**ACADEMICS**

**Ph.D. Theses**

The following students have successfully defended their Ph.D. theses:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the Student</th>
<th>Title of Thesis</th>
<th>Supervisor</th>
<th>Department</th>
<th>Date of Defense</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Deepak Kumar Chhangani</td>
<td>Role of MGRN1 E3 Ubiquitin Ligase in Protein Quality Control Mechanism and Polyglutamine Diseases</td>
<td>Amit Kumar Mishra</td>
<td>Biology</td>
<td>7 January 2016</td>
</tr>
<tr>
<td>3.</td>
<td>Suresh Singh</td>
<td>Mitigation of Negative Impedance Instabilities in DC/DC Converters and DC Microgrids using Nonlinear Control</td>
<td>Deepakkumar M. Fulwani</td>
<td>Electrical Engineering</td>
<td>3 May 2016</td>
</tr>
</tbody>
</table>

**R&D**

**New Research Projects**

Prodyut Ranjan Chakraborty, Assistant Professor, Department of Mechanical Engineering, has been sanctioned the sponsored research project “Thermal Design of PCM Cool and Warm Vest” by Defense Research & Development Organisation (DRDO), Jodhpur. The duration of the project is 2 years (2015-17).

Arun Kumar Singh, Assistant Professor, Department of Electrical Engineering, has been sanctioned the sponsored research project “Computationally efficient fixed complexity sphere decodes for multuser MIMO communications” by Science and Engineering Research Board, DST, Government of India. The duration of the project is 3 years (2016-19).

Venkata Ramana Badarla, Assistant Professor, Department of Computer Science & Engineering, has been sanctioned the sponsored research project “Energy Efficient Technologies for Smart Buildings” by the Indo-US Science and Technology Forum (IUSSTF), DST, Government of India. The duration of the project is 3 years (2016-19).

Mahesh Kumar, Assistant Professor, Department of Electrical Engineering, has been sanctioned the sponsored research project “Development of Tunable RF Filter Based on Ferroelectric Thin Film by Sputtering” by the Indian National Science Academy. The duration of the project is 3 years (2016-19).

Ambesh Dixit, Assistant Professor, Department of Physics, has been sanctioned the sponsored research project “Probing Magnetic Structures and Spin Flop transition in bulk and nanostructured FeVO₄ Multiferroic System” by Department of Science and Technology, Government of India. The duration of the project is 3 years (2016-19).
**Research Publications**

**Department of Chemistry**


**Department of Biology**


**Conference Papers**


**Department of Humanities & Social Sciences**

**Journal Articles**


**Department of Mathematics**

**Journal Articles**


Conference Papers


Book Chapters


Department of Mechanical Engineering

Journal Articles


Book Chapters


Department of Physics

Journal Articles


Conference Papers


**Awards & Recognitions**

*Rakesh K. Sharma's research placed on cover of ChemCatChem, May 2016*

The cover shows the interface between the traditional and scientific applications of clay. In their communication, V. K. Soni and R. K. Sharma show the smart utilization of clay as a heterogeneous catalyst by nanometal intercalation for the selective hydrogenation of squalene into squalane under solvent free conditions. Squalane is an important ingredient in the cosmetic, nutraceutical, and pharmaceutical industries. Also, it has been used as a model compound for the hydrocracking of crude and microalgae oil. Thus, a series of green catalysts were prepared. The Pd-nanoparticles-intercalated clay with a dominating Pd(111) facet shows highest reactivity and selectivity. The catalyst is stable with very low Pd leaching, and is recyclable without losing any significant catalytic activity. More information can be found in the communication by V. K. Soni and R. K. Sharma on page 1763 in Volume 8, Issue 10, 2016 (DOI:10.1002/cctc.201600210).

