

REFLEXIONS

School of Sciences

Welcome To Our New Dean



It's high time to start a path of transformation by integrating sustainability into education and setting the stage for a green and resilient future. The need for this change is more important than ever in the ever-evolving landscape of education. The global challenges that we face—environmental degradation, climate change, and scarcity of resources—make this call to action urgent. The education sector has a great responsibility to instil in students the basic principles of sustainability that will help them understand, overcome and take control as builders of the future entrusted with the task of shaping a world that aligns with sustainable values and practices. I congratulate School of Sciences for maintaining the continuity of sharing information through this newsletter. My personal thanks to the Editor for structuring and presenting information so beautifully.

School of Sciences congratulates Prof. (Dr.) Meena Kapahi on being appointed as new dean.

Little Fun Adds Color to Learning

Month of October/November is always full of festivities and how can we stay away from not celebrating them.

All Programs from School of Sciences engaged into festival celebrations. The celebrations were an eternal display of inclusive culture at School of Sciences where faculties and students participated with full enthusiasm. Various activities like Rangoli Competition, Tambola, Cultural Events were organised in each department.



Faculties Those Bring Pride Home

Dr. Meena Kapahi, Professor & Dean, has been selected as a member of the prestigious International Judging Panel for the 2023 QS Reimagine Education Awards. As a part of the panel, Dr. Meena Kapahi evaluated projects which would further be competing for the regional, category and overall awards in the 10th Edition of the QS Reimagine Education Awards and Conference, scheduled to take place from December 11-13, 2023 at Khalifa University, Abu Dhabi

The project, "The Journey From "Wastes to Resources" - An Awareness Campaign," has been selected for the "Sustainability Education Award" to compete further for Regional and Overall Category for QS Reimagine Education Awards scheduled to take place from December 11-13, 2023 at Khalifa University, Abu Dhabi. Prof. (Dr.) Meena Kapahi is PI on this project.

Prof. Sudhish Kumar Shukla, Professor Chemistry, has been ranked amongst 2% researchers for his research publications, citations and their impact among all Scopus author profiles, in annual and lifetime list for the second consecutive time in 2023, carried out by Stanford University.

By the end of October 2023, Dr. Jitendra Pal Singh, a Ramanujan Fellow at the School of Sciences, achieved a remarkable milestone with a total of 150 publications indexed in Scopus.

Dr. Arpit Sand, Program Head Chemistry, participated as Judge in the K.L. Mehta Dayanand College for Women organized "Meraki 2023 Young Researchers' Conclave" - International Research Paper Presentation for UG and PG students on 17th October, 2023.

Departmental Activities – Industrial Visits

On 13th October 2023, 40 students and 5 faculty members from Chemistry Program visited “Waste to Wonder Park (New Delhi)” and “ARBRO Pharmaceuticals”.

Waste to Wonder Park

The "Waste to Wonder" Park (Delhi), an initiative by the South Delhi Municipal Corporation, focuses on effectively managing the city's waste while beautifying public spaces. The park showcases intricate and beautifully crafted replicas of the Seven Wonders of the World, all made from scrap materials promoting sustainability and waste recycling emphasizing the importance of repurposing waste materials! The experience likely left the students inspired and more aware of their roles in protecting the environment and promoting sustainability.

ARBRO Pharmaceuticals

ARBRO Pharmaceuticals, a pharmaceutical company started in 1985 conducts rigorous testing of medicines and other products in accordance with the guidelines set by various pharmacopeia commissions. During the visit, students had an opportunity to observe the manufacturing and packaging processes of medicines. They also visited analytical division equipped with modern instrumentation for quality control. This educational trip provided students with valuable insights into quality assurance process. They also reflected on a sustainable approach to pharmaceutical production by minimizing risks and waste.

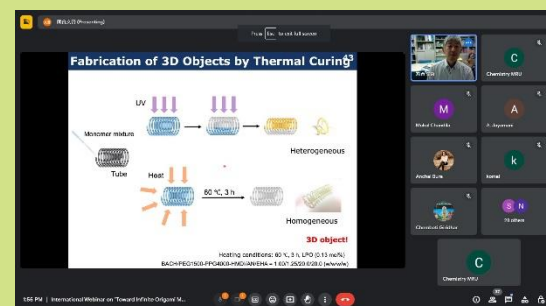


When Learning Goes Beyond Campus

Emulsion Polymerization of Styrene by the C1EG™ Ionic Liquid: The Department of Sciences, Program Chemistry, organized an International Webinar on October 12, 2023, by Prof. Rene Dario Peralta Rodriguez, Senior Researcher at Centre for Research in Applied Chemistry, Saltillo, Mexico. The talk enriched the students, research scholars, and faculty with the process of emulsion polymerization of Styrene using commercially available surfactant. More than 65 participants from different Universities attended the session.

