Prajwalam

Biannual Newsletter

IIT ROPAR

Vol-3 Issue-2 (July 2014)

From the Director's Desk

It gives me immense pleasure to introduce the biannual newsletter, *Prajwalam* (Volume 3, Issue 2). IIT Ropar is one of the eight new IITs set up in 2008-09. Currently, we are functioning from a self-contained transit campus that has all the required infrastructure for teaching and research. Already, three batches of B.Tech. students have graduated from IIT Ropar. First Ph.D. degree in Mechanical Engineering was awarded in our 2nd Convocation.

Our transit campus has five hostels, three tennis courts, a football ground, a cricket ground, a volleyball court, a basketball court, a badminton court, a gymnasium and flats for faculty and staff. The library of our institute is very rich with respect to books and journals collections, and is growing rapidly and steadily. One of our greatest strength is our highly qualified and dedicated faculty members and staff. Our students are very innovative and ever eager to learn new concepts. Apart from teaching, our faculty members are deeply engaged in research work and scientific collaboration in national and international projects. Our students have demonstrated their capabilities and brilliance by securing internship in highly reputed international organizations. Our faculty and students regularly present their research findings in various academic conferences. It may be pertinent to mention that the students in collaboration with the teachers have successfully organized three annual cultural festivals (Zeitgeist) since 2010.

Congratulations to the publication team and the staff members, who helped in materializing this issue of Prajwalam. It is the endeavor of our newsletter to acquaint its readers with the achievements of the IIT Ropar fraternity.

New Laboratories Established

- Advanced Manufacturing Technology Laboratory
- Biomedical Engineering Laboratory
- Biomechanical Creativity & Innovation Laboratory
- Cell Culture & Tissue Engineering Laboratory
- Complex Fluids Laboratory
- Engine Research Laboratory
- Metrology Laboratory
- Nanoelectronics Research Laboratory

Chemistry Instrumentation Facility

Contents

Upcoming Events

- **Third convocation** will be held on November 15, 2014. Prof. Goverdhan Mehta (FNA, FRS) has kindly consented to be the chief guest. 121 B. Tech. students and 01 Ph. D. student will be awarded degrees.
- **Annual cultural festival, Zeitgeist 2014,** will be organized from October 9 – 11, 2014. This fourth edition of the fest will be synonymous to excitement, zest and most importantly fun. It will reflect the hard work and skills of the team incorporated in making it an unprecedented platform of fun and enjoyment along with mind blending events.

Design Exhibition and B.Tech. Project Presentation

The School of Mechanical, Materials and Energy Engineering (SMMEE) at IIT Ropar organized Design exhibition and B.Tech. project presentation on April 21, 2014. Students from all branches displayed their products designed in the Product design and realization I course, guided by Dr. Prabir Sarkar. Additionally, products designed in product design and realization II course, guided by Dr. Harpreet Singh, were displayed. Students of final year who completed very interesting B.Tech. projects, coordinated by Dr. Himanshu Tyagi, also explained their projects to the visitors during the exhibition. Three top industrialists from Cheema Boilers, Kangaroo and Magbro Healthcare, attended this exhibition and appreciated the projects. Additionally, traffic police officers also visited it regarding one of the projects. Students, staff, and faculty members of the institute visited the venue and shared their feedback.

Training and Placement News

The placement season for the final year students went on well. Many students received job offers by December 2013. During January to June 2014, the companies who visited our campus for recruitment were Lucid Software Limited, Oracle Financials, Navyug Infosolutions, TechTier, L&T, and Avanti.

The internship season has been impressive. Some of our students secured foreign internships at Aston University (UK), Imperial College London, Ecole Centrale Paris Laboratoire Génie Industriel, and in Germany under DAAD Scholars Programs. The feedback from organizations that hosted our student interns was overwhelmingly positive. Top-notched companies like Amazon, Arista Networks, Microsoft, Navyug Infosolutions made pre-placement offers (PPOs) to our students at the end of the summer internship period.

Awards / Distinctions

- **Prof. J. K. Sridhar**, Department of Mathematics has been appointed as a Regional Editor of Journal of Mathematics and Statistics from June 2014.
- **Prof. J. K. Sridhar**, Department of Mathematics has been appointed as Member of Editorial Board of International Journal of Research in Advent and Technology from June 2014.
- **Dr. Rohit Y. Sharma**, Department of Electrical Engineering has been appointed as a Performance Auditor of the National Project Implementation Unit, MHRD.
- **Dr. Vimal Bhardwaj**, Department of Chemistry received the Young Scientist Award in International Conference on Global Opportunities for Latest Developments in Chemistry and Technology (Gold-CT-2014) at North Maharashtra University, Jalgaon, February 6-8, 2014.
- **Dr. Dinesh K. S.**, Deputy Librarian has been awarded Commonwealth Professional Fellowship, 2014. He has worked in the University of East London from June 2014 through August 2014.
- **Atul Kumar Nishad**, PhD scholar, Department of Electrical Engineering has been awarded the CEFIPRA-ESONN fellowship to participate in the European School on Nano science and Nanotechnology workshop, 2014.
- **Chinar Rana**, PhD scholar, Department of Mathematics has been selected for 2014 NCTU Taiwan Elite Internship Program for visiting the research group of Prof. C.-Y. Chen, August - October 2014, Taiwan.
- **Satyajit Pramanik,** PhD scholar, Department of Mathematics has been awarded Ernst Mach scholarship to work at the Institute of Fluid Mechanics and Heat Transfer, Vienna University of Technology, Austria from October, 2014 to March, 2015.
- **Satyajit Pramanik,** PhD scholar, Department of Mathematics has been awarded the outstanding poster award at the School on hands-on research in complex systems, June 30 - July 11, 2014, ICTP, Treieste, Italy.