*Sushmita Jha's research placed on cover of Cellular and Molecular Life Sciences, May 2016*

From the research paper “NLR-regulated pathways in cancer: opportunities and obstacles for therapeutic interventions” authored by Sushmita Jha, Assistant Professor, Department of Biology and Nidhi Sharma, Ph.D. Student, Department of Biology, which was published in the May 2016 issue of Cellular and Molecular Life Sciences, published by Springer Verlag, the figure depicting the “Summary of NLR inflammasome complex formation (Fig. 2)” has been placed as the cover art on the journal issue. NLRs (nucleotide-binding domain, leucine-rich repeat containing receptors) are pattern recognition receptors associated with immunity and inflammation in response to endogenous and exogenous pathogen and damage associated molecular patterns (PAMPs and DAMPs respectively). Dysregulated NLR function is associated with several diseases including cancers, metabolic diseases, autoimmune disorders and autoinflammatory syndromes. In the last decade, distinct cell and organ specific roles for NLRs have been identified however; their roles in cancer initiation, development and progression remain controversial. This review summarizes the emerging role of NLRs in cancer and their possible future as targets for cancer therapeutics. Full article can be read at doi:10.1007/s00018-015-2123-8.

**IEEE Senior Member Grade Elevation to S. P. Tiwari**

Shree Prakash Tiwari, Assistant Professor, Department of Electrical Engineering, has been elevated as Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) in honour of his contributions to the profession.
Fellowships

Vidya Sarveswaran, Assistant Professor, Department of Humanities & Social Sciences, was awarded the 2016 Rachel Carson Fellowship, by Rachel Carson Center for Environment and Society at the Ludwig Maxmillian University, Munich. The Research Fellowship is supported by the Deutsches Museum and the Government of Germany.

STUDENTS

Activities & Achievements

IGNUS 2016

IGNUS, the techno-cultural student festival of IIT Jodhpur was celebrated during 25-28 February 2016. The festival was opened by famous Sitar player Shujaat Khan on 25 February 2016 with collaboration of SPICMacay. Robosoccer, Nrityansh, Clash of Bands, Robowar, Antarang, and IGNUS Open 2016 were the flagship events organised during this fest. Workshops on Android App Development, Bridge Designing, Augmented Reality, Vehicle Overhauling, Ethical Hacking, Embedded System, Entrepreneurship, Data Science & machine Learning, Serial & Wireless Communication, Placement Etiquettes, and Quadcopter also were organized during this event. Famous singer Krishnakumar Kunnath (popularly known as KK) performed during the pronite.

Also, an Alumni Meet was organized on 27 February 2016. Professor Prawal Sinha, Professor In-charge (Faculty), IIT Jodhpur, Anand Krishnan Plappally, Faculty In-charge, Alumni Relations Committee, IIT Jodhpur, and Damayanti Bhattacharya, CEO, IIT Bombay Alumni Association, addressed the Alumni of IIT Jodhpur.

“Framed 2016” Art Exhibition

“Framed” is the annual Art Exhibition of IIT Jodhpur conducted by the Media, Arts and Design Society of the Students Gymkhana, IIT Jodhpur. The main motive of ‘Framed’ is to promote and showcase the artwork done by the students of IIT Jodhpur throughout the year. This year it was organised on 13 March 2016, in the Institute. It included the Photography, Photo Editing, Posters designed by Students, and Sketches & Paintings made by the Students. For the first time, this event was opened for people outside of the Institute. There were entries from all over the country. The exhibition recorded a considerable footfall from students of other colleges and local public of Jodhpur. Mr. Ravi Dhingra, Canon Photo Mentor, who has been a judge in many national level competitions, was Chief Guest for the event.

Other Events

Hindi Kavi Sammelan and Mashaira was organized by the Literature Club, Students Gymkhana, IIT Jodhpur on 16 April 2016 at the GPRA Residential Campus of IIT Jodhpur.

As an event of Varchas, the Sports Festival of IIT Jodhpur, the Students’ Gymkhana in coordination with the Jodhpur Development Authority (JDA), organized a Mini Marathon in the city of Jodhpur on 17 April 2016. Theme of the marathon was “Run for Smart & Swach Jodhpur”.

