खम्मा घणी...!!

भरतीय प्रौद्योगिकी संस्थान जोधपुर

॥ त्वं ज्ञानमयो विज्ञानमयोऽसि ॥

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Khamma Ghani...!!

Indian Institute of Technology Jodhpur

दूसरा पहर!

इस वर्ष का दूसरा पहर काफ़ी सक्रिय रहा है। संस्थान को अपने पहले दो पी.एच.डी. प्राप्त हुये!! हमें जैव प्रौद्योगिकी विभाग (विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार) द्वारा स्थापति जैव प्रौद्योगिकी विभाग – अखिल भारतीय प्रौद्योगिकी संस्थान जैव ऊर्जा केंद्र का एक अहम हिस्सा बनने का गौरव प्राप्त हुआ। संकाय सदस्यों द्वारा प्रस्तवित 4 नये प्रायोजित अनुसंधान परियोजनाओं को स्वीकृति मिली। इस छमाही में हमारे संकाय सदस्यों ने 43 शोध पत्र, 1 पुस्तक अध्याय, 8 सम्मेलन पत्र, एवं 1 संपादित पुस्तक प्रकाशित किये। साथ ही हमारे छात्रों ने डेनमार्क में आयोजित फ़ोटोग्राफ़ी प्रदर्शनी में अपनी प्रतिभा का अद्भुत परिचय देकर हमें गौरवान्वित किया। इस बार के स्वतंत्रता दिवस का राष्ट्रपर्व अपने स्थाई परिसर में मनाकर, हमने अपने नये घर में जाने की तैयारी शुरू कर दी। खुशी इस बात की भी है कि हमें 5 नये संकाय सदस्यों व कुलसचिव का अपने परिवार में स्वागत कर शामिल किया। संस्थान के बाह्य गतिविधियों में वृद्धि करते हुये हम मानव संसाधन मंत्रालय के GIAN (Global Initiative for Academic Networks) और राष्ट्रीय आविष्कार अभियान नामक परियोजनाओं के सक्रिय हिस्सा बने।

कामना करते हैं कि नव वर्ष 2016 हम सबके लिये मंगलमय और प्रगतिशील सिद्ध होगा।

क्षेमा प्रकाश (संपादक)

BIG NEWS

First set of Ph.D. Theses

IIT Jodhpur opens its account, with three students successfully defending their Ph.D. theses:

S. No.	*Name of the Student*	*Title of Thesis*	*Supervisor*	*Department*	*Date of Defense*
1.	Shrivishal Tripathi	Analysis and Design of Wideband Fractal Antennas for Portable UWB Applications	Akhilesh Mohan (IITKgp) Sandeep Yadav	Electrical Engineering	3 September 2015
2.	Heena Rathore	Improving Security in Wireless Sensor Networks Through Bio-Inspired Approaches	Venkata Ramana, B.	Computer Science & Engineering	29 October 2015
3.	Sibani Bisoyi	Bias-Stress Stability and Charge-Carrier Trapping in High Performance Organic Thin-Film Transistors	Shree Prakash Tiwari	Electrical Engineering	16 December 2015

R&D

IIT Jodhpur, one of the five IITs in DBT-Pan IIT Center for Bioenergy

The Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India, and five IITs, namely, IIT Bombay, IIT Kharagpur, IIT Roorkee, IIT Guwahati, and **IIT Jodhpur**, have come together to launch a virtual Center for Bioenergy. IIT Bombay will coordinate the activities of this virtual center. The main objective of this Center is to develop advanced technologies in the area of biofuels, paving the way for a sustainable solution to the energy crisis. Also, the Center aims to develop a mutually beneficial relationship with the bio-energy industry in India.

V. Narayanan, Coordinator (Research & Development), IIT Jodhpur, represented the Institute at the signing of the Memorandum of Agreement (MoA), at IIT Bombay on 3 September 2015.

MoA Signing

Faculty Members at IIT Jodhpur working on Bio Fuels

Biomass, or bio-energy, has been acknowledged as a renewable energy source that can replace fossil fuels, with the added bonus that the biomass can absorb carbon dioxide from the atmosphere and reduce the greenhouse effect. Bio-fuel, obtained either from microbial fermentation or from the pyrolysis of biomass in an inert gas atmosphere, has a significant appeal for use in transportation fuels, both economically and technologically. Algae can produce more oil than other biofuel feed stocks. The bottle neck of this technology is to devise cultivation methods for algae which can support higher growth rates and oil productivities, efficient methods to convert algae oil to fatty acid methyl esters (biodiesel) or to develop a "Right Catalyst" that can convert biomass to fuel (bio) for the current technology.

"Catalytic Upgrading of Algae Biomass to Transport Fuel" is the project Rakesh K. Sharma, Assistant Professor is working on. This research aims to develop new and efficient heterogeneous catalytic systems for conversion of algae biomass to transport fuel via tandem hydrocracking followed by Hydrodenitrogenation and/or hydrodeoxygenation processes. These heterogeneous catalytic systems based on metals nanoparticles supported/intercalated/layered in zeolites and clays. Successful catalysts are aimed to be green, recyclable and scalable (kilogram level). These catalysts will be sulphide free non nobel metals catalysts. In next phase, the substrate applications will be extended from algal-oil to edible and non-edible oils. The reactions will be essentially carried out at two operating conditions, for mild (50-200°C, 100 bar) and deep hydrotreatment (200-350°C, 200 bar). Mechanistic studies of these catalytic processes will be focal point to design a better catalyst.