Toward Infinite Origami Materials: The Department of Sciences, Program Chemistry, organized an International Webinar on October 31, 2023, by Prof. Bungo Ochiai, Department of Chemistry and Chemical Engineering, Yamagata University, Japan. Prof explained the design of polymeric material and the ways of polymerization, single-step copolymerization, and polymerization of 19-membered ring polymers using polyethylene glycol. More than 50 participants from different institutions participated in the webinar.

Applications of Micro and Nanotechnology: An expert talk on “Applications of Micro and Nanotechnology” was organized on 21st November 2023 from 11:00 am onwards in the campus. Prof. V.K. Jain, Professor of Physics at Amity University, Noida (Formerly Director Grade Scientist at Solid State Physics Lab, DRDO) was the resource person. Prof. P.K. Bhatnagar, Emeritus Professor at Delhi University also graced the event.



Knowledge shared is Knowledge Squared

- Priya Vashishth, Bindu Mangla, Himanshi Bairagi, Rajni Narang, Sudhish Kumar Shukla, Experimental Investigation of Sustainable corrosion inhibitor Albumin on low carbon steel in 1N HCl and 1N H₂SO₄, Results in Surfaces and Interfaces (Elsevier), <https://doi.org/10.1016/j.rsurfi.2023.100155>
- S. Tanwer, S. Kumar Shukla, Adsorption study of antibiotic drug doxycycline to protect mild steel surface from sulphuric acid solution, Progress in Color, Colorants and Coatings, <https://doi.org/10.30509/pccc.2022.166974.1165>
- P. Vashishth, B. Mangla, H. Bairagi, R. Narang, Sudhish Kumar Shukla, Low Carbon Steel Corrosion Inhibition Using Environment Friendly Solarium Lycopersicum extract in Monoprotic and Diprotic acidic medium, Chemical Engineering Communications, <https://doi.org/10.1080/00986445.2023.22555645>
- E.D. Akpan, A.K Singh, H. Lgaz, T.W. Quadri, Sudhish Kumar Shukla, B. Mangla, A. Dwivedi, O.Dagdag, Sheetal, E.E. Inyang, E.E. Ebenso, Coordination compounds as corrosion inhibitors of metals: A review, Coordination Chemistry Reviews, <https://doi.org/10.1016/j.ccr.2023.215503>
- R. Narang, H. Bairagi, P. Vashishth, Sudhish Kumar Shukla, B. Mangla, Electrochemical and surface study of an antibiotic drugs as sustainable corrosion inhibitor on mild steel in 0.5 M H₂SO₄, Journal of Molecular liquids, <https://doi.org/10.1016/j.molliq.2023.122277>
- Abhishek Dwivedi, Sudhish Kumar Shukla, Prem Kumar Bharti, Kuldeep K Saxena, Agya Dutta Dwivedi, Comparative study of polyanthranilic acid and sulfonated polyaniline on the mild steel corrosion in aqueous hydrochloric acid, Canadian Metallurgical Quarterly, <https://doi.org/10.1080/00084433.2023.2242664>
- R. Narang, H. Bairagi, P. Vashishth, Rashmi, Sudhish Kumar Shukla, B. Mangla, Applicability of drugs as sustainable corrosion inhibitors, Advanced materials letters, <https://doi.org/10.5185/amlett.2023.041732>
- Chavi Baliyan, Rajesh Dhupal, Ruchi Gupta, Unleashing the Power of Machine Learning: Revolutionizing Early Diagnosis and Prevention of Mental Health Disorder, IEEE Xplore: <https://doi.org/10.1109/IICAIET59451.2023.10291370>
- Geetika and Aparna Vyas, Wavelets Application in Machine Learning: A Review, International Aegean Congress on Social Science and Humanities, ISBN: 978-625-367-307-9
- Priti Gupta, Shilpa Sharma, Shagufta Jabin, and Sapana Jadoun, Chitosan nanocomposite for tissue engineering and regenerative medicine: A Review, International Journal of Biological Macromolecules (IF 8.025), <https://doi.org/10.1016/j.ijbiomac.2023.127660>
- Mayora Varshney, Aditya Sharma, Deo Prakash, K.D. Verma, Dielectric, magnetic and structural properties of Co doped CeO₂ powders, Journal of Physics and Chemistry of Solids
- Gursimran Kaur, Puneet Negi, Ruhit Jyoti Konwar, Hemaunt Kumar, Nisha Devi, Gagandeep Kaur, Himani, Manpreet Kaur, Rakesh Sharma, Prakash Chandra Stai, Vinod Kumar, Pankaj Sharma, Jitendra Pal Singh, Ajar Nath Yadav, Tailored TiO₂ nanostructures for designing of highly efficient dye sensitized solar cells: A review, Nanostructures & Nano-Objects
- Vivek Sharma, Sandeep Kumar, Nitikant, Vishal Tahkur, Effect of Frequency Chirp and Pulse Length on Laser Wakefield Excitation in Under-Dense Plasma, Brazilian Journal of Physics
- Mohit Kumar, H. K. Malik, Sandeep Kumar, Enhancement of electron-bunch quality in bubble domain utilizing plasma ramp profile with various density-hill widths in laser wakefield acceleration, Optical and Quantum Electronics
- Mohit Kumar, H. K. Malik, Sandeep Kumar, Optimization of Electron Bunch Characteristics in Bubble Wakefield: Role of Different Linear Upward Density Ramp Profile, IEEE Transactions on Plasma Science