Technical Events during IGNUS 2016

Cultural Events during IGNUS 2016

Spectators musing the art work

Felicitating Mr. Ravi Dhingra, Canon Photo Mentor
Scholarships to Students

Eight III Year B.Tech. students received academic scholarships for Summer 2016. These were:

1. Deutscher Akademischer Austauschdienst (German Academic Exchange Service) Working Internships in Science and Engineering DAAD WISE for 3 Months (from May to July, 2016)
   - Abhishek Jaju (Electrical Engineering),
   - Arnav Jindal (Computer Science & Engineering),
   - Ashutosh Gupta (Electrical Engineering),
   - Nithin Venkatesh (Computer Science),
   - Hardik Jain (Mechanical Engineering),
   - Prakhar Srivastava (Electrical Engineering), and
   - Sangram Gaikwad (System Science).

2. S. N. Bose Scholars Program of DST and the Indo-US Science and Technology Forum (IUSSTF) for 3 Months (from May to July, 2016)
   - V. Ashwin (Electrical Engineering)

Placement News

This year (2015-16) engineering, information & communication technology, and banking sector, government and public sector organizations visited IIT Jodhpur for placements. 90 Undergraduate and 6 Post Graduate students were placed with different companies. Major recruiters were C42 Engineering India Pvt. Ltd., Coal India Ltd., Cognizant Systems, D.E. Shaw India Software Pvt. Ltd., HCL Technologies, HPCL, JSW Energy Ltd., Larsen and Toubro Limited, Mahindra & Mahindra Ltd., Maxheap Technologies Pvt. Ltd., Morgan Stanley, National Engineering Industries, Samsung India Software Center (SISC), SteelWedge Technologies Pvt. Ltd., Tata Consultancy Services, and Voylla Fashions Pvt. Ltd..

Hearty Congratulations!!

Student Gymkhana

The Student Gymkhana of IIT Jodhpur, has five “Societies”, and in turn each society has several clubs. These societies, under the leadership of their respective “Secretaries” fulfil the varied interests of the students and contribute to their holistic development. The term of these office bearers is for the academic year. With Pankaj Yadav as the General Secretary of the Student Gymkhana, the students were elected on 10 April 2016 to serve for the academic year 2016-17:

1. Vijay Paliwal Secretary, Academic, Research and Management (ARM) Society
2. Yasharth Sahu Secretary, Media, Arts and Design (MAD) Society
3. Vivek Secretary, Nurturing-Understanding Technology and Science (NUTS) Society
4. Himanshu Secretary, Sports, Adventures, Games and Explorations (SAGE) Society
5. Mansi Mittal Secretary, Writing, Awareness, Vocals, Entertainment, Social (WAVES) Society

IIT Jodhpur Counselling Service

Yellow Day Celebrations

“What makes you smile”. As we get engrossed in our mundane routines, we forget to take a break and enjoy the little things in our life. What is needed is a moment when we stop and appreciate all the awesome things around us. With this motive, the Student Counselling Service of IIT Jodhpur initiated a tradition this year to dedicate one day i.e., 12 February, to appreciate the good things in our life. On this day, all members of IIT Jodhpur Community were requested to wear clothes in the shades of yellow and join for a get together in the lawns of the Academic Campus. The team had put up yellow chart papers for the members to record their thoughts on “What makes you smile”. The event was attended by the Students, Faculty Members and Staff Members of the Institute.


**World Health Day**

World Health Day was celebrated in the Institute on 7 April 2016. Student Counselling Service of IIT Jodhpur organized Health Checkup of all Students, Faculty and Staff Members. Also, informal games were also organized to make the event interesting.

![Faculty and Staff Members, and Students participating in informal games on World Health Day, 7 April 2016](image)