Sponsored R&D Projects

1. **Anshu Dhar Jayal** (PI): "Surface engineering of cutting tools for sustainable dry, near-dry and cryogenic machining", Science and Engineering Research Board, Department of Science and Technology, Rs. 31 Lakhs.
2. **C. C. Reddy** (PI): "Investigations on new nanocomposite materials for electrical insulation", Ministry of Power, Rs. 65 Lakhs.
3. **C. C. Reddy** (PI) and **Rohit Y. Sharma** (Co-PI): "Design and development of compact firing unit", Defense Research and Development Organization, Rs. 10 Lakhs.
4. **Deepti Bathula** (PI): "Neuroimaging: Towards integrated analysis of multi-functional MRI data", Department of Science and Technology, Rs. 24.14 Lakhs.
5. **Dhilip Kumar, T. J.** (PI): "A first-principles study of metal grafted Calix[n]arenes as hydrogen storage material", Council of Scientific and Industrial Research, Rs.5.0 Lakhs.
6. **Jitendra Prasad** (PI): "Invertible computer model for bone adaptation to mechanical environment," Science and Engineering Research Board, Department of Science & Technology, Rs. 15 Lakhs.
7. **M. Prabhakar** (Co-PI): "Knot invariants and geometric manifolds", Indo-Japan research project, Department of Science and Technology, Rs. 4.52 Lakhs.
8. **Manju Khan** (PI): "Normal complement in the unit group and its structure", National Board for Higher Mathematics, Rs. 9.90 Lakhs.
9. **Navin Kumar** (Co-PI): "To design closed loop automated blood pressure control system" in collaboration with PGI Chandigarh, Department of Science and Technology, 57.2 Lakhs.
10. **P. K. Raina** (PI): "Calculation of Nuclear Transition Matrix Elements and Measurement of Experimental Half-life for Nuclear Double Beta Decay", Department of Science and Technology, Rs. 21 Lakhs.
11. **Rohit Y. Sharma** (PI) and **C. C. Reddy** (Co-PI): "Design verification and analysis of EITDS circuit", Defense Research and Development Organization, Rs. 10 Lakhs.
12. **S. C. Martha** (PI): "Surface wave interaction with irregular bottom topography and barriers", Department of Science and Technology, Rs.13.32 Lakhs.
13. **Samaresh Bardhan** (PI): "Finance and growth: Regional perspectives in India", Indian Council of Social Science Research, Rs. 4 Lakhs.

Research Seminars at IIT Ropar

Department of Chemistry

1. Dr. Ram Prasad, Post-Doctoral Associate, University of Southern California, USA: "Modeling biological functions using computer simulations: Approaches, limitations, and good practices" on January 9, 2014.
2. Dr. Sudeshna Ray, Assistant Professor, Dept. of Chemistry, AISECT University, Bhopal: "Exploration of new phosphors using a "Mineral-inspired approach" and control of photoluminescence properties of phosphor by "Charge-compensated aliovalent element substitution" on January 15, 2014.
3. Dr. Tapta Kanchan Roy, Post-Doctoral fellow, The Hebrew University of Jerusalem, Israel: "Anharmonic molecular vibrations: A journey from small to large systems" on February 12, 2014.
4. Dr. Debasis Samanta, Polymer Science Division: "Functionalization of surfaces in nanoscale: Methods and applications" on February 25, 2014.
5. Dr. Moumita Majumdar, Post-Doctoral Research Fellow, Saarland University, Saarbruecken, Germany: "Chemistry of homonuclear multiple bonds among main group elements and among transition metals" on March 5, 2014.

Department of Computer Science and Engineering

1. Prof. Dharma Agrawal, University of Cincinnati, USA, "An Introduction to Wireless Mobile Systems and Sensor Networks" on June 5, 2014.

Department of Humanities and Social Sciences

1. Prof. Sreemati Chakrabarti, Department of East Asian Studies, Delhi University, "Higher Education in China in the Reform Era." on March 21, 2014.

Department of Mathematics

1. Dr. Manoj Kumar, Department of Mathematics, Harish-Chandra Research Institute (HRI), Allahabad, "Central quotient and commutator subgroup of a group" on May 26, 2014.
2. Dr. Dilbag Singh, Department of Mathematics, Panjab University, Chandigarh, "Guided waves for sizing defects in thin plates" on April 2, 2014.
3. Prof. Aloknath Chakrabarti, NASI Senior Scientist , IISc Bangalore, "Some Aspects of Differential Equations With Applications" on March 27, 2014.
4. Prof. Somdatta Sinha, Indian Institute of Science Education and Research (IISER) Mohali, "Modelling in Biology: The Case of Modeling Infectious Diseases" on February 10, 2014.

School of Mechanical, Materials and Energy Engineering

1. Dr. M. S. Chandrasekar, Scientific Officer-G, Indira Gandhi Centre for Atomic Research (IGCAR) Kalpakkam, "Safety in Nuclear Power Plants" on May 21, 2014.
2. Dr. S. K. Arora, Industrial Expert, Mahindra & Mahindra, Panchkula, "Global Trends and Finer Manufacturing Insights" on March 8, 2014.