"Development of low cost Microbial carbon capture cells for power generation and algae cultivation" is the project Meenu Chhabra, Assistant Professor, Department of Biology, is working on. Bio-fuels from algae have a potential to completely replace fossil based fuels and provide energy security for the future. However, the cost of algae bio-fuels is still too high for commercial application. In this context, a process for the production of algae and electrical energy using microbial carbon capture (MCC) cells is proposed. In MCC cells, the process of algae biomass degradation complements the process of algae biomass production with concomitant power generation.

These two projects together, which are funded by Department of Biotechnology, Government of India, are likely to offer an exciting technology proposition of offering non-fossil fuels for the nation.

New Research Projects

Ambesh Dixit, Assistant Professor, Department of Physics, has been sanctioned the sponsored research project "Design and development of high capacity and low cost Li2TMSio4 (TM=transition metals) silicate materials for future rechargeable lithium ion battery" by the Department of Science & Technology (DST), Government of India. The duration of the project is 2 years (2015-17).

Mahesh Kumar, Assistant Professor, Department of Electrical Engineering, has been sanctioned the sponsored research project "Development of MEMS based gas sensors using RF sputtered transition metal dopen ZnO Nanostructures" by the Science and Engineering Research Board, DST, Government of India. The duration of the project is 3 years (2015-18).

Shree Prakash Tiwari, Assistant Professor, Department of Electrical Engineering, has been sanctioned the sponsored research project "Design of a sensor signal conditioning system(I) & multiprocessor scheduling algorithms using control theoretic approach(II)" by the Department of Electronics & Information Technology (DeitY), Government of India. The duration of the project is 5 years (2015-20). Further, his proposal on "Encapsulation of Organic devices by atomic layer deposition" was admitted by Defense Research & Development Organization (DRDO), Jodhpur, under CARS scheme. The duration of the project is 18 months.

RESEARCH PUBLICATIONS

Department of Biology

Journal Articles

1. Chhangani,D., Endo,F., Amanullah,A., Upadhyay,A., Watanabe,S., Mishra,R., Yamanaka,K., and **Mishra,A.,** (2016), Mahogunin ring finger 1 confers cytoprotection against mutant SOD1 aggresomes and is defective in an ALS mouse model, Neurobiology of Disease, Volume 86, Pp. 16–28, http://doi.org/10.1016/j.nbd.2015.11.017.
2. Dubey,K., Anand,B.G., Badhwar,R., Bagler,G., Navya,P.N., Daima,H.K., and **Kar,K.,** (2015), Tyrosine and tryptophan-coated gold nanoparticles inhibit amyloid aggregation of insulin, Amino Acids, Volume 47, Issue 12, Pp. 2551-2560, http://doi.org/10.1007/s00726-015-2046-6.
3. Kumar,D., Pal,S., **Chhabbra,M.**, and Harinipriya,S., (2015), Separation of Enantiomers of Alanine from Racemic Mixture by Polycrystalline Metal Surfaces - A Spectroelectrochemical Approach, ECS Transactions, Volume 66 Issue 32, Pp. 33–43, http://doi.org/10.1149/06632.0033ecst.
4. Upadhyay,A., Amanullah,A., Chhangani,D., Mishra,R., and **Mishra,A.,** (2015), Selective Multifaceted E3 Ubiquitin Ligases Barricade Extreme Defense: Potential Therapeutic Targets for Neurodegeneration and Ageing, Ageing Research Reviews, Volume 24, Part B, Pp. 138–159. http://doi.org/10.1016/j.arr.2015.07.009.

5. Upadhyay,A., Amanullah,A., Chhangani,D., Mishra,R., Prasad,A., and **Mishra,A.,** (2015), Mahogunin Ring Finger-1 (MGRN1), a Multifaceted Ubiquitin Ligase: Recent Unraveling of Neurobiological Mechanisms, Molecular Neurobiology, Pp. 1–13, http://doi.org/10.1007/s12035-015-9379-8.

Department of Chemistry

Journal Articles

1. Bondarenko,G.N., Ganina,O.G., **Sharma,R.K.**, and Beletskaya,I.P., (2015), Catalytic activity of Pd catalysts on different supports in hydrogenation of 1-phenylethenylphosphonic acid, Russian Chemical Bulletin, Volume 63, Issue 8, Pp. 1856–1859, http://doi.org/10.1007/s11172-014-0676-6.
2. **Debnath,A.,** Wiegand,S., Paulsen,H., Kremer,K., and Peter,C., 2015, Derivation of coarse-grained simulation models of chlorophyll molecules in lipid bilayers for applications in light harvesting systems, Physical Chemistry Chemical Physics, Volume 17, Issue 34, Pp. 22054-22063, http://doi.org/10.1039/C5CP01140J
3. Goudar,R., **Gupta,R.,** Kulkarni,G.U., and Inamdar,S.R., (2015), Rotational Diffusion of a New Large Non Polar Dye Molecule in Alkanes, Journal of Fluorescence, Volume 25, Issue 6, pp 1671-1679, http://doi.org/10.1007/s10895-015-1654-6.
4. **Gupta,R.,** Siddhanta,S., Mettela,G., Chakraborty,S., Narayana,C., and Kulkarni,G.U., (2015), Solution processed nanomanufacturing of SERS substrates with random Ag nanoholes exhibiting uniformly high enhancement factors. RSC Advances, Volume 5, Issue 103, Pp. 85019–85027, http://doi.org/10.1039/C5RA17119A.
5. Kiruthika,S., **Gupta,R.,** Anand,A., Kumar,A., and Kulkarni,G.U., (2015), Fabrication of Oxidation Resistant Metal Wire Network Based Transparent Electrodes by a Spray-Roll Coating Process. ACS Applied Materials & Interfaces, Volume 7, Issue 49, Pp. 27215–27222, http://doi.org/10.1021/acsami.5b08171.
6. Kumar,D., **Pal,S.,** Chhabbra,M., and Harinipriya,S., (2015), Separation of Enantiomers of Alanine from Racemic Mixture by Polycrystalline Metal Surfaces - A Spectroelectrochemical Approach. ECS Transactions, Volume 66, Issue 32, Pp. 33–43, http://doi.org/10.1149/06632.0033ecst.
7. Sharma,P., and **Sharma,R.K.,** (2015), Platinum functionalized multiwall carbon nanotube composites as recyclable catalyst for highly efficient asymmetric hydrogenation of methyl pyruvate. RSC Advances, Volume 5, Issue 124, Pp. 102481–102487, http://doi.org/10.1039/C5RA21790C.

