering	23 March 2018
6.	Rakesh Kanji	*Systems modeling of target and chemical profiles of drugs to predict their phenotypic side effects with canonical correlation analysis*	Head, Department of Bioscience & Bioengineering & Ganesh Bagler, IIIT, Delhi	Bioscience & Bioengineering	2 April 2018
7.	Rahul Badhwar	*Systems Biological Investigations of Brain Networks*	Head, Department of Bioscience and Bioengineering & Ganesh Bagler, IIIT, Delhi	Bioscience & Bioengineering	18 April 2018
8.	Lokesh Saini	*Ferroics and their Rubber Composites for Wide-band Microwave Absorption*	Ambesh Dixit and S. R. Vadera, Defence Laboratory, Jodhpur	Physics	4 June 2018

New Research Projects

B. Ravindra, Associate Professor, Department of Mechanical Engineering, has been sanctioned the sponsored research project *Bridging the Innovation Gap* by INTEL Foundation for Innovation and Collaborative Education. The duration of the project is 3 Months.

Priyanka Singh, Assistant Professor, Department of Bioscience & Bioengineering, has been sanctioned the sponsored research project *Vigyan Jyoti Pilot Project of DST* by Department of Science and Technology, Government of India. The duration of the project is 1 year.

Shankar Manoharan, Assistant Professor, Department of Bioscience & Bioengineering, has been sanctioned the sponsored research project *Hospital-associated ESKAPE pathogens: Unraveling novel regulatory layers controlling virulence and persistence* by Department of Biotechnology, Government of India. The duration of the project is 5 years.

Monika Sinha, Assistant Professor, Department of Physics has been sanctioned the sponsored research project *Magnetars with Superfluid Core* by Science and Engineering Research Board, Government of India. The duration of the project is 3 years.

Rakesh Kumar Sharma, Assistant Professor, Department of Chemistry has been sanctioned the sponsored research project *Impact of Rainwater Harvesting on Groundwater Quality in India with Specific Reference to Fluoride and Mircropollutants* by Department of Science and Technology, Government of India. The duration of the project is 3 years.

Somnath Ghosh, Assistant Professor, Department of Physics has been sanctioned the sponsored research project *Possibilities and Device Applications of Degenerate Optical Microcavities* by Science and Engineering Research Board, Government of India. The duration of the project is 3 years.

Madhu Dikshit, Professor In-charge, Department of Bioscience & Bioengineering, has been sanctioned the sponsored research project *Molecular studies to delineate the role of nitric oxide/nitric oxide synthase in neutrophil maturation, survival and functions* by Science and Engineering Research Board, Government of India. The duration of the project is 3 years.

Research Publications

Department of Bioscience & Bioengineering

Journal Articles

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2. Kanuri,B.N., Rebello,S.C., Pathak,P., Agarwal,H., Kanshana,J.S., Awasthi,D., Gupta,A.P., Gayen,J.R., Jagavelu,K., & **Dikshit,M.** (2018). Glucose and lipid metabolism alterations in liver and adipose tissue pre-dispose $p47^{phox}$ knockout mice to systemic insulin resistance. *Free Radical Research*, 52(5), 568-582. ISSN: 1071-5762. https://doi.org/10.1080/10715762.2018.1453136
3. Khan,E., Tawani,A., Mishra,S.K., Verma,A.K., Upadhyay,A., Kumar,M., Sandhir,R., **Mishra,A.** & Kumar,A. (2018). Myricetin reduces toxic level of CAG repeats RNA in Huntington's Disease (HD) and Spino Cerebellar Ataxia (SCAs). *ACS Chemical Biology, 13(1), 180-188*. ISSN: 1554-8929. https://doi.org/10.1021/acschembio.7b00699
4. Khandelwal,A., Vijay,A., **Dixit,A., & Chhabra,M.** (2018). Microbial fuel cell powered by lipid extracted algae: A promising system for algal lipids and power generation. *Bioresource Technology, 247, 520-527*. ISSN: 0960-8524. https://doi.org/10.1016/j.biortech.2017.09.119
5. Singh, R., Shitiz, K., Singh, S., **Jha, S.,** & Singh, A. (2018). Evaluation of wound dressing properties of chitin membranes containing nanosilver. *Biomedical Physics & Engineering Express, 4(2), 025030*. ISSN: 2057-1976. https://doi.org/10.1088/2057-1976/aaa9ca
6. Vijay,A., Arora,S., Gupta,S., & **Chhabra,M.** (2018). Halophilic starch degrading bacteria isolated from Sambhar Lake, India, as potential anode catalyst in Microbial fuel cell: A promising process for saline water treatment. *Bioresource Technology, 256, 391-398*. ISSN: 0960-8524. https://doi.org/10.1016/j.biortech.2018.02.044