Department of Physics

1. Dr. Nrusingh C. Biswal, Medical Physics and Advanced Imaging Division, Rush University Medical Center, Chicago, USA: "Theranostic Responses of Magneto-fluorescent Gold Nanocomplexes for Breast Cancer" on January 27, 2014.
2. Prof. Vandana Nanal, Department of Atomic and Nuclear Physics, Tata Institute of Fundamental Research, Mumbai: "Double-beta-decay and status of INO" on January 21, 2014.
3. Dr. Ragunath Sahoo, IIT Indore: "Big Bang Experiment at Large Hadron Collider (LHC)" on March 4, 2014.
4. Prof. Biswajit Paul, Raman Research Institute, Bangalore: "Neutron Star Studies with X-rays" on March 21, 2014.
5. Prof. Deshdeep Sahdev, Department of Physics, IIT Kanpur: "Indigenous Technology in a Globalized World: A Case Study on Resolving Atoms in our Backyards" on April 10, 2014.

Lectures Delivered by IIT Ropar Faculty

Department of Chemistry

Nagaraja C. M.

1. "Construction of Interpenetrated metal-organic frameworks (MOFs): Effect of ancillary ligands on the degree of interpenetration" National Seminar on Crystallography 43A" IISER Mohali, March 28-30, 2014.

Tharamani C. N.

1. "Design of noble metal free catalyst for oxygen reduction reaction" International conference on "Emerging Trends in Science and Technology: Impact on Environment and Society for Inclusive Growth, AISECT University, Bhopal, February 14-15, 2014.
2. "Noble-metal free electrocatalysts based on modified carboneceous materials for the oxygen reduction reaction" National Conference on Nanotechnology and Renewable Energy, New Delhi, April 28-29, 2014.

Vimal Bhardwaj

1. "UGC sponsored national seminar" S.S.M. College Dinanagar, Gurdaspur, India, February 1-2, 2014.
2. "International Conference on Global opportunities for latest developments in chemistry and technology (Gold-CT-2014)" North Maharashtra University, Jalgaon, India, February 6-8, 2014.

Department of Electrical Engineering

C. C. Reddy

1. "Failure of electric cables: Some tests to prove thermal mechanism", Sumitomo Electric Co., Osaka City, Japan, May 2014.
2. "Space charges and electric fields in dielectrics some new developments", J-Power Systems Corp., Hitachi, Japan, May 2014.

Rohit Y. Sharma

1. "Advanced VLSI Design Techniques" GNDEC, Ludhiana, January 2014.
2. "High-speed VLSI Circuit Design" GITAM University, Visakhapatnam, February 2014.

Department of Mathematics

Arvind Kumar Gupta

1. "Cellular automaton and its applications" in refresher course in Mathematics at Chandigarh University, India, April 9, 2014.
2. "An introduction to fuzzy sets and fuzzy numbers" in refresher course at Chandigarh University, India, June 7, 2014.
3. "Modeling & simulation of traffic flow through cellular automaton approach" in TEQIP-II sponsored FDP on Modeling & simulation of dynamical systems and optimization (MSDSO-2014) at Delhi Technical University, India, June 9-13, 2014.
4. "Modeling of stochastic transport processes" in TEQIP-II sponsored FDP on modeling & simulation of dynamical systems and optimization (MSDSO-2014) at Delhi Technical University, India, June 9-13, 2014.

School of Mechanical, Materials & Energy Engineering

Harpreet Singh

1. "Development of Nano-structured materials and coatings through mechanical processing" during Short Term Course (TEQIP-II) on Advances in Mechanical Engineering at Beant College of Engineering and Technology, Gurdaspur, India, June 24, 2014.
2. "Development of Nano-structured materials and coatings through mechanical processing" during Short Term Course on Advanced and Micro manufacturing at PEC University of Technology, Chandigarh, India, June 6, 2014.

Himanshu Tyagi

1. "Nanofluid applications in high heat flux solar collectors" during the FDP on Advanced Energy and Thermal Systems at DCRUST, Murthal, India, 2014.

Department of Physics

Rajesh V. Nair

1. "Tailoring light-matter interaction in engineered photonic meta-materials" 101st Indian Science Congress, Jammu University, February 5, 2014.

Mukesh Kumar

2. "Optimizing amorphous Indium-Zinc-Oxide film growth for next generation flexible device applications" National Conference on Nanotechnology and Renewable Energy, Jamia Millia Islamia, Delhi, April 28-29, 2014.

Glimpses of New Campus

* Artistic impressions

Research Publications

Journals

Department of Computer Science and Engineering

1. Narayanan, C. K. and Cook, D. "Activity recognition on streaming sensor data" Journal of Pervasive and Mobile Computing 10 (2014): 138-154.

Department of Electrical Engineering

1. Nishad, A. K. and Sharma, R. Y. "Analytical time domain models for performance optimization of multilayer GNR interconnects" IEEE Journal of Selected Topics in Quantum Electronics 20.1 (2014).