Department of Computer Science & Engineering

Book Chapters

1. Ranjan,V., **Harit,G.,** and Jawahar,C.V., (2014), Learning Partially Shared Dictionaries for Domain Adaptation. In C. V. Jawahar and S. Shan (Eds.), Computer Vision - ACCV 2014 Workshops, Singapore, 1-2 November 2014, Revised Selected Papers, Part III, (Volume 9010 of the series Lecture Notes in Computer Science), Springer International Publishing, Switzerland, Pp. 247-261, ISBN 978-3-319-16633-9 (Print), 978-3-319-16634-6 (Online), retrieved from http://link.springer.com/chapter/10.1007/978-3-319-16634-6_19.

Conference Papers

1. Adil,A., **Badarla,V.,** Plappally,A.K., Bhandari,R., Sankhla,P.C., (2015), Development of affordable ICT solutions for water conservation in agriculture, in Proceedings of the 2015 7th International Conference on Communication Systems and Networks (COMSNETS), 6-10 January 2015, Bangalore, India, published by the Institute of Electrical and Electronic Engineers (IEEE), Piscataway, NJ, ISBN 978-1-4799-8439-8, Pp. 1 - 6, doi: 10.1109/COMSNETS.2015.7098716.
2. Samant,A., **Badarla,V., Yadav,S.,** Vutukuru,M., Khanna,P., Luther, E. (2015), Latency and cost requirements of systems for teaching MAC protocols, in Proceedings of 2015 Twenty First National Conference on Communications (NCC)Communications (NCC), February 27 to March 1, 2015, Indian Institute of Technology Bombay, Mumbai, published by the Institute of Electrical and Electronic Engineers (IEEE), Piscataway, NJ, ISBN 978-1-4799-6618-9, Pages: 1 - 6, doi: 10.1109/NCC.2015.7084820.

Department of Electrical Engineering

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3. Singh,S., **Fulwani,D.,** and Kumar,V., (2015), Robust sliding-mode control of dc/dc boost converter feeding a constant power load, IET Power Electronics, Volume 8, Issue 7, Pp. 1230 – 1237, http://dx.doi.org/10.1049/iet-pel.2014.0534.
4. Barala,S.S., Singh,J., Ranwa,S., and **Kumar,M.,** (2015), Radiation Induced Response of $Ba_{0.5}Sr_{0.5}TiO_3$ Based Tunable Capacitors Under Gamma Irradiation. IEEE Transactions on Nuclear Science, Volume 62, Issue 4, Pp. 1873-78, doi:10.1109/TNS.2015.2449991.
5. Ranwa,S., Kumar,M., Singh,J., Fanetti,M., and **Kumar,M.,** (2015), Schottky-contacted vertically self-aligned ZnO nanorods for hydrogen gas nanosensor applications, Journal of Applied Physics, Volume 118, Issue 3, Pp. 034509 (1-7), http://doi.org/10.1063/1.4926953.
6. Roul,B., **Kumar,M.,** Rajpalke,M.K., Bhat,T.N., and Krupanidhi,S.B., (2015), Binary group III-nitride based heterostructures: band offsets and transport properties, Journal of Physics D: Applied Physics, Volume 48, Issue 42, Pp. 423001 (1-21). http://doi.org/10.1088/0022-3727/48/42/423001.

7. Singh,J., Ranwa,S., Akhtar,J., and **Kumar,M.,** (2015), Growth of residual stress-free ZnO films on SiO2/Si substrate at room temperature for MEMS devices, AIP Advances, Volume 5, Issue 6, Pp. 067140 (1-8). http://doi.org/10.1063/1.4922911.

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3. Jakhetiya,V., Lin,W., Jaiswal,S.P., **Tiwari,A.K.,** and Guntuku,S.C., (2015), Observation model based perceptually motivated bilateral filter for image reconstruction, in Proceedings of 2015 IEEE International Conference on Digital Signal Processing (DSP), Pp. 201–205, http://doi.org/10.1109/ICDSP.2015.7251859.
4. Rathore,N., Bhartiya,P., and **Fulwani,D.,** (2015), Development of a Programmable Emulator for a Photovoltaic Source, SAE Technical Paper No. 2015-28-0081, Warrendale, PA: SAE International.