Preprint

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Department of Chemistry

Journal Articles

1. Dahiya,V., & **Pal,S.** (2018). The effect of paracetamol on 5 fluorouracil and bovine serum albumin interaction: A biophysical study. AIP Conference Proceedings, 1953(1), 140012. ISSN: 0094-243X. https://doi.org/10.1063/1.5033187
2. Gahlaut,A., & **Paranjothy,M.** (2018). Unimolecular decomposition of formamide via direct chemical dynamics simulations. *Physical Chemistry Chemical Physics, 13(20), 8498-8505*. ISSN: 1463-9084. https://doi.org/10.1039/C8CP00541A
3. Janu,V.C., Bahuguna,G., Laishram,D., Shejale,K.P., Kumar,N., **Sharma,R.K., & Gupta,R.** (2018). Surface fluorination of α-Fe2O3 using select fluor for enhancement in photoelectrochemical properties. *Solar Energy Materials and Solar Cells, 174*, 240–247. ISSN: 0927-0248. https://doi.org/10.1016/j.solmat.2017.09.006
4. Kaur,H., & **Kumar,A.** (2018). Game-theoretic perspective of Ping–Pong protocol. *Physica A: Statistical Mechanics and Its Applications, 490, 1415-1422*. ISSN: 0378-4371. https://doi.org/10.1016/j.physa.2017.09.019
5. Krishnan,Y., Rajbangshi,P., & **Paranjothy,M.** (2018). Theoretical Study of Perbenzoate Anion Decomposition Pathways in the Gas Phase. *International Journal of Mass Spectrometry, 428, 8-14*. ISSN: 1387-3806. https://doi.org/10.1016/j.ijms.2018.01.011
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10. Nunes-Pereira,J., Sharma,P., Fernandes,L.C., Oliveira,J., Moreira,J.A., **Sharma,R.K.,** & Lanceros-Mendez,S. (2018). Poly(vinylidene fluoride) composites with carbon nanotubes decorated with metal nanoparticles. Composites Part B: Engineering, 142, 1–8. ISSN: 1359-8368. https://doi.org/10.1016/j.compositesb.2017.12.047
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14. Srivastava,A., & **Debnath,A.** (2018). Hydration dynamics of a lipid membrane: Hydrogen bond networks and lipid-lipid associations. *The Journal of Chemical Physics*, *148*(9), 094901. ISSN: 0021-9606. https://doi.org/10.1063/1.5011803

Department of Computer Science & Engineering

Journal Articles

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Conference Papers

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Department of Electrical Engineering

Journal Articles

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4. Bhati,V.S., Ranwa,S., Rajamani,S., Kumari,K., Raliya,R., Biswas,P., & **Kumar,M.** (2018). Improved Sensitivity with Low Limit of Detection of a Hydrogen Gas Sensor Based on rGO-Loaded Ni-Doped ZnO Nanostructures. *ACS Applied Materials & Interfaces*, *10*(13), 11116–11124. ISSN: 1944-8244. https://doi.org/10.1021/acsami.7b17877
5. Chopra,P., & **Yadav,S.K.** (2018). Restricted boltzmann machine and softmax regression for fault detection and classification. *Complex & Intelligent Systems*, 4(1), 67-77. ISSN: 2198-6053. https://doi.org/10.1007/s40747-017-0054-8
6. Dahiya,S., & **Singh,A.K.** (2018). Channel estimation and channel tracking for massive MIMO system in correlated block fading channel. Digital Communications and Networks, 4(2), 138-147. ISSN: 2352-8648. https://doi.org/10.1016/j.dcan.2017.07.006
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11. Kumar,R., Goel,N., & **Kumar,M.** (2018). High performance NO2 sensor using MoS2 nanowires network. *Applied Physics Letters*, *112*(5), 053502. ISSN: 0003-6951. https://doi.org/10.1063/1.5019296
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OUTREACH

5th GIAN Course on Advanced Materials and Future Technologies for Solar Energy Conversion 8-12 January 2018

The fifth course under GIAN Program at IIT Jodhpur on *Advanced Materials and Future Technologies for Solar Energy Conversion* was organised during 8-12 January 2018. Ritu Gupta, Assistant Professor, IIT Jodhpur, *Mukundan Thelakkat*, Professor, University of Bayreuth and Giridhar U. Kulkarni, Professor, Centre for Nano and Soft Matter Sciences, Bangalore were the key resource persons.