Faculties, Those Inspire Us

Dr. Jaiparkash, Dr. Deepti Maikhuri, Dr. Shiv Kumar Dixit & Dr. Haider Abbas, Synthesis and utilization of graphene sheet with periodic vacancy for hydrogen storage, Patent Application No. 202311064446 dated October 13, 2023

We Learn What World is Learning

Prof. Dinesh K. Sharma attended the 2nd Indian Space Weather Conference (ISWC-2) held at Physical Research Laboratory (PRL), Ahmedabad during October 19-20, 2023 and presented a paper entitled "Effect of high-magnitude earthquakes on ionospheric parameters".

Students Are Our Priority

An alumni interaction seminar on "Guiding students for higher studies in securing fully funded research and development programs at Indian and Foreign Universities" was organized on 12th October 2023 in virtual mode. The speaker was Ms. Shruti Gulihar from M.Sc. Physics, 2020-2022 Batch, and currently enrolled in a fully funded doctoral programme offered by the University of Nevada, Reno, USA.

Ms. Geetika (M.Sc. III Sem, Mathematics) received two awards as (i) CDC Titan (for class performance) and (ii) CDC Maestro (for CDC Competition "Utsav of Excellence") on Oct 31st, 2023.

Ms. Geetika (M.Sc. III Sem, Mathematics) presented a research paper entitled "Wavelets Application in Machine Learning: A Review", in the 8th International Aegean Congress on Social Science and Humanities held at Izmir, Turkey organized by Institute of Economic Development and Social Research on September 23-25, 2023.

Manvinder (M.Sc. I Sem, Mathematics), Aakriti Tiwari (B.Sc. Vth Sem, Mathematics) and Kultaran (B.Sc. III Sem, Mathematics) have attended G20 University Connect Program on 26th September 2023 held at Pragati Maidan, New Delhi.

Basrarani Nayak presented a paper entitled "Literature Review On Balanced And Unbalanced Assignment Problems" in the 1st International Conference on Artificial Intelligence, Advanced Materials, & Mechatronics Systems, held on 3-4 November 2023, organized by School Of Engineering & Technology, JECRC University, Jaipur.

Anshika, Himanshi, Simran (M.Sc. III Sem, Mathematics) & Aakriti (B.Sc. V Sem, Mathematics) attended hands-on-training on MATHEMATICA organized by Department of Mathematics, IIT Indore on October 16th, 2023.



For department level contributions, please write to

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From The Desk of Editor-in-Chief

It is with great pleasure that I share the second edition of our newsletter "Reflexions". In this edition, we have strived to elevate the quality of content and have added updates on various research publications/patents/projects which our fellow co-workers have been writing with immense dedication.

The feedback and support from our readers have been invaluable, and we have taken your suggestions into consideration to make this edition even more enriching.

**For suggestions, please write to
Editor-in-Chief,
Dr. Priti Gupta at priti@mru.edu.in**