Department of Humanities and Social Sciences

Journal Articles

1. Mamudu,H.M., Veeranki,S.P., **John,R.M.,** Kioko,D.M., and Ogwell Ouma, A.E., (2015), Secondhand Smoke Exposure Among Nonsmoking Adolescents in West Africa. American Journal of Public Health, Volume 105, Issue 9, Pp. 1823-1830, http://doi.org/10.2105/AJPH.2015.302661.
2. Veeranki S.P., Mamudu H.M., **John R.M.,** and Ouma A.E.O., (2015), Prevalence and correlates of tobacco use among school-going adolescents in Madagascar, Journal of Epidemiology and Global Health, Volume 5, Issue 3, Pp. 239-47, doi:10.1016/j.jegh.2014.12.005.
3. **Sarveswaran,V.,** (2015), An Elephant in the Desert, Trumpeter, Volume 31, Issue 1, Pp. 76–80, http://trumpeter.athabascau.ca/index.php/trumpet/article/view/1401.

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1. Owusu,D. and **John,R.M.,** (2015), Regional differences and determinants of secondhand smoke exposure among never-smoking youth, Presented at the 143rd Annual Meeting and Exposition of the American Public Health Association (APHA), held at APHA, Chicago, from 31 October 2015 – 4 November 2015, retrieved from https://apha.confex.com/apha/143am/webprogram/Paper329755.html.
2. Pal,D., Adhikari,B., and **Mazumdar,M**., (2015), Strategic network formation involving social relations: Enmity and Friendship, in Proceedings of 2015 7th International Conference on Communication Systems and Networks (COMSNETS), 6-10 January 2015, Bangalore, India, published by the Institute of Electrical and Electronic Engineers (IEEE), Piscataway, NJ, ISBN 978-1-4799-8439-8, Pp. 1–6, http://doi.org/10.1109/COMSNETS.2015.7098734.

Edited Books

1. Slovic,S., Rangarajan,S., and **Sarveswaran,V. (Eds.)**, (2015), Ecocriticism of the Global South (Ecocritical Theory and Practice), Pp. 282. Maryland: Lexington Press.

Department of Mathematics

Journal Articles

1. **Sharma,P.,** (2015), Uniform Convergence and Dynamical Behavior of a Discrete Dynamical System, Journal of Applied Mathematics and Physics, Volume 3, Issue 7, Pp. 766–770. http://doi.org/10.4236/jamp.2015.37093.
2. Dani,S.G., Shah,R. and **Sharma,P.**, (2015), Affine almost automorphic actions on compact nilmanifolds, Ergodic Theory and Dynamical Systems, Volume 35, Issue 6, Pp. 1783-1794. http://dx.doi.org/10.1017/etds.2014.19.

Department of Mechanical Engineering

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1. Patidar,D., Tiwari,S., Sharma,P.K., **Chandra,L.**, and Shekhar,R., (2015), Open Volumetric Air Receiver Based Solar Convective Aluminum Heat Treatment Furnace System, Energy Procedia, Volume 69, Pp. 506–517, http://doi.org/10.1016/j.egypro.2015.03.059.
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5. Singh,G., Saini,D., and **Chandra,L.,** (2015), On the evaluation of a cyclone separator for cleaning of open volumetric air receiver, Applied Thermal Engineering (Online First), http://doi.org/10.1016/j.applthermaleng.2015.10.087.
6. Singh,G., Saini,D., Yadav,N., Sarma,R., **Chandra, L.,** and Shekhar,R., (2015), Dust Deposition Mechanism and Cleaning Strategy for Open Volumetric Air Receiver Based Solar Tower Sub-systems. Energy Procedia, Volume 69, Pp. 2081–2089, http://doi.org/10.1016/j.egypro.2015.03.222.

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Department of Physics

Journal Articles

1. **Alok,A.K.**, **Banerjee,S.**, Kumar,D., Sankar,S.U., and London,D., (2015), New-physics signals of a model with a vector-singlet up-type quark. Physical Review D, 92(1), 013002 (1-16), http://doi.org/10.1103/PhysRevD.92.013002.
2. **Alok,A. K.**, **Banerjee,S.**, and Uma Sankar,S., (2015), Re-examining 2β and Δmd from evolution of View the MathML Bdo mesons with decoherence, Physics Letters B. Volume 749, Pp. 94-97, http://doi.org/10.1016/j.physletb.2015.07.061.
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4. **Banerjee,S., Alok,A.K.,** Srikanth,R., and Hiesmayr,B.C., (2015), A quantum-information theoretic analysis of three-flavor neutrino oscillations, The European Physical Journal C, Volume 75, Issue 487, Pp. 1-9, http://doi.org/10.1140/epjc/s10052-015-3717-x
5. **Dixit,A.**, Ramchandran,B., Kuo,Y., and Lawes,G., (2015), Magnetic Structure and Thermal Conductivity of FeVO4 Multiferroic, IEEE Transactions on Magnetics, Volume 51, Issue 11, Paper no. 2504304, http://doi.org/10.1109/TMAG.2015.2447155.
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10. Tiwari,B., **Dixit,A.**, Naik,R., Lawes,G., and Rao,M.S.R., (2015), Magnetostructural and magnetocaloric properties of bulk LaCrO3 system, Materials Research Express, Volume 2, Issue 2, Paper no. 026103, http://doi.org/10.1088/2053-1591/2/2/026103.
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13. Tripathi,B., Tripathi,G**., Dixit,A.,** and Vijay,Y.K., (2015), Luminescence tuning in a ZnS:Mn system by C6+ (80 MeV) ion beam irradiation. Radiation Effects and Defects in Solids, Volume 170, Issue 5, Pp. 399-406, http://doi.org/10.1080/10420150.2014.983106.