The course was attended by participants from 16 institutes and organisations, including 9 Faculty Members, 21 Students and 1 participant from industry and research organisations. The Course had 13 expert lectures, and 25 participants credited for the course.

Rakesh K. Sharma, Head, Department of Chemistry Department, IIT Jodhpur, extended a warm welcome to the international Ffaculty Member as well as participants, and set up the stage with his inspiring opening remarks. B. Ravindra, Head, Department of Mechanical Engineering, IIT Jodhpur and Local GIAN Coordinator, briefed the participants about the vision behind the GIAN Program and discussed the possibility of joint research partnership between University of Bayreuth and IIT Jodhpur.

Group Photo of Participants of GIAN Program, Faculty Members, Staff Members and Students of Department of Chemistry with Invited Guests

National Workshop on Human-Centered Robotics (NWHCR'18)
17-18 March 2018

A *National Workshop on Human-Centered Robotics (NWHCR'18)* was organised at IIT Jodhpur, in collaboration with *The Robotics Society (TRS)* during 17-18 March 2018. The workshop had two Keynote Talks, seven Expert Lectures and a Panel Discussion in the area of Human-Centered Robotics by eminent Professors, Scientists, and Researchers from Academia, R&D Organizations and Industry. The workshop received a very encouraging response, and was attended by more than 90 participants. The workshop emphasized bringing forward various problems and research opportunities in the area of Human-Centered Robotics. More specifically, it focused on robotic rehabilitation, medical robotics, and robotic simulators for training of human, assistive robotics, robot navigation in a human environment, robot learning from human and safe robots.

Kaushal A. Desai, General Chair and Head, Department of Mechanical Engineering, welcomed the participants and experts to the workshop. The workshop was inaugurated by *K. Madhava Krishna*, Professor, IIIT Hyderabad. *S. Bandyopadhyay*, Professor, IIT Madras, *Ranjan Dasgupta*, TCS Innovation Lab, Kolkata. *U. K. Singh*, Director, Defence Bio-engineering and Electro-medical Lab., DRDO and *S. K. Saha*, Professor, IIT Delhi delivered keynote talks, and *K. Madhava Krishna*, Professor, IIIT Hyderabad, delivered the inaugural invited talk. This was followed by the invited talks by *S. Bandyopadhyay*, Professor, IIT Madras, *B. Ravindran*, Professor, IIT Madras, *Sudipto Mukherjee*, Professor, IIT Delhi, *Arun Dayal Udai*, Professor, BIT Mesra, and *Vineet Vashistha*, Professor, IIT Gandhinagar. The workshop concluded with a panel discussion on challenges, opportunity, and road ahead in the area. The panel discussion was steered by *S. K. Saha*, Professor, IIT Delhi with panel members as *S. Bandyopadhyay*, Professor, IIT Madras, *Vineet Vashistha*, Professor, IIT Gandhinagar, *A. K. Yadav*, Defence Lab Jodhpur, *Abhay Elhence*, Professor, AIIMS Jodhpur, *Ranjan Dasgupta*, TCS Innovation Lab, Kolkata, and *Suril V. Shah*, Assistant Professor, IIT Jodhpur.

Also, the workshop provided an opportunity to the participants to showcase their research in the forms of posters and demonstrations and to experts to get their valuable inputs. The participants were taken to Robotics Laboratory at IIT Jodhpur and explained the ongoing research and were made aware of the facilities available in the Institute.