Department of Mathematics

1. Gupta, A. K. and Dhiman, I. "Asymmetric coupling in two-lane simple exclusion processes with Langmuir kinetics: Phase diagrams and boundary layers" Physical Review E 89.022131 (2014).
2. Sharma, B., Katiyar, V. K., Gupta, A. K. and Singh, A. "The automated vehicle detection of highway traffic images by differential morphological profile" Journal of Transportation Technologies 4.2 (2014): 150.
3. Gupta, A. K. and Dhiman, I. "Analyses of a continuum traffic flow model for a non-lane-based system" International Journal of Modern Physics C, 5, 1450045 (2014).

School of Mechanical, Materials & Energy Engineering

1. Joshi, R.S. and Singh, H."Shear deformation in chip particulates produced using modulation assisted machining" Mater. Manufact. Processes 29.5 (2014):638-647.
2. Joshi, R.S., Singh, H. and Singh, I. "Modulation assisted drilling of glass fiber reinforced plastics" Mater. Manufact. Processes 29. 3 (2014): 370-378.
3. Joshi, R. S. and Singh, H. "An Investigation on flank wear mechanism of tungsten carbide drills during conventional and modulation assisted drilling" Machining Sci. Technol. 18.1 (2014): 99-119.
4. Bala, N., Singh, H., Karthikeyan, J. and Prakash, S. "Cold spray coating process for corrosion protection: A Review" Surf. Engg. 30. 6 (2014): 414-421.
5. Kaushal, G., Bala, N., Kaur, N., Singh, H. and Prakash, S."Comparative high temperature corrosion behaviour of Ni-

20Cr coatings on T22 boiler steel produced by HVOF, D-Gun and cold spraying" Metall. Mater. Trans. A. 45A (2014): 395-410.
6. Grewal, H.S., Singh, H. Agrawal, A. and Shollock, B. "Slurry erosion performance of Ni-Alumina thermal spray coatings: Effect of impingement angle" J. Thermal Spray Technol. 23.3 (2014): 389-401.
7. Kumar, M., Singh, H. and Singh, N. "Production of a Nano-Crystalline Ni-20Cr coating for high-temperature applications" J. Thermal Spray Technol.23.4 (2014): 692-707.
8. Arora, H.S., Grewal, H.S., Singh, H., Dhindaw, B.K., McPhail, D.S., Barbara, S., Chater, R. and Mukherjee, S., "Microstructure-Property relationship for friction stir processed magnesium alloy" Adv. Eng. Mater. 16.1 (2014): 94-102.
9. Joshi, R. S., Srivastava, S. and Singh, H., "Microstrucutral analysis of nanostructured aluminum alloy strips created from machining based deformation process" Procedia CIRP 14 (2014): 130-135.

Department of Physics

1. Hall, S. A., Jena, K. C., Covert, P. A., Roy, S., Trudeau, T. G., and Hore, D. K. "Molecular-level Surface Structure from Nonlinear Vibrational Spectroscopy Combined with Simulations" J. Phys. Chem. B 118 (2014).
2. Sharma, V. R., Yadav, A., Singh, P. P., Singh, D. P., Gupta, S., Sharma, M. K., Bala, I. Kumar, R., Muralithar, S., Singh, B. P. and Prasad, R. "Influence of a one-neutron-excess projectile on low energy incomplete fusion" Physical Review C 89, 024608 (2014).
3. Singh, D. P., Sharma, V. R., Yadav, A., Singh, P. P., Unnati, Sharma, M. K., Kumar, R., Singh, B. P. and Prasad, R. "Experimental study of incomplete fusion reactions in the 16O + 130Te system below 6 MeV/nucleon" Physical Review C 89, 024612 (2014).
4. S. Aydin, M. Ionescu-Bujor, F. Recchia, S. M. Lenzi, M. Bouhelal, D. Bazzacco, P. G. Bizzeti, A. M. Bizzeti-Sona, G. de Angelis, I. Deloncle, E. Farnea, A. Gadea, A. Gottardo, F. Haas, T. Huyuk, H. Laftchiev,S. Lunardi, D. Mengoni, R. Menegazzo, C. Michelagnoli, D. R. Napoli, A. Poves, E. Sahin, Singh, P. P., D. Tonev, C. A. Ur, and J. J. Valiente-Dobón "High-spin level structure of 35S" Physical Review C 89, 014310 (2014).

