

# CHEM NEWS Issue 6



A Newsletter from the Department of Chemistry, VNIT Nagpur, 2020, **Issue 6** 

Published on 15th JANUARY, 2021

### DOWN TO CHEMISTRY...

# Message from HoD's Desk...



Welcome to the Department of Chemistry, VNIT Nagpur! We, the Department of Chemistry, feel our enthusiasm to publish the sixth 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, Biocatalysis 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...

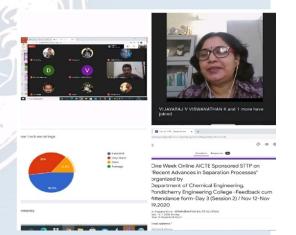
1. "Chlorophyllin sensitized carbon nitride scaffolds for photocatlytic applications" Toshali H. Bhoyar, Devthade Vidyasagar, **Suresh S. Umare** *Materials Today Communications* **2020**, 24, 101119.

- 2. "Production, structural and corrosion protection study of electroactive polyamide/alumina nanocomposites" Chavhan Jitendra, Rathod Ramesh, Malav Jeetendra Kumar and **Suresh S. Umare**, *Surf. Topogr.: Metrol. Prop.* **2020**, *8*, 045029.
- 3. "Adsorption of five emerging contaminants on activated carbon from aqueous medium: kinetic characteristics and computational modeling for plausible mechanism" Archana Rao, **Anupama Kumar**, Rita Dhodapkar, Sukdeb Pal; *Environmental Science and Pollution Research* https://doi.org/10.1007/s11356-020-12014-1.
- 4. "Separation and Recovery of 4-Hydroxybenzoic Acid Using Molecular Imprinting Technique from Dilute Solution" Praful Dadhe, Sachin A. Mandavgane, **Anupama Kumar**; *Journal of The Institution of Engineers* (India): Series E (Chemical and Textile Engineering) **DOI 10.1007/540034-020-00198-7**.
- 5. "Chemistry, anti-diabetic activity and structural analysis of substituted dihydropyrimidine analogues" Keshab M. Bairagi, Nancy Safwat Younis, Promise Madu Emeka, Katharigatta N. Venugopala, Osama I. Alwassil, Hany Ezzat Khalil, Ekta Sangtani, Rajesh G. Gonnade, Viresh Mohanlall, **Susanta K. Nayak**, *J. Mol. Struct.*, https://doi.org/10.1016/j.molstruc.2020.129412.
- 6. Z. Setifi, N. Cubillán, C. Glidewell, S. K. Nayak, M. Morales-Toyo, R. Khajavian, F. Setifi, M. Mirzaei, "Analysis of supramolecular interactions directing crystal packing of a trans, trans, trans-[diaquabis (4-quinolin-3-yl)-4H-1, 2, 4-triazole) bis (tricyanomethanide) iron (II)] complex: A combination of XRD, MEP, NBO, QTAIM, and NCI analyses", *J. Mol. Struct*. https://doi.org/10.1016/j.molstruc.2020.129438, (Accepted 9 October 2020).
- 7. Desulfurization studies of liquid fuels through nickel-modified porous materials from Pongamia pinnata Zakiullah Zaidi, Laxmi Gayatri Sorokhaibam Applied Petrochemical Research https://doi.org/10.1007/s13203-020-00256-6.

### Invited Talks...

**Prof. Anupama Kumar** has delivered a guest lecture entitled as "**SEPARATION FROM DILUTE SOLUTIONS**" in the AICTE sponsored Short Term Training program on 'Recent Advances in Separation Processes (RASP)" (November 12th – November 19th, 2020) on on 16.11.2020.

Prof. S. S. Umare delivered an invited talk entitled "PHOTOCATALYSIS FOR ENVIRONMENTAL REMEDIATION". In the AICTE sponsored Faculty Development Program at Laxmi Narayan Institute of Technology, RTM Nagpur University,



## Congratulations to the Achievers...

Following students have qualified National Eligibility Test (NET) 2020.

- Mr. Guruprakash M. P. (M.Sc., 2019-2021)
- Sunita Malla (M.Sc. 2018-2020)
- BhojKumar Nayak (M.Sc. 2018-2020)
- Changela Bhautikkumar Maganlal (M.Sc. 2018-2020)
- Tanu Priya Singh (M.Sc. 2018-2020)
- Prativa Behera





- Following students have secured their positions as Ph.D. Scholar in prestigious nationalized institutes
  - Shiva Singh, Ph.D. IIT Roorkee
  - Laxmikanta Mallick: Ph.D. at IIT, Delhi
  - Pragya: Ph.D. at IIT, Delhi
  - Piyush Kumar: Ph.D. at IIT, Ropar.
  - Bijesh Kumar Malla: Ph.D. at IIT, Madras
  - Sumran Raikwar: Ph.D. at IIT, Madras
  - Riya Gupta: Ph.D. at Kanpur











### Highlighting the Chemistry Achievers..

# The Nobel Prize in Chemistry 2020

The Nobel Prize in Chemistry 2020 has been awarded to

- Emmanuelle Charpentier
   Max Planck Unit for the Science of Pathogens, Berlin,
   Germany
- Jennifer A. Doudna
   University of California, Berkeley, USA.



Emmanuelle Charpentier and Jennifer A. Doudna have discovered an important tool of gene technology, named as the CRISPR/Cas9 genetic scissors. Using this technology, researchers can change the DNA of animals, plants and microorganisms with extremely high precision. This technology





Since **Charpentier** and **Doudna** discovered the CRISPR/Cas9 genetic scissors in 2012 their use has exploded. This tool has contributed so many important discoveries in basic research, and plant researchers have been able to develop crops that withstand mould, pests and drought. In medicine, clinical trials of new cancer therapies are underway, and the dream of being able to cure inherited diseases is about to come true. These genetic scissors have taken the life sciences into a new epoch and, in many ways, are bringing the greatest benefit to humankind.

### **Editorial Board**

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ASSISTANT PROFESSOR

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