Group Photo of the Participants of NWHCR'18

2018 World Immunology Day celebrated in IIT Jodhpur

2018 World Immunology Day was celebrated in IIT Jodhpur by the Faculty Members of Department of Bioscience & Bioengineering on 1 May 2018. Class VIII Students of *Kendriya Vidyalaya*, IIT Jodhpur, were invited to attend the program and participate in the activities planned for them. This program was aimed at encouraging students to choose a career in science. The program started at 9:30 am with welcome speech by Sushmita Jha, Assistant Professor, on Immunology and Hygiene. It was followed by a short introduction by Ph.D. and M.Tech. Students of their journey of science. Then, videos on the *Immune System* were shown – how it fights different microorganisms and the importance of hygiene in daily life for prevention of diseases. Thereafter, the activities were undertaken, like solving puzzles, answering questions based on the videos shown to them, and viewing slides of blood smears and sections of human brain.

Professor Madhu Dikshit, Professor-in-Charge, Department of Bioscience & Bioengineering, interacted with the students and reiterated the importance of health and hygiene in daily life. A group of M.Tech. students enacted a short skit based on hygiene and healthy habits. Prizes were distributed to the winners of the activities. The celebration ended with group photographs and feedback from students on what they have learnt and liked about the event.

Students of Kendriya Vidyalaya, IIT Jodhpur, with the Faculty Members and Students of the Department of Bioscience & Bioengineering

International Day of Light celebrated in IIT Jodhpur

UNESCO had declared 16 May 2018 as the "International Day of Light," and stated that: "The International Day of Light will provide focus for the appreciation of the role that light plays in the lives of the citizens of the world in areas of science, culture, education, sustainable development, and in fields as diverse as medicine, communications and energy."

On this occasion, the Department of Metallurgical and Materials Engineering, IIT Jodhpur, organized a lecture by Professor B. M. Arora, an eminent scientist and academic from IIT Bombay. He spoke on Light to Electricity through Silicon. He elaborated the current national scenario of solar cell industry and how academia can play an important role in increasing the efficiency of state-of-the-art solar cells. Also, he emphasized the importance of new non-invasive tools required for day-to-day testing of cells. The event ended with interesting discussions on the topic of the day.

Professor B. M. Arora showcasing state-of-the-art solar cells

Group Photo of Faculty Members and Students with Invited Guests

Vigyan Jyoti Program organised at IIT Jodhpur

IIT Jodhpur has organized *Vigyan Jyoti Program* during 14 May – 02 June 2018. The program is a new initiative of the Department of Science & Technology (DST), Government of India, to bring gender parity in the different fields of Science & Technology (S&T), where females are under-represented. Under this program, 30 girl students of Classes XI & XII of nearby government schools resided on campus of IIT Jodhpur for 3 weeks, and participated in various activities designed especially for them on a spectrum of issues, like, Role Models, Society & Life, Health, Competence, and Profession & Life. The program was coordinated by *Priyanka Singh*, Nodal Officer, Vigyan Jyoti at IIT Jodhpur.

Visit of Students of Vigyan Jyoti Program to Central Arid Zone Research Institute (CAZRI), Jodhpur

Hands on experience in laboratory in Department of Electrical Engineering

Hands on experience in Biology Laboratory

Yoga session in progress

Lectures for Direct To Home (DTH) project

Mayurakshi Chaudhuri, Assistant Professor of Sociology, Department of Humanities & Social Sciences, was invited to participate in MHRD's Direct To Home (DTH) project by the coordinating Institute, IIT Kanpur. As part of the project, she has recorded a set of 20 lectures on the course Gender and Society at the Media Center, IIT Kanpur. Her lectures shall be telecast on Channel 16 for Humanities & Social Sciences and Management, by Doordarshan. Channel 16 has already begun telecasting courses since early 2018. For more information, please consult the following website: http://www.swayamprabha.gov.in/.

Guest Lectures

A guest lecture was delivered by Debapratim Das on *Aggregated Small Molecules: Hydrogel and AIEgens* on 09 March 2018. Professor Debapratim Das is working in the Department of Chemistry, Indian Institute of Technology Guwahati. The lecture was hosted by the Department of Chemistry.

Debapratim Das

A guest lecture was delivered by A. Gourav Rao on *Naval Materials and Their Applications* on 31 May 2018. Dr. A. Gourav Rao is working Naval Materials Research Laboratory, Ambernath. The lecture was hosted by the Department of Metallurgical & Materials Engineering.

A. Gourav Rao

Seminars

A seminar presentation was given by Dr. Soumik Siddhanta on *A Plasmonics Route towards Spectroscopic Fingerprinting of the Tumor and its Microenvironment* on 08 June 2018. Dr. Soumik Siddhanta is associated with John Hopkins University. The seminar was hosted by the Department of Chemistry.