**NEW JOININGS**

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Designation</th>
<th>Department / Area of Work</th>
<th>Date of Joining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navratan Mal Bhandari</td>
<td>Visiting Professor</td>
<td>Research &amp; Development</td>
<td>1 January 2016</td>
</tr>
<tr>
<td>Prawal Sinha</td>
<td>Professor</td>
<td>Mathematics &amp; Faculty</td>
<td>8 February 2016</td>
</tr>
<tr>
<td>Arita Banik</td>
<td>Assistant Professor</td>
<td>Department of Computer Science &amp; Engineering</td>
<td>7 March 2016</td>
</tr>
<tr>
<td>Rajlaxmi Chouhan</td>
<td>Assistant Professor</td>
<td>Department of Electrical Engineering</td>
<td>23 May 2016</td>
</tr>
<tr>
<td>Sushmita Paul</td>
<td>Assistant Professor</td>
<td>Department of Biology</td>
<td>23 May 2016</td>
</tr>
<tr>
<td>Mayurakshi Chaudhury</td>
<td>Assistant Professor</td>
<td>Department of Humanities &amp; Social Sciences</td>
<td>6 June 2016</td>
</tr>
<tr>
<td>Ashok Kumar Khanduri</td>
<td>Deputy Registrar</td>
<td>Academics, Infrastructure Management, Stores &amp; Purchase, and Students</td>
<td>17 May 2016</td>
</tr>
<tr>
<td>Trilotama Singh</td>
<td>Junior Assistant</td>
<td>Administration</td>
<td>30 December 2015</td>
</tr>
</tbody>
</table>

**PERMANENT CAMPUS**

**67th Republic Day Celebration**

The 67th Republic Day of the nation was celebrated by the members of IIT Jodhpur Community, on 26 January 2016 on the Permanent Campus in Karwad Village. The Director hoisted the National Flag, and the National Anthem was patriotically recited by all present.

Students presented their thoughts on the importance of Republic Day, urgent need to curb the societal ills and working towards technology-driven societal advancement in India. Then, Students presented a cultural show with a musical performance by Sangam (the music band of students) and a street play by Nukkad (the drama group of students). The General Secretary of Student Gymkhana, IIT Jodhpur, proposed a Vote of Thanks. Thereafter, music, drawing and musical chairs competitions were organized for the children of IIT Jodhpur employees, and prizes were given to the winners.

A visit was arranged to the ongoing construction site of various buildings in the Permanent Campus of IIT Jodhpur. Students, Staff Members and Faculty Members, present for on the occasion, visited the site. The program was followed by lunch. Earlier in the morning, the National Flag was hoisted at the Academic Campus, and the GPRA and BSNL Residential Campuses.

![Flag Hoisting in Permanent Campus](image)

![Cultural programs by IIT Jodhpur Students on Republic Day, 26 January 2016](image)
**Tree Plantation in Permanent Campus of IIT Jodhpur**

Tree plantation activity was undertaken at the Permanent Campus of IIT Jodhpur in Karwad on 21 February 2016. Around 900 neem saplings were planted jointly by the members of the IIT Jodhpur community and the Jodhpur Tree Plantation and Environment Protection Committee (JTPEPC), led by Sri M. S. Singhvi, Senior Advocate, (High Court of Rajasthan, Jodhpur) in the presence of Honourable Justice Sandeep Mehta, (Sitting Judge, High Court of Rajasthan, Jodhpur) and distinguished members of JTPEPC. The event was attended by Faculty Members, Staff Members, and Students of IIT Jodhpur, and 20 Advocates of High Court of Rajasthan, Jodhpur.

**2nd International Day of Yoga @ IIT Jodhpur**

The Second International Day of Yoga was celebrated on 21 June 2016 at GPRA Residential Campus of IIT Jodhpur. Faculty Members, Staff Members and Students actively participated in the event.
**Extra Mural Lectures**

Professor Amitabha Ghosh, Platinum Jubilee Senior Scientist, The National Academy of Sciences, India, and Former Director of IIT Kharagpur, delivered a lecture on “Gravitation Inertia and the Universe: The amazing consequences of a relook into the Newton’s laws” on 1 February 2016.

**Special Lecture**

A special public lecture was delivered by Jerry M. Hultin, Chairman, Board of Directors, and Co-Founder, Global Futures Group, USA, on “REBUILDING CITIES: A holistic approach” on 9 February 2016. Jerry Hultin also served as the 15th President of the Polytechnic Institute of New York University.

**Distinguished Lecture**

A distinguished lecture on “The Development of Temple Architecture in India” was delivered by Dr. Chithra Madhavan, a renowned archaeologist and historian on 29 January 2016.

**Vanguard Lectures**

Professor Navneet Arora, Professor, Department of Mechanical and Industrial Engineering, Indian Institute of Technology Roorkee, delivered a lecture on “Excellence in Engineering and Expectations from an Engineer” on 07 January 2016.

