



CHEM NEWS Issue 9



A Newsletter from the Department of
Chemistry, VNIT Nagpur, 2021, Issue 9

DOWN TO CHEMISTRY...

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Message from HoD's Desk...



Welcome to the Department of Chemistry, VNIT Nagpur! We, the Department of Chemistry, feel our enthusiasm to publish the 9th issue of our departmental newsletter, "**CHEM NeWS**." I, as a head of the department would like to thank all the faculty members, non-teaching staffs and students for their limitless support and sincere efforts for the betterment and development of department. On this occasion, I congratulate all the team members of the editorial board for bringing up this issue in a better shape.

Overview of the Department...

Department of Chemistry has started the journey from the inception of the institute, initially it has been serving to cater the need of engineering students of various branches. The Department started new program for undergraduate (B.Tech.) in Chemical Engineering in the year of 2006. Later on, the post-graduation program (M.Sc.) in Chemistry for two years duration was commenced in the year of 2012. More than sixty Ph.D. degrees have been awarded till 2019. At present thirty students are pursuing their research work to attain their doctoral degree. The highly motivated students, who understand the research dynamics and upgrade their skills, are strengthening the department's back bone. In their curriculum they are encouraged to take part in different projects to supplement theoretical knowledge with practical experiences. In order to interact with the outside world, the department has active collaboration with the academic as well as research organizations in India and abroad. The department is organizing Continuous Educational Events like STTP courses, Seminars, and conferences. The curriculum is taught by the distinguished faculty members with the combination of academic excellence and diverse research exposure in working different areas of science and technology with complete dedication and commitment. The research field includes Organic synthesis, Solid state chemistry, Crystal engineering and Nano-materials, Polymers and elastomeric composites, Inorganic Chemistry, Photo-catalysis and Bioinorganic Catalysis, Biophysical Spectroscopy and Photobiology, Chemical Thermodynamics, Resource Recovery and Environmental remediation, Bio-catalysis and Organic Chemo-Sensor, Electro-analytical Chemistry. The faculty members of the department have been awarded various national and international research fellowships. They have also authored many books and participated in national and international conference. The publication of their research works in various SCI index journals are the regular activities of the Department. Many R&D projects are being funded by different funding agencies viz. SERB, DST, MHRD, UGC, BRNS, CSIR, etc. Department has well-equipped laboratories with modern instrumental facilities and has been recognized by DST-FIST Sponsored Department since 2017!

FACULTY MEMBERS

DR. ANUPAMA KUMAR (HoD)
DR. SURESH S. UMARE
DR. JAYANT D. EKHE
DR. SUJIT K. GHOSH
DR. RAMANI V. MOTGHARE
DR. CHAYAN DAS
DR. ATUL V. WANKHADE
DR. UMESH R. PRATAP
DR. SANGESH P. ZODAPE
DR. SUSANTA K. NAYAK
DR. S. LAXMI GAYATRI
DR. ABHISHEK BANERJEE
DR. SANDIPAN HALDER

Recent Publications...

1. "Investigations into the supercapacitor activity of bisphosphonate-polyoxovanadate compounds" Anjana Anandan Vannathan, Dewendra Thakre, Sk Rajab Ali, Mrinmoy De, **Abhishek Banerjee**, Sib Sankar Mal, *Journal of Solid State Chemistry*, **2021**, 304, 122566.
2. "Studies of solute–solvent interactions of imidazolium-based ionic liquid in water and aqueous L-alanine solution via volumetric and compressibility properties at T = (293.15–313.15) K" Anuja Jain, Vandana S. Shende, D.V. Kawadkar, Umesh R. Pratap, Atul V. Wankhade, **Sangesh. P. Zodape**, *Journal of Chemical Thermodynamics*, **2021**, 162, 106561.
3. "Investigation of the thermodynamic and compressibility properties of antihypertensive drug hydralazine hydrochloride in aqueous and aqueous amino acids solutions at various temperatures" Vandana S. Shende, Umesh R. Pratap, Atul V. Wankhade, **Sangesh. P. Zodape**, *J. Mol. Liq.* **2021**, 321, 114755.
4. "Investigation of molecular interactions of a drug Isoprenaline Hydrochloride-L-alanine in water at different temperatures" Vandana S. Shende, Umesh R. Pratap, Atul V. Wankhade, **Sangesh. P. Zodape**, *Journal of Molecular Liquids*, **2021**, 337, 116580.
5. "Computationally designed ionic liquid based molecularly imprinted@ graphene oxide composite: Characterization and validation" Ranjita S. Das, Atul V. Wankhade, **Anupama Kumar**; *Journal of Molecular Liquids*, **2021**, 341, 116925.
6. "Interplay of Halogen and Hydrogen Bonding through Co–Crystallization in Pharmacologically Active Dihydropyrimidines: Insights from Crystal Structure and Energy Framework" K. M. Bairagi, K. S. Ingle, R. Bhowal, S. A. Mohurle, A. Hasija, O. I. Alwassil, K. N. Venugopala, D. Chopra, **S. K. Nayak**, *ChemPlusChem*, **2021** 86, 1167-1176. (<https://doi.org/10.1002/cplu.202100259>).
7. "Copper (II) Complexes with NNN and NNO Schiff Base Ligands as Efficient Photodegradation Agents for Methylene Blue, Preferential BSA Binder and Biomaterial Transplants, K. Jana, U. Pramanik, K. S. Ingle, R. Maity, S. Mukherjee, **S. K. Nayak**, S. Chandra Debnath, T. Maity, S. Maity, B. Chandra Samanta, *Journal of Photochemistry and Photobiology A: Chemistry*, **2021**, 422, 113565. (<https://doi.org/10.1016/j.jphotochem.2021.113565>).