Soumik Siddhanta

A seminar presentation was given by Dr. Bhabatosh Banik on *Cancer, Atherosclerosis, Mitochondria Isolation, BBB penetration and their Nanoparticle Connection* on 17 April 2018. Dr. Bhabatosh Banik is associated with University of Miami, USA. The seminar was hosted by the Department of Chemistry.

Bhabatosh Banik

Vanguard Lectures

The following Vanguard Lectures were organized by the Department of Mechanical Engineering, which were attended by the Faculty Members, Students, and Technical Staff Members from the Department.

Biswadip Shome, Director, Simulation Based Design Global Technology and Engineering Center, Whirlpool Corporation, addressed the members of the Department of Mechanical Engineering on *Simulation Based Design and its Application in various Industry Sectors* on 12 March 2018.

Biswadip Shome

Ashok Kumar Yadav, Scientist G, Associate Director, Defense Laboratory, Jodhpur addressed the members of the Department of Mechanical Engineering on *Detection of Nuclear Radiation* on 06 April 2018.

Awards & Recognitions

Gaurav Harit awarded Young Faculty Research Fellowship

Gaurav Harit, Assistant Professor, Department of Computer Science & Engineering, has been awarded *Young Faculty Research Fellowship (YFRF)* of *Visvesvaraya Ph.D. Program* of Ministry of Electronics and Information Technology (MeitY), Government of India. The total duration of the Fellowship is for a period of 5 years.

Rakesh Kumar Sharma wins Outstanding Research Award 2018

Rakesh Kumar Sharma, Assistant Professor, Department of Chemistry, was decorated with the *Outstanding Research Award 2018 during 1st Annual Transformational Leadership Summit & Awards 2018* at Bangalore on 28 April 2018. The Outstanding Research Award exemplifies excellence in research, and fosters and felicitates individuals with inclination towards creating positive impact on research and academic community with notable contribution to their field. The awardee is commended for being an individual, who has provided a research culture among teaching fraternity towards pursuing research activities, and who inculcated a research environment, in which research is fostered and appreciated.

Rakesh Kumar Sharma receiving the Outstanding Research Award 2018

Sandip Murarka selected for receiving the Early Career Research Award (ECRA)

Sandip Murarka, Assistant Professor, Department of Chemistry, has been awarded the Early Career Research Award (ECRA) funded by Science and Engineering Research Board (SERB), Department of Science & Technology (DST), Government of India, for the project *"Tandem Annulations involving Metallocarbenes: Towards Diverse Molecular Architectures"*. Duration of the project is 3 years.

Priyanka Singh selected for receiving the Early Career Research Award (ECRA)

Priyanka Singh, Assistant Professor, Department of Chemistry, has been awarded the Early Career Research Award (ECRA) funded by Science and Engineering Research Board (SERB), Department of Science & Technology (DST), Government of India, for the project "Role of Centriole Protein, CPAP, in neurodevelopmental disorder". Duration of the project is 3 years.

Mahesh Kumar, elected as Chairman of Indian National Young Academy of Science (INYAS)

Mahesh Kumar, Assistant Professor, Department of Electrical Engineering, has been elected as Chairman of Indian National Young Academy of Science (INYAS,) for two years from March 2018.

Mahesh Kumar, selected as Member of National Academy of Sciences India (NASI)

Mahesh Kumar, Assistant Professor, Department of Electrical Engineering, has been selected as Member of National Academy of Sciences India (NASI) from May 2018.

Mahesh Kumar, awarded Bhaskara Advanced Solar Energy (BASE) Fellowship

Mahesh Kumar, Assistant Professor, Department of Electrical Engineering, has been awarded prestigious Bhaskara Advanced Solar Energy (BASE) Fellowship by Indo-US Science and Technology Forum (IUSSTF), for 3 months, during March-May 2018 to carry out research at South Dakota State University, USA.

STUDENTS

Activities & Achievements

Gaurav Bahuguna awarded Best Poster for his Research Work

Gaurav Bahuguna, Ph.D. Student, working with Ritu Gupta, Assistant Professor, Department of Chemistry, received *Best Poster Prize* from American Chemical Society, USA, for his research work at the International Conference on Nano Science and Technology (ICONSAT 2018) held during 21-23 March 2018 at Indian Institute of Science, Bengaluru.