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1. **Alok,A.K., Banerjee,S.,** and Sankar,S.U., (2015), Effect of decoherence on clean determination of sin 2β and Δm_d, in Proceedings of 2015 European Physical Society Conference on High Energy Physics (EPS-HEP 2015): Vienna, Austria, 22-29 July 2015, http://pos.sissa.it/archive/conferences/234/578/EPS-HEP2015_578.pdf.
2. **Alok,A.K., Banerjee,S.,** Sankar,S.U., Kumar,D., and London,D., (2015), New-physics signals of a model with an isosinglet vector-like t'quark, in Proceedings of 2015 European Physical Society Conference on High Energy Physics (EPS-HEP 2015): Vienna, Austria, 22-29 July 2015, http://pos.sissa.it/archive/conferences/234/579/EPS-HEP2015_579.pdf.

AWARDS & RECOGNITIONS

Ashutosh K. Alok and Subhashish Banerjee receive international recognition for their work on Probing Signatures of Quantum Gravity

Ashutosh K. Alok and Subhashish Banerjee from Department of Physics at IIT Jodhpur along with S. Uma Sankar (IIT Bombay) are working on "Probing signatures of quantum gravity like background at LHCb and B-factories". This work opened the doors for probing some very fundamental aspects of nature such as quantum gravity background by measuring observables in flavor physics which are mainly used to probe new physics models beyond Standard Model. Their work "*Re-examining sin 2β and Δm_d from evolution of B^0_d mesons with decoherence*" (http://www.sciencedirect.com/science/article/pii/S0370269315005717) has been published in Physics Letters B, a renowned journal in the field of particle physics. Also, the work was presented at the prestigious European Physical Society's Conference on High Energy Physics, held at the University of Vienna, Austria in July 2015.

The measurement of sin(2β) is the first signal for Charge-Parity (CP) violation outside the neutral K meson system. The precision measurement of its value is the corner stone in establishing the Cabibbo–Kobayashi–Maskawa (CKM) mechanism for CP violation. The success of CKM mechanism resulted in Nobel Prize for physics in 2008. Quantum coherence plays a crucial role in the determination of many such observables in neutral meson systems. But, any real system interacts with its environment and this interaction can lead to a loss of quantum coherence, that is, decoherence. The environmental effects may arise at a fundamental level, such as the fluctuations in quantum gravity space-time background. With the inclusion of the decoherence effects which characterizes the effect of the background, they show that the measured values of important observables in B meson systems, such as sin(2β), can get masked! They also suggest a number of methods which will enable clean determination of these observables along with the decoherence parameter quite easily at the LHCb or B-factories.

2014 Young Scientist Award of BRSI to Amit Mishra

Amit Kumar Mishra, Assistant Professor, Department of Biology, IIT Jodhpur, has been conferred the *2014 Young Scientist Award* by the Biotech Research Society of India (BRSI). This honour was conferred on him during the International Conference on New Horizons in Biotechnology at CSIR-National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram, held during 22-25 November 2015.

For his research contributions, the New York Academy of Sciences has launched Amit Mishra's profile on their website.

2016 MRSI Medal to Mahesh Kumar

Mahesh Kumar, Assistant Professor, Department of Electrical Engineering, has been selected by the Materials Research Society of India (MRSI) to receive the MRSI Medal for 2016. The medal will be presented to him during the Annual General Meeting of MRSI to be held at Jorhat, Assam, during 18-20 February 18-20 2016.

The MRSI is an interdisciplinary society founded in 1989 by Bharat Ratna Professor C. N. R. Rao, who is dedicated to the field of materials science and engineering in India. The Society is committed to stimulate and integrate research in the field of materials for rapid industrial progress in the country.