Department of Chemistry

1. C. M. Nagaraja, Ugale, B. and Chanthapally, A. "Construction of 2D interwoven and 3D interpenetrated metal–organic frameworks of Zn(II) by varying N,N′-donor spacers" CrystEngComm" 16 (2014): 4805-4815. (Invited article for the themed issue on international year of crystallography celebration: India).
2. Kaur, M. and C. M. Nagaraja "Template-free syntheses of CdS microspheres composed of ultrasmallnanocrystals and their photocatalytic study" RSC Advances 4 (2014):18257-18263.
3. Saluja, P., Bhardwaj,V.K., Pandiyan, T., Kaur, S., Kaur, N. and Singh, N. "Imine-linked chemosensors for the detection of Zn(II) in biological samples" RSC Adv. 4 (2014): 9784-90.
4. Singh, A., Kaur, S., Kaur, N. and Singh, N. "Fluorometric sensing of Hg(II) ions in aqueous medium by nano-aggregates of a tripodal receptor" Org. Biomol. Chem. 12 (2014): 2302-09.
5. Tayade, K., Gallucci, J., Sharma, H., Attarde, S., Patil, R., Kuwar, A. and Singh, N. "Exploration of selective recognition of iodide with dipodal sensor: 2,2′-[ethane-1,2-diylbis(iminoethane-1,1-diyl)]diphenol" Dalton Trans. 43 (2014): 3584-88.
6. Patil, R., Moirangthem, A., Butcher, R., Singh, N., Basu, A., Tayade, K., Fegade, U., Hundiwale, D. and Kuwar, A. "Al(III) selective colorimetric and fluorescent red shifting chemosensor: application in living cell imaging" Dalton Trans. 43 (2014): 2895-99.
7. Raj, T., Saluja, P., Jang, D.O. and Singh, N. "Nanoaggregates of benzothiazole-based amidine-coupled chemosensors: a chemosensor for Ag(I) and the resultant complex as a secondary sensor for Cl- " RSC Adv. 4 (2014): 5316-21.
8. Tayade, K., Bondhopadhyay, B., Sharma, H., Basu, A., Gite, V., Attarde, S., Kuwar, A. and Singh, N. "Turn-on fluorescent chemosensor for zinc(II) dipodalratiometric receptor: application in live cell imaging" Photochem. Photobiol. Sci. 13 (2014): 1052-57.
10. Singh, A., Bhardwaj, V.K., Kaur, G., Kaur, K., Bakshi, M.S. and Singh, N. "Organic–inorganic nanohybrids and their applications in silver extraction, chromogenic Cu(II) detection in biological systems, and hemolytic assay" RSC Adv. 4 (2014): 21079-88.
11. Fegade, U., Sahoo, S.K., Singh, A., Mahulikar, P., Attarde, S., Kuwar, A and Singh, N. "A selective and discriminating noncyclic receptor for HSO^{4-} ion recognition" RSC Adv. 4 (2014): 15288-15292.

12. Kaur, K., Kaur, M., Kaur, A., Singh, J., Mittal, S.K., Kaur, N. and Singh, N. "Polymer-based biocompatible fluorescent sensor for nano-molar detection of Zn(II) in aqueous medium and biological samples" Inorg. Chem. Front. 1 (2014): 99-108.
13. Chopra, S., Thangarasu, P., Bhardwaj, V.K., Kaur, N. and Singh, N. "Fluorescent organic nanoparticles as chemosensor for nanomolar detection of Cs(I) in aqueous medium" Dyes and Pigments 106 (2014): 45-50.
14. Singh, A., Kaur, S., Kaur, A., Aree, T., Kaur, N., Bakshi, M.S. and Singh, N. "Aqueous-phase synthesis of copper nanoparticles using organic nanoparticles: Application of assembly in detection of Cr(III)" ACS Sustainable Chemistry and Engineering 2 (2014): 982-90.
15. Tayade, K., Sahoo, S.K., Bondhopadhyay, B., Bhardwaj, V. K., Basu, A., Bendre, R., Kuwar, A. and Singh, N. "Highly selective turn-on fluorescent sensor for nanomolar detection of biologically important Zn(II) based on isonicotinohydrazide derivative: Application in cellular imaging" Biosensors and Bioelectronics 61 (2014): 429-33.
16. Fegade, U., Sharma, H., Ingle, S., Attarde, S., Kuwar, A. and Singh, N. "An amide based dipodalZn(II) complex for multications recognition: Nanomolar detection" Journal of Luminescence 149 (2014): 190-959.
17. Tayade, K., Bondhopadhyay, B., Basu, A., Chaitanya, G.K., Sahoo, S.K., Attarde, S., Kuwar, A. and Singh, N. "A novel urea-linked dipodal naphthalene-based fluorescent sensor for Hg(II) and its application in live cell imaging" Talanta 122 (2014): 16-22.
18. Bhardwaj, V.K., Sharma, H. and Singh, N. "Ratiometric fluorescent probe for biothiol in aqueous medium with fluorescent organic nanoparticles" Talanta 129 (2014): 198-202.
19. Tayade, K., Sahoo, S.K., Patil, R., Attarde, S., Kuwar, A. and Singh, N. "2,2′-[Benzene-1,2-diylbis(iminomethanediyl)]diphenol derivative bearing two amine and hydroxyl groups as fluorescent receptor for Zinc(II) ion" SpectrochimicaActa Part A: Molecular and Biomolecular Spectroscopy, 126 (2014): 312-16.
20. Kaur, N., Kaur, S., Kaur, A., Saluja, P., Sharma, H., Saini, A., Dhariwal, N., Singh, A. and Singh, N. "Nanoparticle-based, organic receptor coupled fluorescent chemosensors for the determination of phosphate" Journal of Luminescence 145 (2014): 175-79.
21. Kaur, K., Singh, A. and Singh, N. "Azo dye coupled imine linked dipodalchemosensor: Anion recognition with counter anion displacement assay" Sensors and Actuators B: Chemical 191 (2014): 734-40.
22. Fegade, U., Singh, A., Chaitanya, G.K., Singh, M., Attarde, S., Kuwar, A. and Singh, N. "Highly selective and sensitive receptor for Fe(III) probing" SpectrochimicaActa Part A: Molecular and Biomolecular Spectroscopy 121 (2014): 569-74.
23. Tayade, K.C., Kuwar, A.S., Fegade, U.A., Sharma, H., Patil, U.D., Attarde, S.B. and Singh, N. "Design and synthesis of a pyridine based chemosensor: Highly selective fluorescent probe for Pb(II)" Journal of Fluorescence 24 (2014): 19-26.
24. Fegade, U., Sharma, H., Attarde, S., Kuwar, A. and Singh, N. "Urea based dipodal fluorescence receptor for sensing of Fe(III) ion in semi-Aqueous medium" Journal of Fluorescence 24 (2014): 27-37.
25. Aguilar, C. A. H., Narayanan, J., Thangarasu, P. and Singh, N. "Kinetics and mechanism for the oxidation of anilines by ClO_2: A combined experimental and computational study" J. Phy. Org. Chem. 27 (2014): 440-49.
26. Mahal, A., Goshisht, M.K., Khullar, P., Kumar, H., Kaur, G., Bakshi, M.S. and Singh, N. "Protein mixtures of environmentally friendly zein to understand protein–protein interactions through biomaterials synthesis, hemolysis, and their antimicrobial activities" PhyChemChemPhy. 16 (2014): 14257-70.
27. Samolia, M. and Dhilip, T. J. "Hydrogen sorption efficiency of titanium functionalized Mg-BN framework"J. Phys. Chem. C 118 (2014): 10859-10865.
28. Samolia, M. and Dhilip, T. J. "A conceptual DFT study of the hydrogen trapping efficiency in metal functionalized BN system" RSC Adv. 4 (2014): 30758 – 30767.
29. Samolia, M. and Dhilip, T. J. "Fundamental studies of H_2 interaction with MAl_3 clusters [M = Li, Sc,Ti , Zr]" J. Alloys Compd.. 588 (2014): 144-152.
30. Bhardwaj, V. K., Bakshi, M S., Kaur,K., Singh, A., and Singh, N. "Organic – Inorganic nanohybrids and their applications in silver extraction, Chromogenic Cu^{2+} detection in Biological Systems, and Hemolytic Assay"RSC Adv. 4 (2014): 21079–21088.
31. Sharma, H.,Bhardwaj, V. K. and Singh, N. "Ratiometric fluorescent probe for biothiol in aqueous medium with fluorescent organic nanoparticles" Talanta 129 (2014): 198-202.
32. Rajan, S. S.,Cavera, V. L.,Singh, Y., Zhang, X., L.C. Michael, and Sinko, P. J. "Polyethylene glycol-based hydrogels