Mr. Anil Bhansali, MD, Microsoft India (R&D) Private Limited and General Manager, Cloud & Enterprise, Microsoft India Development Center, and Mr. Prashant Gupta, Director in Microsoft Cloud & Enterprise Division, Microsoft India Development Center, spoke on “Advanced Analytics and Machine Learning on Cloud – Creating impact for Education, Healthcare and other domains” on 25 January 2016.

**GIAN Program**

1. The Third Course under GIAN Program on “Fundamentals of Applied Vehicle Dynamics and Chassis Systems” was organized at IIT Jodhpur during 12-23 January 2016. Professor B. Ravindra (IIT Jodhpur) and Professor Raghu Echempati (Kettering University) were the resource persons.

2. The Fourth Course under GIAN Program on “Advanced Digital VLSI Circuit Design” was organized at IIT Jodhpur during 7-18 March 2016. Professor Suresh Gundapaneni (IIT Jodhpur) and Professor Manoj Sachdev (University of Waterloo, Canada) were the resource persons.

**Conferences**


2. National Conference on Semiconductor Materials and Devices was jointly organized by IIT Jodhpur, Defence Lab Jodhpur, and Semiconductor Society of India at IIT Jodhpur during 4-6 March 2016.

**Undergraduate Research Initiative**

The Undergraduate Research Initiative (UGRI) Program of IIT Jodhpur provides an effective platform to the students to engage in research with Faculty Members of the Institute. Also, students can get a chance to develop valuable mentorship through the guidance of experienced Faculty Members of the Institute.
In 2016, 23 students were selected from a large pool of applicants, on the basis of the merit of the proposal submitted. The program was organized from 16 May to 15 July, 2016. During the program, a remuneration of Rs. 8,000 per month, was given as stipend to the participating students, along with an amount upto Rs. 1,000 for preparing posters and reports.

WOMEN CELL @ IITJ

Celebration of 2016 International Women’s Day

2016 International Women’s Day was celebrated at the Indian Institute of Technology Jodhpur on 8 March 2016. The program was organized by Women’s Cell, IIT Jodhpur. Honourable Justice Jaishree Thakur, Sitting Judge of Rajasthan High Court, Jodhpur, graced the occasion as the Chief Guest and delivered the keynote address.

The Women’s Cell, IIT Jodhpur, organized Logo Design and Slogan Writing Competitions for their Students and Employees, before the day. During this program, Prizes and Certificates of Appreciation were given away to the Winners and Runners up. A memento was presented to the Chief Guest. On this day, the Women’s Cell, IIT Jodhpur adopted an official logo and a slogan, which was released by the Chief Guest. They were the prize winning contributions from the Logo Design and Slogan Writing Competitions organized by the Women’s Cell, IIT Jodhpur. Thereafter, a short video was screened on “Contribution of Women”. The event concluded with a visit to the exhibition of the entries received in Logo Design and Slogan Writing Competitions organized for the occasion.

Workshop on “Gender Intelligence”

The Women Cell of the Institute organized a workshop on “Gender Intelligence” during 5-7 May 2016, for all employees of IIT Jodhpur. The workshop was conducted by Ms. Rashmi Datt and Ms. Mona Dutta from Dialog Services, Gurgaon. The first part of the workshop focused on assertive training aspect for women, which was attended by all women employees of the Institute. The second part of the workshop was for both men and women employees. The workshop was attended by the Faculty Members and Staff Members, including Members of Women Cell.
Workshop on “Gender Intelligence” Part 1 - Assertive training session for women

Workshop on “Gender Intelligence” Part 2 – Session on Prevention of Sexual Harassment (PoSH)

Participants of the Workshop on “Gender Intelligence” with Resource Persons

Other Events

A lecture on Recruitment Rules was organized in the Institute on 11 May 2016. Shri S. S. Nair, Deputy Secretary (Retd.), Government of India, who had several years of experience in dealing with the Recruitment Rules Division of the UPSC, spoke on the topic, interacted with the audience and addressed their queries. All Staff Members of the Institute attended the event.