STUDENTS

Activities & Achievements

IIT Jodhpur students qualify for SAE BAJA 2016

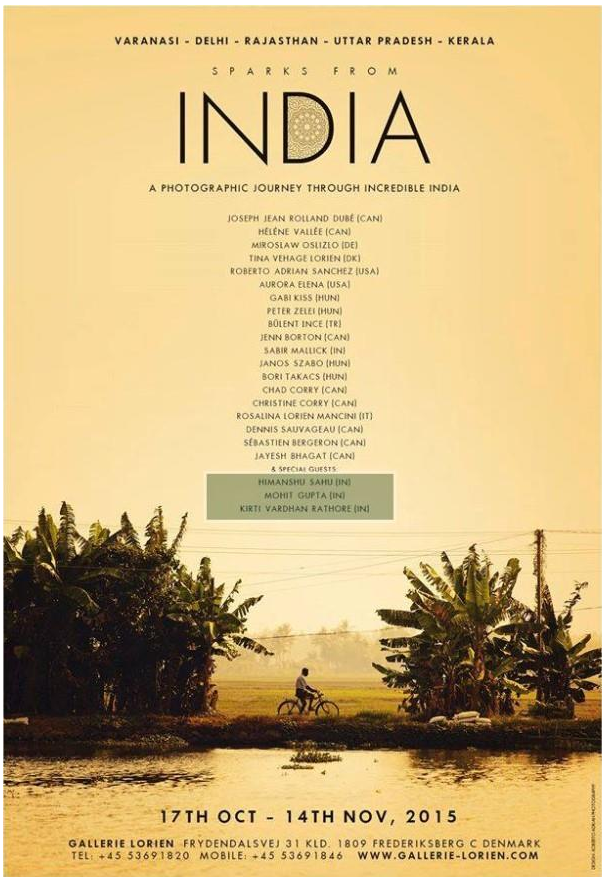
Team VAAYU 2.0 of Automobile club at IIT Jodhpur is participating in BAJA 2016 - an all-terrain vehicle design competition organised by SAE India. The virtual round of competition was held at Chitkara University, Patiala, Punjab on 10th and 11th July 2015. VAAYU 2.0 qualified for the final event with scoring of 92.64/100 in presentation component which is 13th rank out of 152 teams qualifying and about 400 teams participating in the event. After qualifying in virtual round, the team will be gearing up for developing an all-terrain vehicle to participate in the final round of competition which will be held at NATRIX, Pithampur, Madhya Pradesh, during February 2016.

Photographic Talent of IIT Jodhpur Students showcased at a photography exhibition in Denmark

Photographic talent of three students of IIT Jodhpur, was showcased at a photography exhibition "Sparks from India: A photographic journey through incredible India", in Denmark. These students are:

1. Himanshu Sahu, B.Tech. Class of 2015 (Mechanical Engineering),
2. Mohit Gupta, III Year B.Tech. (Electrical Engineering), and
3. Kirti Vardhan Rathore, IV Year B.Tech. (Computer Science & Engineering).

Their work has been on display at Gallerie Lorien in Denmark from 17 October to 14 November, 2015, along with the works of other professional artists from around the world.



Second Position in Techfest @ IIT Bombay

Two of the II year B.Tech. (Computer Science & Engineering) students, Abhinav Rai and Archil Kumar Srivastava secured overall 2nd position in the event *"Battle Code"*, in Techfest held at IIT Bombay from 26-28 December 2015.

NEW JOININGS

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

Name	Designation	Department / Area of Work	Date of Joining
Suresh Gundapaneni	Assistant Professor	Department of Electrical Engineering	29 June 2015
Chiranjoy Chattopadhyay	Assistant Professor	Department of Computer Science & Engineering	13 July 2015
Gaurav Ameta	Associate Professor	Department of Mechanical Engineering	13 July 2015
Suril Vijaykumar Shah	Assistant Professor	Department of Mechanical Engineering	14 July 2015
Ritu Gupta	Assistant Professor	Department of Chemistry	7 August 2015
S. Balachandra Iyer	Registrar	Administration	9 November 2015

PERMANENT CAMPUS

69th Independence Day Celebration

IIT Jodhpur celebrated the 69th Independence Day on 15 August 2015 at its Permanent Campus in Karwad Village. The Director hoisted the National Flag, while the National Anthem was sung with affection and devotion to the mother land, by all present. The Director urged the gathering that sincere commitment to one's goal be ensured to serve the nation. On this occasion, the First Building at the Permanent Campus of IIT Jodhpur was inaugurated. The opportunity to do the honours was presented to the three junior most members of the IIT Jodhpur family – the youngest Faculty Member (Ritu Gupta), the youngest Staff Member (M. M. Malviya), and the youngest Student (Akash Yadav).

Activities were organized for the children of IIT Jodhpur employees. Students presented music and dance performances, and street play. Also they rendered their thoughts on the advancement of technology since Independence. The General Secretary of Students Gymkhana, IIT Jodhpur, proposed a Vote of Thanks. This was followed by tree plantation and lunch.

National Flag was hoisted at the other three Temporary Campuses earlier in the morning: Academic Campus, and the GPRA and BSNL Residential Campuses.

Inauguration of the first building at permanent campus of IITJ

Cultural program

EVENTS @ IITJ

First International Yoga Day

First International Day of Yoga was celebrated on 21 June 2015 at the GPRA Residential Campus of IIT Jodhpur. Faculty Members, Staff Members and Students took an active part in the event.

Teacher's Day

IIT Jodhpur organized a program on Teacher's Day to pay tribute to the contribution of Dr. Sarvepalli Radhakrishnan and to acknowledge the importance of Teachers towards nation building.

Coordinator (Academics) started the program by welcoming the Director, Faculty Members, and Students. On this occasion, the Coordinator (Students) delivered speech on the importance of Teacher's Day, to all present. Certificates of Academic Distinction were handed over by the Heads of Departments to the meritorious students registered in the Academic Year 2014-15.

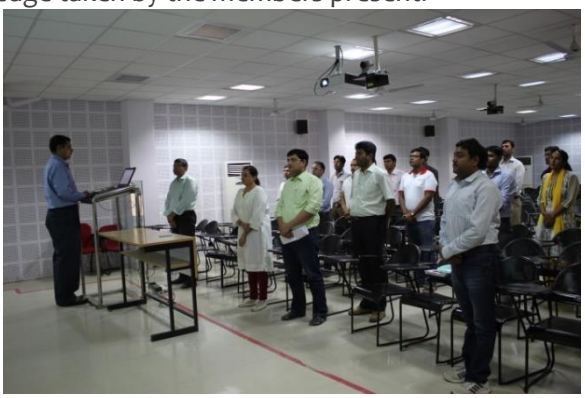
The program ended with a Vote of Thanks by Coordinator (Faculty) followed by High Tea.