Gaurav Bahuguna receiving third best poster award for his research work

NIMBLE Celebrated at IIT Jodhpur

The Annual Intra-Institute Technical Festival, Nimble, was organized during 23-25 March 2018, and in addition to hosting many technical competitions, such RF-controlled robots, line followers, CAD design, coding and web contests, the fest included special events such as a Technical Exhibition, Quadcopter Workshop, an Air Show, and a Planetarium Show for the IIT fraternity.

Prizes were awarded to student achievers from the Society during the NIMBLE 2018 Opening Ceremony inaugurated by Mr. Ravindra Kumar (Defence Lab, DRDO Jodhpur)

Events at NIMBLE 2018 ranged from exciting challenges, aeromodelling workshops, to presentation of innovative ideas

IEEE Student Branch of IIT Jodhpur

The IEEE Student Branch of IIT Jodhpur organized several invited talks, workshops, and pre-university outreach programs in the local schools of Jodhpur. The Women in Engineering Affinity Group of the Student Branch organized two outreach programs (STAR: Student Teacher and Researcher) on 27 January and 17 February 2018, at the Jalori Gate Government Girls' Senior Secondary School and Government Secondary School, Lordi Panditji Village, Jodhpur, respectively. The events were attended by more than 220 students from Classes VIII – XII, and their Science Teachers. Mission of the STAR program is to improve perception of the field of engineering, continue to attract more girls to the pursue an engineering career, as well as to promote to all students the endless possibilities that can result from considering engineering as a possible career option. The team, led by their Branch Counselor, Professor Rajlaxmi Chouhan, comprised of Megha Singh, Bhuvnesh Rathore, Hiteshi Jain, Deepak Dhillon, Manju Kumari, Ravi Sharma, Sumitra Godara, Arpita Jaitawat, Dipti Trivedi, and Venugopal Achhe. The activities included a brief introduction to various engineering disciplines, followed by a hands-on session on basic electronic circuits and a science quiz contest.

The team from IEEE Student Branch of IIT Jodhpur with the participating students at Government Girls' Senior Secondary School

Preliminary round of Science Quiz

Hands-on practical activity

The team of the Student Branch was felicitated by the administration of Government Secondary School, Lordi Panditji Village, Jodhpur

Rotaract Club at IIT Jodhpur

Rotary Club of Jodhpur Padmini announced the charter of the Rotaract Club of IIT Jodhpur on 13 March 2018. Rotary Club wished that the Rotaract Club of IIT Jodhpur would be able to inspire the youngsters to give their best for the society, under the able leadership of Kumar Rahul, Ph.D. Student of IIT Jodhpur, who became the first president of this Club. The Certificate of Organisation to the new Rotaract Club in IIT Jodhpur and the Inauguration Ceremony held on 3 May 2018. The club started with 14 Members and 9 Board Members.

Core Committee Members of the Rotaract Club of IIT Jodhpur

Gymkhana Day Celebration at IIT Jodhpur

Gymkhana Day was celebrated in the Institute on 3 May 2018. Students Gymkhana is the organized system of self-governance of the activities of the Student Body at the Institute level. Samanwita Pal, Associate Dean (Students), welcomed the gathering. Certificates of appreciation were distributed to Students for participating in various activities of Students Gymkhana during the Academic Year 2017-18. Faculty Advisors of the Student Societies, Students Gymkhana, introduced the new Office Bearers of Student Gymkhana for the Academic Year 2018-19. Thereafter, Heads of the Departments and Director, addressed the Graduating Students. The Director, in his closing remarks, wished the outgoing students a fulfilling career and satisfying life ahead.

Students receiving Certificates of Appreciation

CAMPUS NEWS

Foundation Day Celebrated at Department of Bioscience & Bioengineering

The Department of Bioscience and Bioengineering celebrated its Foundation Day during 15-16 February 2018. The program had six Expert Lectures and a Panel Discussion in the area of Bioscience & Bioengineering by eminent Professors from Academia and R&D organisations. Sushmita Jha, Assistant Professor and Head of the Department of Bioscience & Bioengineering welcomed the Participants and Experts to the Program. This was followed by invited talks by Debashis Mitra, Director, Centre for DNA Fingerprinting and Diagnostics, Hyderabad, Rakesh Bhatnagar, Professor, School of Biotechnology, Jawaharlal Nehru University, New Delhi, Nihar Ranjan Jana, Professor, National Brain Research Centre, Gurgaon, Dipankar Nandi, Professor, Department of Biochemistry, Indian Institute of Science, Bangalore, Anirban Basu, Professor, National Brain Research Centre, Gurgaon and Amitabha Mukhopadhyay, Professor, National Institute of Immunology, New Delhi.