Conference Publications...

Dr. Anupama Kumar has been selected for the **Best Oral Presentation Award** at **National Virtual Conference on Food Waste Utilization: Strategies, Applications, Food Security & Technology Dissemination (FWU – 2021)** for the oral paper entitled "Molecularly imprinted adsorbents for selective recovery of Ellagic acid from pomegranate peels". Organized by Indian Institute of Food Processing Technology (IIFPT), Thanjavur, Tamil Nadu, INDIA under Ministry of Food Processing Industries (MOFPI), Govt. of India during **8th to 9th September, 2021**.



Ms. Anuja Jain working under **Dr. Sangesh. P. Zodape** has received best oral presentation award at International Virtual Conference on Current Scenario in Chemical Sciences (**CSCS – 2021**). Title of the presentation "Solvation thermodynamics of [BMIm][BF₄] in aqueous solution at different temperatures: Volumetric and Compressibility approach". Organized by the School of Chemical Sciences, Moolji Jaitha College (Autonomous), Jalgaon (MS), India during **6th to 7th September, 2021**.

Invited Talks...

Dr. S. K. Nayak has delivered an invited talk entitled "Structural insight & application: From liquid to liquid crystalline materials" in the seminar entitled "Structural Aspects of Advanced Material Chemistry-2021 (SAAMC-2021)." On **1st September, 2021**, organized by Fakir Mohan University, Vyasa Vihar, Balasore, Odisha, India.

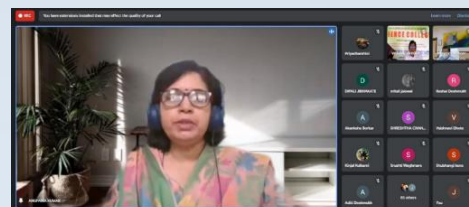
Dr. Abhishek Banerjee has delivered an invited talk entitled "Development of Biomimetic Materials for Bioinorganic Catalysis" in the seminar entitled "Structural Aspects of Advanced Material Chemistry-2021 (SAAMC-2021)" **1st September, 2021**, organized by Fakir Mohan University, Vyasa Vihar, Balasore, Odisha, India.

Dr. Anupama Kumar has delivered guest lecture entitled "Sustainability through Molecular Imprinting- Idea, concept and execution" for the UG/PG students of Shivaji Science College, Nagpur on the occasion of International Ozone Day on **16th September, 2021**.

Dr. Suresh S. Umare has deliver talk at NIT, Surat STTP on "Organic-inorganic Hybrid Materials", **4th to 8th October, 2021**. Title of the talk: Organic-inorganic Hybrid Nanocomposites for Environmental and Energy remediation.

Achievements...

On the occasion of Teachers Day, **5th September, 2021**, **Dr. Jayant D. Ekhe** and **Dr. Suresh S. Umare** of the Chemistry Department were felicitated by the honorable Director **Prof. P. M. Padole** for their auspicious and dedicated services of teaching, research and administration more than **25 years** to Department as well as institute.



Farewell Program for Outgoing M.Sc. Students...

A farewell ceremony has been organized on 3rd July 2021 to congratulate 19 students who have completed their M.Sc. degree in chemistry in 2021.



Congratulations to the Achievers...

Mr. Prabhakar Shrivastava has successfully delivered his Ph.D. defense seminar, thesis entitled "Development of biocatalytic methods for the synthesis of biodynamic heterocycles" on 25th August 2021, he has worked under the supervision of Dr. Umesh Pratap.



- **M.P. Guru Prakash** (2021 M.Sc. passed out): has qualified CSIR-UGC NET December 2020, AIR 86 (JRF).
- **Omkar Dash** (2021 M.Sc. passed out): has qualified GATE 2021 with rank 2007.
- **Aadityapran Boruha** (2021 M.Sc. passed out): has qualified GATE 2021 with rank 2426.
- **Mitesh Raul** (2021 M.Sc. passed out): has qualified GATE 2021 with rank 4496.

Doctoral Program Admission...

- **Mr. Piyush Kumar** (2020 M.Sc. passed out): Taken admission for PhD program 2021 at the Department of Chemistry, IISER, Mohali.
- **Mr. Bhojkumar Nayak** (2020 M.Sc. passed out): Taken admission for PhD program 2021 at the Department of Chemistry, IISER, Pune.
- **M.P. Guru Prakash** (2021 M.Sc. passed out): Taken admission for PhD program 2021 at the Department of Chemistry, IIT Madras.

Editorial Board

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