Vigilance Awareness Week

Vigilance Awareness Week was observed at IIT Jodhpur during 26-31 October 2015. It concluded with a program on Preventive Vigilance as a Tool of Good Governance, where all the Offices at IIT Jodhpur presented procedures followed by them in various works. As a part of their presentations, the issues, challenges and bottlenecks faced by them at different stages were discussed, and some suggestions to overcome were received from the participating members to mitigate confusions and delays in various dealings.

On this occasion, Ridhi Aggarwal, Ph.D. Student (Computer Science & Engineering) received a token of appreciation for her presentation on the topic of the program. The program was attended by the Faculty Members, Staff Members and Students. The program concluded with a pledge taken by the members present.

Ridhi Aggarwal receiving prize



Faculty and Staff members taking the vigilance pledge

First Constitution Day

The Constitution Day was celebrated at IIT Jodhpur 26 November 2015. On this occasion, the Faculty Members and Staff Members of IIT Jodhpur came together. The program was introduced by Mr. S. Balachandra Iyer, Registrar. The Preamble of the Constitution of India was read out by Deepak Fulwani, Assistant Professor, Department of Electrical Engineering, and Kshema Prakash, Deputy Librarian, in English and हिन्दी, respectively.

Introduction to the Program

Reading of the Preamble of the Constitution

OUTREACH

MEA-IITJ Distinguished Lecture

The Institute, continuing its tradition of MEA-IITJ Distinguished Lectures, invited Ambassador Ajai Malhotra for a lecture. Ambassador Malhotra visited the Institute on 11 September 2015 and addressed the IIT Jodhpur community on "Climate Change and India".

Special Lecture

IIT Jodhpur and Department of Management Studies, Jai Narayan Vyas University, Jodhpur came together to organize a special lecture by Professor Pankaj Chandra, Member, Board of Governors, IIT Jodhpur and Former Director, IIM Bangalore, on 23 October 2015. Professor Chandra spoke on "Pivoting Indian Manufacturing Policy Differently".

Four Course Proposals approved for GIAN Program

Global Initiative for Academic Networks (GIAN) in higher education is a program of the Ministry of Human Resource Development (MHRD) to engage with accomplished scientists and entrepreneurs living abroad. Under this scheme, Short Courses will be hosted at premier Institutes in India. As on date, four of the Short Course proposals submitted by the Faculty Members of IIT Jodhpur (in collaboration with Faculty Members serving in the Institutes/Universities in other countries) have been accepted and approved by MHRD under the said program.

These courses are:

S. No.	Name of the Course	Faculty Members
1.	Synthesis and Characterization of Materials for Energy Technologies	Host Faculty: Ritu Gupta Foreign Faculty: Timothy S. Fisher
2.	Fundamentals of Applied Vehicle Dynamics and Chassis Systems	Host Faculty: B. Ravindra Foreign Faculty: Raghu Enchempati
3.	Robot Modelling and Control, and Applications to Aerial Robots	Host Faculty: Suril Vijaykumar Shah and Sudipto Mukherjee Foreign Faculty: Vijay Kumar
4.	Climate Change and Social Crisis in the Anthropocene	Host Faculty: Vidya Sarveswaran Foreign Faculty: Scott Slovic

The course on "Synthesis and Characterization of Materials for Energy Technologies" is scheduled during 12-16 December 2015, and the course on "Fundamentals of Applied Vehicle Dynamics and Chassis Systems" is scheduled during 22-28 December 2015.

Rashtriya Avishkar Abhiyan

Rashtriya Avishkar Abhiyan (RAA) is a program of the Ministry of Human Resource Development (MHRD) in pursuance of the focus on connecting school-based knowledge to life outside the school and making learning of Science and Mathematics a joyful and meaningful activity, and to bring focus on innovation and use of technology. The Rashtriya Avishkar Abhiyan (RAA) is a convergent framework that aims at nurturing a spirit of inquiry and creativity, love for Science and Mathematics and effective use of technology amongst children and encourage those who show an inclination and talent for these subjects to be encouraged and supported to heights of academic excellence and research.

The activities of Rashtriya Avishkar Abhiyan (RAA) are organized by Ananya Debnath, Faculty Member In-charge, with the support of Heads of Departments, Faculty Members, and Staff Members. Under Rashtriya Avishkar Abhiyan initiative, an "Open House for School Students" was organized on 21 November 2015 at IIT Jodhpur, which included public lectures and laboratory visits. The objectives of this event were to enable students in getting motivated and engaged in Science, Mathematics and Technology; and to provide an exposure to students, of national needs and current science.

Ishaan Vikaas Program

The idea of conducting Ishaan Vikaas Program at various IITs, IIITs, and IISERs, is to bring school children from the north-eastern regions of India into close contact with these science and technology institutes during their summer and winter vacations, with the objective of opening up young minds and give them a broad overview of the future paths they can traverse.

During 12-23 December 2015, IIT Jodhpur, for the second time in this year, successfully organized the program for a period of 12 days. In this session 41 students, accompanied by 6 teachers took part in the program. Various activities on topics such as computer programming, computer and communications skills, basics of individual disciplines, and documentaries/short films on big scientific discoveries were included during the program. Visits to various laboratories in the Institute, and to research institutes in the city, namely, Defense Research Laboratory, DRDO, Jodhpur, and Central Arid Zone Research Institute (CAZRI), Jodhpur, were also organized for these students.