for controlled release of the antimicrobial subtilosin for prophylaxis of bacterial vaginosis, Antimicrobial Agents and Chemotherapy" 58 (2014): 2747-53.
33. Kaur, B. and Srivastava, R. "Ionic liquids coated Fe_3O_4 based inorganic–organic hybrid materials and their application in the simultaneous determination of DNA bases" Colloids and Surfaces B: Biointerfaces 118 (2014): 179-187.
34. Kaur, B. and Srivastava, R. "NanocrystallineMetallosilicate Modified Electrodes for the Simultaneous, Sensitive, and Selective Determination of Riboflavin, Rutin, and Pyridoxine" Electroanalysis 26 (2014): 1078-1097.
35. Kore, R., Satpati, B. and Srivastava, R. "Highly efficient and green chemical synthesis of imidazolyl alcohols and N-imidazolyl functionalized β-amino compounds using nanocrystalline ZSM-5 catalysts" Applied Catalysis A: General 477 (2014): 8-17.
36. Prathap, M. U. A., Satpati, B. and Srivastava, R. "Facile preparation of β-$Ni(OH)_2$-$NiCo_2O_4$ hybrid nanostructure and its application in the electro-catalytic oxidation of methanol" ElectrochimicaActa 130 (2014): 368-380

Book Chapters

Library

1. Handa, T.S.and Mittal. A. "Implementing RFID for enhanced library services" In: Kumar, S. M., Mahapatra, R. K. and Veeranjaneyulu, K.(ed.) Information Access in Digital Libraries: A Festschrift Volume in Honour of Dr. S.M Pathania, New India Publishing Agency, New Delhi, (2014): 197-205.

Papers Presented in Conferences

Department of Chemistry

1. Joshi, A. and Tharamani C. N. "Development of electrochemical sensor for heavy metal detection" National Conference on Nanotechnology and Renewable Energy, New Delhi, India, April 28-29, 2014.

Department of Computer Science Engineering

1. Singh, J. and Auluck, N. "DVFS and duplication based scheduling for optimising power and performance in heterogeneous multiprocessors" 22nd ACM High Performance Computing Symposium (SpringSim HPC), Tampa, USA, April 2014.

Department of Electrical Engineering

1. Chahal, J. S., Reddy, C. C., Tiwana, A. P. S. and Gupta, A "Modelling the effect of amplifier response in pulsed electroacoustic system", IEEE Proceedings of International Conference on Electrical Insulating Materials (ISEIM) 2014: 362-365.
2. Tiwana, A. P. S. and Reddy, C. C., "Experiments on Breakdown Mechanism in Current Carrying PVC Cables under DC Voltage Conditions" Proceedings of CIGRE-AORC 2014, Tokyo, JAPAN.
3. Reddy, C. C. and Tiwana, A. P. S., "Investigations on Electric Field Enhancement in Cable Insulation Under Certain Recommended Test Conditions for HVDC Power Cables" Proceedings of CIGRE-AORC 2014, Tokyo, JAPAN.

Department of Humanities and Social Sciences

1. Bardhan, S. "Bank-specific and macroeconomic determinants of non-performing assets of indian banks: A dynamic panel data approach" 13th Annual Meeting of the European Economics and Finance Society (EEFS), Thessaloniki, Greece, June 12-15, 2014.