Also, the workshop provided an opportunity to the participants to discuss their research and future roadmap for the Department of Bioscience & Bioengineering with the experts to get valuable inputs.

Professor Amitabha Mukhopadhyay addressing the participants.

Professor Nihar Ranjan Jana, addressing the participants.

Group Photo of Faculty Members and Students with Invited Guests

Ek Bharat Shreshth Bharat celebrated at IIT Jodhpur

Ek Bharat Shreshth Bharat is an initiative launched by the Government of India to foster national integration by a coordinated mutual engagement process between States, Union Territories, Central Ministries, Educational Institutions and general public through linguistic, literary, cultural, sports, tourism and other forms of people-to-people exchanges.

A program *Melodious Assam* organized by Students of Cultural and Literacy Society, Students Gymkhana, IIT Jodhpur, on 12 January 2018, which is celebrated as the National Youth Day. It began with a presentation about the life of the illustrious Swami Vivekananda, who was born on this day. An impromptu music performance enhanced the evening. To celebrate Assam's rich cultural heritage, Assamese songs from different era were performed by Students and Faculty Members, followed by a poetry recital that captured the essence of India's diverse yet universal identity

The evening of Sunday, 29 April 2018, witnessed to a spectacular cultural performance in the premises of IIT Jodhpur. Under the Ek Bharat Shresth Bharat initiative, the students of IIT Jodhpur, in collaboration with SPICMACAY, Rajasthan Chapter, rendered a soulful presentation of the beauty and cultural heritage of Assam, deep in the hinterlands of Rajasthan. The evening started with a beautiful traditional performance of Bihu Dance, an ethnic folk-dance of Assam, by the students of IIT Jodhpur. Following this captivating dance performance, was a recital of O Mûr Apunar Dex, the State Anthem of Assam, written by the poet Lakshminath Bezbaroa. Shrimati Anwesha Mahanta, a famous exponent of the traditional Assamese dance Sattariya, presented two beautiful renditions of the ancient dance forms Bhagavatam and Krishnakatha. The evening carried on with the presentations of a short video depicting the natural beauty of Assam and a musical program was presented by Students. The event was covered by Door Darshan, Jaipur, through the local correspondents, for broadcasting.

Assamese Song *Mathu Tumi* by Pawan Kishore

Assamese song *istirno Parore* by Prodyut R. Chakraborty

Bihu Dance performance by Students

Sattriya Dance by Shrimati Anwesha Mahanta

NEW JOININGS

IIT Jodhpur welcomes the following new Faculty Members and Staff Members into the family:

Name	Designation	Department / Office	Date of Joining
Arpit Khandelwal	Assistant Professor	Department Of Electrical Engineering	11 January 2018
Naveen Kumar	Junior Technician	Department Of Electrical Engineering	12 February 2018
Madhu Dikshit	Visiting Professor	Department of Bioscience and Bioengineering	13 February 2018
Chandra Veer Charan	Assistant Workshop Superintendent	Department Of Mechanical Engineering	16 February 2018
Dhavalbhai M. Raiyani	Junior Technician	Department Of Mechanical Engineering	19 February 2018
Subhajit Sidhanta	Assistant Professor	Department Of Computer Science And Engineering	28 February 2018
Ravi Jangid	Junior Technician	Department Of Mechanical Engineering	12 March 2018
Sampatlal N. Suthar	Junior Technician	Department Of Materials Engineering	19 March 2018
Dinesh Kumar Dikshit	Advisor (Students)	Office of Students	14 May 2018
Hardikkumar B. Kothadia	Assistant Professor	Department Of Mechanical Engineering	28 May 2018
Durgamadhab Mishra	Assistant Professor	Department of Physics	28 June 2018

DEPARTMENT IN FOCUS – Mathematics

Mathematics being the basis of many disciplines, is a subject that evolves with time and create new theories and models to solve challenging problems of today. Since its inception, the Department of Mathematics at IIT Jodhpur has been taking a leading role in developing new methods and models that can be used in diverse areas of computer science, engineering and basic sciences. The vision of the Department is to ensure a vibrant platform for the analysis of central principles underlying the technologies of national importance chosen by the Institute.