Experimental Facility for Testing Solar Thermal Technologies at IIT Jodhpur

A workshop for "Discussion and Finalization of DPR for an Experimental CSP Plant at IIT Jodhpur" was organized by jointly by IIT Jodhpur, Indian Oil Corporation Limited, and Bharat Heavy Electrical Limited, during 8-9 July 2015 at IIT Jodhpur. Being located on the Sun-city Jodhpur, and with 320 days of bright sunshine, IIT Jodhpur is working on both Solar Photovoltaic and Concentrated Solar Thermal Technologies. The objective is development of end-to-end Solar Thermal Technologies. To achieve this goal, among other initiatives, a joint Memorandum of Collaboration (MoC) is signed in October 2011 between IIT Jodhpur, Indian Oil Corporation Limited (IOC-R&D) and Bharat Heavy Electricals Limited (BHEL). Setting-up of an experimental Concentrated Solar Thermal Power (CSP) prototype test-bed at IIT Jodhpur is envisaged. As the starting point, a Detailed Project Report (DPR) for the planned CSP test-bed is being prepared. This DPR aims to consolidate the required steps towards achieving this goal. It is expected that the gained insight to these technologies will allow their adaptation in arid Indian conditions, like, in the state of Rajasthan.

Public Lecture organized by Women Cell

The Women Cell of the Institute organized a lecture on "Sexual harassment at work place and precedent law" by Advocate Dr. Nupur Bhati on 18 September 2015. Advocate Bhati, a serving lawyer in Rajasthan High Court, elucidated the provisions under the Sexual Harassment at Workplace Act, 2013 and touched upon some cases as examples. The lecture was attended by the Faculty Members, Staff Members, Students, and Members of Women Cell.

DEPARTMENT IN FOCUS

The Department of Humanities and Social Sciences at IIT Jodhpur operates from spaces that give us an opportunity to act as an interface between empirical and experiential knowledge systems. Playing a significant role in the academic curriculum of the young engineers, the Department offers both core and elective courses at the Bachelors, Masters, and Doctoral levels. The ability to provide tools and skills for specific aims notwithstanding, the essence of Humanities and Social Sciences involves the sensitizing of individuals. Acting as facilitators, thus, the Faculty Members engage in meaningful interactions with students and help them witness, study and understand the interplays among technology, society, and humanity. This task assumes even more significance in an educational context, where the brightest young minds of India come together.

With Faculty Members who specialize in diverse disciplines including Philosophy, Economics, Psychology and Literature, and with students from a spectrum of backgrounds, the Department provides an enriching platform, where technical education can be complemented with human and social understanding.

Academic & Research Engagements

Vidya Sarveswaran edited the two volumes with Swarnalatha Rangarajan (Associate Professor, Department of Humanities & Social Sciences, IIT Madras) and Scott Slavic (Professor and Chair of the English Department, University of Idaho, USA, and Editor of Interdisciplinary Studies in Literature & Environment (ISLE)) namely:

i. Slovic,S., Rangarajan,S., and **Sarveswaran,V. (Eds.),** (2014), *Ecoambigutiy Community and Development: Toward a Politicized Ecocriticism (Ecocritical Theory and Practice)*, Pp. 214, Maryland: Lexington Press.
ii. Slovic,S., Rangarajan,S., and **Sarveswaran,V. (Eds.),** (2015), *Ecocriticism of the Global South (Ecocritical Theory and Practice)*, Pp. 282, Maryland: Lexington Press.

Also, Vidya Sarveswaran was an invited speaker for the International Interdisciplinary Conference on Ecocriticism, Environmental Justice, and Literature, organized by the Association for the Study of Literature and Environment (ASLE) - Bangladesh Planning Committee, during 6-10 August 2015, at the University of Dhaka, Bangladesh. Her paper was titled, "The Ground Beneath their feet: The Bishnois of Rajasthan".

Mainak Mazumdar has the following academic and research engagements:

i. Research collaboration "Financial Reforms, Inflation Targeting and Growth", with Vêlayoudom Marimoutou, Professor, Greqam Research Unit, France Aix-Marseille Université, Marseille, France.
ii. Research collaboration "On Shapley Value and Inequality: Theoretical issues" with Frederic Chantreuil, Professor, Centre de Recherche en Économie et Management (CREM), University of Caen, France.

Also, Mainak Mazumdar was invited by Springer Verlag for AIDS workshop during 30 April - 2 May, 2015, to deliver a talk on 'Indian Pharmaceutical Industry: Opportunities in the domestic and International Market'. Further, his work, "Growth, Regional Disparities and Convergence Clubs in India, A sectoral Level analysis and decomposition, 1961-2009" has been selected for presentation at the 3rd DIAL conference "Barriers to Development" that took place during 2-3 July 2015, at the University of Dauphine Paris, France.

Rijo John is a Member of the Project Team, The Tobacco Policy Research Program at East Tennessee State University, USA, which conducts studies on tobacco use and policy. He attended an Informal Consultation on Emerging Research issues on Economics of Tobacco Control, organized by the World Health Organization (WHO) at their headquarters in Geneva, Switzerland, during 27-28 August 2015, as an invited participant.

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