School of Mechanical, Materials & Energy Engineering

1. Prasad, J., "PRIFFER: An in-house computer program for processing of micro-CT images for finite element analysis," Workshop on Structure-Property Relations: from 3D Imaging to Computational Modeling, May 29-30, 2014, SASE RDC, Chandigarh, India.
2. Tiwari, A. K., and Prasad, J., "Bone's Adaptation to Mechanical Loading: Fluid Flow Versus Shear Strain," 2nd International Conference on Medical Materials, Devices & Regenerative Medicine (MMDRM-2014), January 11-13, 2014, Kathmandu, Nepal.
3. Grover, K., Thakuria, J., Wasudeo, N.S., Gopinathan, N.R., and Prasad, J., "A Biomimetic Implant for

OsteogenesisImperfecta," 2nd International Conference on Medical Materials, Devices & Regenerative Medicine (MMDRM-2014), January 11-13, 2014, Kathmandu, Nepal.
4. Kumar, S., Kumar, D., Tiwari, A. K., and Prasad, J., "Investigating Bone's Adaptation to Mechanical Environment Using Neural Networks," 2nd International Conference on Medical Materials, Devices & Regenerative Medicine (MMDRM-2014), January 11-13, 2014, Kathmandu, Nepal.
5. Kumar, M., Singh, H. and Singh, N. "Enhancing high temperature corrosion resistance of SA213-T91 steel by HVOF sprayed nanostructured Ni-20Cr coating" International Conference of Thermal Spray Coatings (ITSC-2014), Barcelona, Spain, May 21-23 (2014): 546-555.
6. Kumar, M., Singh, H. and Singh, N. "Study of high temperature oxidation behavior of cold sprayed novel Ni-20Cr coating on T22 bolier steel" International Conference on Corrosion 2014, Henry B. Gonzalez Convention Center San Antonio, TX, U.S., March 9-13, 2014.
7. Kumar, M., Singh, H. and Singh, N. "Improving high temperature oxidation resistance of a boiler steel by a novel Ni-20Cr nanostructured coating" International Corrosion Prevention Symposium for Research Scholars (CORSYM 2014), IIT Bombay, India, February 20-21, 2014.
8. Goyal, G., Bala, N., Singh, H. and Prakash, S. "Effect of superficially applied Y_2O_3 inhibitor on the high temperature corrosion performance of some Ni-based superalloys" International Corrosion Prevention Symposium (CORSYM 14), Mumbai, India, February 20-21, 2014.
9. Singh B., Bala, N., and Singh, H."Oxidation performance study of nanostructured Fe-18Cr-8Ni-5Al coating on 304L stainless steel" International Corrosion Prevention Symposium (CORSYM 14), Mumbai, India, February 20-21, 2014.
10. Kaushal, G., Singh, H. and Prakash, S. "Erosion-Corrosion behavior of D-Gun sprayed coatings in boiler environment at 700°C" International Corrosion Prevention Symposium (CORSYM 14), Mumbai, India, February 20-21, 2014.
11. Kaushal, G., Singh, H. and Prakash, S. "Performance of D-gun sprayed coatings in Na_2SO_4-60%V_2O_5 environment at 900°C" International Conference of Thermal Spray Coatings (ITSC-2014), Barcelona, Spain, May 21-23 (2014): 551-555.
12. Singla, E. and Singh S. "Realization of task-based designs involving D-H parameters using the concept of modularity" IEEE ICRA WS 2014 on Task-based optimal design of robots, Hong Kong, China, May 31, 2014.

Department of Physics

1. Pushpendra P. Singh, Abhishek Yadav, Vijay R. Sharma, D. P. Singh, R. Kumar, R. P. Singh, S. Muralithar, B. P. Singh, R. K. Bhowmik, R. Prasad, "Understanding the onset of incomplete fusion", Journal of Physics: Conf. Ser. 515, 012021, 2014.
2. Vijay R. Sharma, Abhishek Yadav, Devendra P. Singh, Pushpendra P. Singh, Indu Bala, R. Kumar, M. K. Sharma, S. Gupta, S. Murlithar, R. P. Singh, B. P. Singh and R. Prasad, "Incomplete fusion reactions at low energies in 13C+169Tm system", EPJ Web of Conferences: 66, 03079 (2014).
3. N. Pietralla, M. Reese, M. L. Cortes, F. Ameil, D. Bazzacco, M.A. Bentley, P. Boutachkov, C. Domingo-Pardo, A. Gadea, J. Gerl, N. Goel, P. Golubev, M. Górska, G. Guastalla, T. Habermann, I. Kojouharov, W. Korten, E. Merchán, S. Pietri, D. Ralet, P. Reiter, D. Rudolph, H. Schaffner, Pushpendra P. Singh, O. Wieland, and H.J. Wollersheim, "On the Road to FAIR: 1st Operation of AGATA in PreSPEC at GSI, for PreSPEC-AGATA", EPJ Web of Conferences: 66, 02083 (2014).