DEPARTMENT IN FOCUS – Computer Science & Engineering

The primary objective of the Department of Computer Science and Engineering is to impart quality education in the field of Computer Science. The department’s vision is:

1. To expand its depth and breadth in the research and study of core Computer Science and Engineering; and
2. To continually improve teaching and research environments towards creation of valuable technical human resources.
3. To establish strong industry – academia partnership to augment classroom discussions with practical hands-on experience.

The Department is currently offering Bachelor of Technology (B.Tech.) Program with the aim to develop core competence in Computer Science and Engineering among the students, and to prepare them to carry out research and development work. Every year, 40 students are admitted to the Program through the Joint Entrance Examination (Advanced). Currently, the graduated of the Program are placed in reputed industries within India and undergoing higher studies in reputed institutes and universities in India and abroad.

The Department has research interests in the areas of Computer Science and Engineering. Also, it offers the Doctor of Philosophy (Ph.D.) program is offered with the goal of producing state-of-the-art researchers. Ph.D. students are working in the areas of video analytics, image understanding, cloud computing, document analysis, and internet of things. Presently, the Department has 10 Ph.D. Students. To strengthen its core competence, the Department is also looking for new Faculty Members in all areas of Computer Science and Engineering. Prospective candidates are encouraged to visit our recruitment page to know more about the procedure: http://iitj.ac.in/faculty/facultypositions.
Also, the Department is keen to collaborate with industry and academia. At present, research projects are underway with All India Institute of Medical Science (AIIMS), Jodhpur, and Department of Science and Technology, Government of India. Moreover, the Department is in close contact with industry leaders, like Microsoft, IBM, Intel, and TCS. In the near future, the Department is planning to move towards Outcome Based Education (OBE) along with a strong industry-academia partnership.

**People**

The Department has four regular Faculty Members and two Adjunct Faculty Members working in different areas.

<table>
<thead>
<tr>
<th>Name of the Faculty Member</th>
<th>Designation</th>
<th>Research Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venkata Ramana Badarl</td>
<td>Assistant Professor &amp; Head</td>
<td>Wireless Networks and Cloud Computing</td>
</tr>
<tr>
<td>Gaurav Harit</td>
<td>Assistant Professor</td>
<td>Image and Video Analysis</td>
</tr>
<tr>
<td>Chiranjoy Chattopadhyay</td>
<td>Assistant Professor</td>
<td>Computer Vision</td>
</tr>
<tr>
<td>Aritra Banik</td>
<td>Assistant Professor</td>
<td>Computational Geometry</td>
</tr>
<tr>
<td>Venkatesh Raman</td>
<td>Professor, The Institute for Mathematical Sciences, Chennai</td>
<td>Parameterized Complexity and Exact Exponential, Time Algorithms, Succinct (Space Efficient) Data Structures, Algorithms for satisfiability, and Sorting and Selection and related problems</td>
</tr>
<tr>
<td>Manindra K. Agarwal</td>
<td>Professor, IIT Kanpur</td>
<td>Complexity Theory, and Computational Number Theory</td>
</tr>
</tbody>
</table>

The department has six Technical Staff Members working in automation and networking areas.

**Infrastructure**

Currently, the Department has two laboratories, namely Multimedia Laboratory, and Networking Technologies Laboratory, used extensively in teaching and research.

**Collaboration**

The department is committed towards improving the Institute's outreach through all the stages of technology development, starting from conceptualization to commercialization, and thereby striving towards creation of knowledge in specialized domains. The Department’s mission is to develop strong and sustainable partnerships with research laboratories, academic institutions, industry, and entrepreneurs to meet the aspirations of the Faculty Members and Students.

The Department is looking forward to work on problems that throw up an intellectual challenge and have practical, impactful applications. Along with this technology development initiatives, exploration of an idea related to process and design improvement is of considerable interest. The Department is seeking such partnerships, which recognise and capitalize on the relative strengths of the academia and industry. To achieve these goals, the Department is focusing on:

1. Development of strong industry collaborative in research, and specialized human resource development;
2. Identifying and protecting intellectual property; and
3. Developing and nurturing international linkages for research and development.

**Outreach**

The Department organized six departmental seminars, two special lectures and a lecture series on Machine Learning by industry experts, during January – June 2016.