With Faculty Members, who specialize in diverse disciplines including Mathematical Physics, Scientific Computation, Numerical Analysis, Differential Equations, Topological Dynamics, Low Dimensional Chaos, Renormalization in Low-dimensional dynamics, Wavelet Analysis, Fractional Transform Theory, Image Processing, Financial Risk Analysis, and Categorical Data Analysis, the Department has been attracting various sponsored projects from R&D organizations since its inception.

Programs

The Department of Mathematics offers high-quality programs at postgraduate level with excellent facilities and dedicated Faculty members. It runs the following programs:

1. M.Sc. (Mathematics), and
2. Ph.D. in Mathematics.

M.Sc. and Ph.D. Programs at IIT Jodhpur are offered with the objective of tapping opportunities to ensure creation of both motivated researchers in the frontline areas and well trained workforce in the form of teaching faculty. The Program strives to provide a vibrant environment to nurture knowledge and interpersonal skills of the students in pursuit of developing a well-trained workforce.

People

The Department has five regular Faculty Members working in different areas.

Name	Designation	Research Area
Gaurav Bhatnagar	Assistant Professor & Head	Wavelet Analysis, Fractional Transform Theory, Multimedia Security, Image Processing, Information Fusion.
Kirankumar R. Hiremath	Assistant Professor	Theoretical, mathematical and computational aspects of wave-matter interactions, Differential Equations
Puneet Sharma	Assistant Professor	Topological Dynamics, Low Dimensional Chaos
Vivek Vijay	Assistant Professor	Financial Risk Analysis, Categorical Data Analysis, Regression
V.V.M.S. Chandramouli	Assistant Professor	Dynamical Systems and Renormalization Theory

The department has one Administrative Staff Member assisting the Faculty Members, and 9 Ph.D. Students. Prospective candidates for Faculty Member positions are encouraged to visit our recruitment page to know more about the procedure: http://iitj.ac.in/faculty/facultypositions. Also, the Department invites applications from motivated researchers to Post-Doctoral Positions in the Department.

Collaboration

Faculty Members of the Department of Mathematics are keen to collaborate with individuals from academia, R&D laboratories and industry in India and abroad, in areas of mutual interest. The domains of these collaborations could include, but not limited to teach courses, organize short courses, co-author books, and undertake joint research projects. The ongoing collaborations include those with colleagues from University of British Columbia, Kelowna, BC, Canada; University of Windsor, Canada; Lehigh University, Bethlehem, PA, USA; US Air Force Research Laboratory, Rome, NY, USA; Toyota Technological Institute, Nagoya, Japan; and State University of New York at Stony Brook, NY, USA.

Outreach

Department of Mathematics hosts weekly seminars for Ph.D. Students and also invites eminent persons from academia for guest lectures and talks on regular basis.

Department of Mathematics Building, presently housed in the Department of Computer Science & Engineering Building, in the Permanent Campus of IIT Jodhpur

Faculty Members, Staff Members and Students of Department of Mathematics, IIT Jodhpur, at a glance

OFFICE IN FOCUS – Office of Accounts

The *Office of Accounts* is one of the main Offices of the Institute responsible for systematic and comprehensive recording of all the financial transactions of the Institute and for appraising the financial position of the Institute in the form of annual accounts at the end of each financial year with accuracy. It facilitates the following:

(1) Preparation of annual budget and distribution of budget to various Departments and Offices;
(2) Passing of bills related to expenditures, such as Salary and Allowances, Medical reimbursement; Telephone reimbursement; CPDA reimbursement; TA Reimbursement; Payment to vendors for purchase, regular contract / services; Revenue Collection; and Account reconciliation;
(3) Preparation of Annual Accounts;
(4) Printing of ledger and day book;
(5) Facilitating CAG Audit;
(6) Corpus Creation and Management; and
(7) Investment Management, Banking Management and Tax Management.

People

Activities of the Office of Accounts are coordinated by Superintendent (Officer-in-Charge), who in turn is assisted by Staff Members. The following are the people associated with this Office:

Name	Designation
Ashish Kachhawaha	Superintendent
Rakesh Kumar	Junior Assistant
Narayan Dadhich	Junior Assistant
Sapna Sankhla	Junior Assistant

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