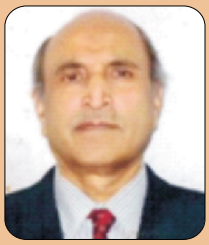
Library

1. Handa, T.S. "Knowledge Management in Libraries: The process and cycle" International Conference on Content to Connectivity-Paradigm Shift in Knowledge Innovation, Information Representation, Information Management Systems and Librarianship, Tecnia Institute of Advanced Studies, Rohini, Delhi, April 11-12, (2014): 127-131.
2. Kaur, H. "Academic plagiarism and copyright Infringement: The need for intellectual honesty" 59th International Conference of Indian Library Association (ILA) on Managing libraries in the changing information world: From Surviving to Thriving, Mahatma Gandhi Central Library, IIT Roorkee, February 22-24, 2014.
3. Kaur, H. "Cloud computing and open discovery tools in academic libraries: An Overview" National Seminar on Information Technology Tools and Techniques in Social Science Research, Guru Nanak Dev University, Amritsar in collaboration with in Defence Research and Development Organization (DRDO), May 23-24, 2014.

Engagements of the Director

1. Participated in Global Education Dialogue on Higher Education & Employment in Mumbai on January 9-10, 2014.
2. Participated in 2nd World Summit on Accreditation (WOSA-2013) on March 9-10, 2014 in New Delhi.
3. Chief Guest for Prize Distribution Function of Goswami Ganesh Dutta Sanatan Dharma College, Chandigarh on March 26, 2014.
4. Chief Guest for Inaugural session of 9th National Conference SACTA-2014 at I.T.S., Mohan Nagar, Ghaziabad on Saturday, April 19, 2014.
5. Delivered an invited lecture at Indian Naval Academy, Kannur, Kerala on April 25, 2014.
6. Participated in Global Education Dialogue on Research and Relevance on May 6-7, 2014 & Knowledge Park Conference on May 9, 2014 in Lahore, Pakistan.
7. Participated in PAN IIT Global Conference 2014 in Toronto and visited University of Missouri for collaboration work during June 5-16, 2014.

New Faculty Recruits (January to June, 2014)



**Prof. J.K. Sridhar,
Visiting Professor,
Mathematics**

**Dr. G. Sankara Raju Kosuru,
Assistant Professor,
Mathematics**

**Dr. Vijaya Sankara Rao Pasupureddi,
Assistant Professor,
Electrical Engineering**

**Dr. Tapas Chatterjee,
Assistant Professor,
Mathematics**

**Dr. Chittaranjan Mishra,
Assistant Professor,
Mathematics**

New Staff Recruits (January to June, 2014)

**Sh. Saurabh Sharma,
Assistant Executive Engineer (Civil),
Works & Estate**

**Sh. Santosh Deogam,
Jr. Assistant,
Registrar Office**

**Ms. Poonam Kataria,
Jr. Assistant,
Academics**

Academic Calendar for 1st Semester 2014-15 (for UG & PhD)

#	Academic Events	First Semester 2014-15
1	Reporting of new students	Jul 23 (Wed)
2	Orientation and registration of new students	Jul 24 (Thu)
3	Registration of continuing student	Jul 25 (Fri)
4	Commencement of classes	Jul 28 (Mon)
5	Late registration	Aug 05 (Tue)
6	Last date for course ADD / DROP	Aug 05 (Tue)
7	Last date for adding courses in lieu of courses dropped on Aug 05, 2014	Aug 07 (Thu)
8	Last date for getting mid semester course evaluation form filled	Sept 16 (Tue)
9	Midterm evaluation project for UG (No Classes)	Sept 19 (Fri)
10	Mid Semester Examination	Sept 22 (Mon) – Sept 27 (Sat)
11	Last date for return of marked answer-scripts	Oct 08 (Wed)
12	Short-attendance warning to students by departments	Oct 10 (Fri)
13	Class committee meeting	Oct 10 (Fri)
14	Last date for Audit and Withdrawal	Oct 14 (Tue)
15	Last date for departments to float courses for next semester	Oct 17 (Fri)
16	Course registration for next semester	Oct 27 (Mon) – Oct 31 (Fri)
17	Meeting of timetable incharges for courses of next semester	Nov 03 (Mon)
18	Last date for getting course evaluation form filled	Nov 18 (Tue)
19	Last date for submission of preliminary project reports for UG students	Nov 21 (Fri)
20	Last day of classes	Nov 21 (Fri)
21	Display of Pre-Major Totals (PMT)	Nov 21 (Fri)
22	Display of list of students with short attendance	Nov 21 (Fri)
23	Major Examination	Nov 24 (Mon) – Nov 29 (Sat)
24	Project viva-voce for UG	Dec 01 (Mon)
25	Last date for submission of final project reports for UG students	Dec 08 (Mon)
26	Viewing of answer-scripts by the student	Dec 08 (Mon)
27	Last date for grades to reach to the Academics Section	Dec 09 (Tue)
28	List of courses for which grades not received to HoDs	Dec 10 (Wed)
29	Display of grades	Dec 10 (Wed)
30	Winter Vacation (for UG only)	Dec 08 (Mon) – Jan 04 (Sun)
31	Last date for progress report submission (for PhD only)	Dec 29 (Mon)

Team Prajwalam

Dr. D. Mandal, Dept. of Chemistry
Dr. P. S. Dutta, Dept. of Mathematics
Mr. C.S. Sham Sundar, Assistant Registrar
Dr. Dinesh K. S., Deputy Librarian
Dr. Rohit Y. Sharma, Dept. of Electrical Engineering
Dr. Somdev Kar, Dept. of Humanities and Social Sciences

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