



CHEM NEWS Issue 8

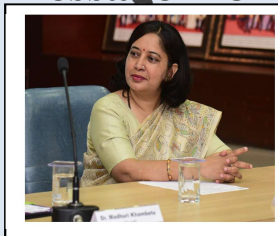


A Newsletter from the Department of
Chemistry, VNIT Nagpur, 2020, Issue 8

Published on 15th JULY, 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, 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. "Reinforcement Effect Of In Situ Developed Itaconic Acid Based Metal Salt Nano-Crystals In Acrylonitrile-Butadiene Copolymer" Debdipta Basu, Bharat Kapgate, Naresh Bansod, Kasilingam Rajkumar, Suchismita Sahoo, **Chayan Das**
Rubber Chemistry and Technology (2021), <https://doi.org/10.5254/rct.21.79908>.
2. "Polyoxovanadates with Ethylidene-Pyridine Functionalized Bisphosphonate Ligands: Synthesis, Structure, Spectroscopic Characterization, Magnetic, and Antibacterial Studies"
Dewendra Thakre, Sk Rajab Ali, Sakshi Mehta, Noohul Alam, Masooma Ibrahim, Debajit Sarma, Abhishake Mondal, Mrinmoy De, and **Abhishek Banerjee**
Crystal Growth & Design 2021, 21, 4285–4298 DOI: doi.org/10.1021/acs.cgd.0c01692
3. "Crystallography, Molecular Modeling, and COX-2 Inhibition Studies on Indolizine Derivatives," K. N. Venugopala, S. Chandrashekarappa, C. Tratratt, P. K. Deb, R. D. Nagdeve, **S. K. Nayak**, M. A. Morsy, P. Borah, F. M. Mahomoodally, R. P. Mailavaram, *Molecules* 2021, 26, 3550.
(<https://doi.org/10.3390/molecules26123550>).
4. "Anti-tubercular activity and molecular docking studies of indolizine derivatives targeting mycobacterial InhA enzyme" K. N. Venugopala, S. Chandrashekarappa, P. K. Deb, C. Tratratt, M. Pillay, D. Chopra, N. A. Al-Shar'i, W. Hourani, L. A. Dahabiyeh, P. Borah, R. D. Nagdeve, **S. K. Nayak**, B. Padmashali, M. A. Morsy, B. E. Aldhubiab
Journal of enzyme inhibition and medicinal chemistry 2021, 36, 1472-1487.
5. "Exciton dissociation on Double Z-scheme Heterojunction for Photocatalytic Application"
Ashok G. Shende, Toshali Bhojar, Devthade Vidyasagar, Jaspreet Singh, Prakash T. Kosankar, and **Suresh S. Umare**, *Chemistry Select* 2021, 6, 6707-6713,

Book Chapter...

Book Chapter entitled "CRYSTALLINE NANOMATERIALS FOR ANTIMICROBIAL APPLICATIONS" by Deepika S. Brijpuriya, Dilip R. Peshwe and **Anupama Kumar** by has been accepted and is under publication for the Book entitled "*Industrial Applications of Nanocrystals*" to be published by Elsevier.

Invited Talks...

Dr. S. S. Umare Kumar has delivered an invited lecture entitled as 'Design of Visible Light Active Photocatalyst for Degradation of Dyes and Reduction of N₂ and CO₂' in a STTP on Micro & Nano Chemistry Meets Technological Development organized by NIT, Surat, during 5th – 9th July, 2021.

Dr. Chayan Das delivered an invited talk entitled, "Versatile role of Zirconia in developing polymeric and elastomeric composites" in the International Online Conference on Nano Materials (ICN 2021) during 09th - 11th April 2021 Kottayam, Kerala, Organized by Mahatma Gandhi University, Kottayam, Kerala, India July, 2021.

Patent Granted...

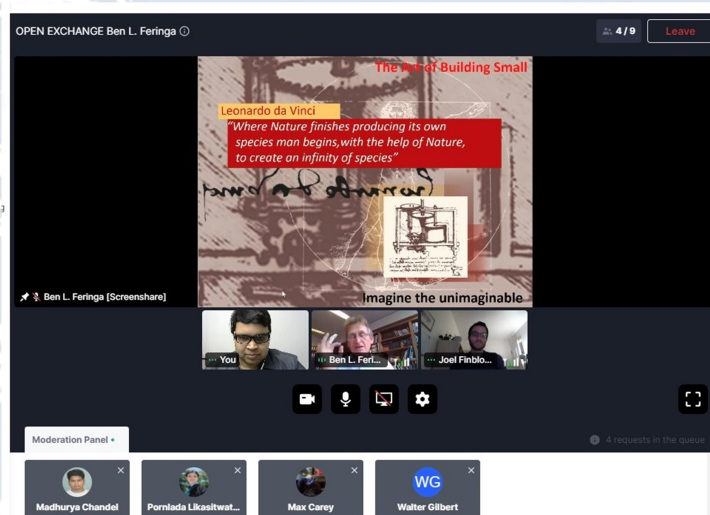
Patent application from the research group of **Dr. Sandipan Halder** entitled as "A PROCESS FOR THE SYNTHESIS OF HIGHLY FUNCTIONALIZED DIASTEREOPURE 2,5-DISUBSTITUTED TETRAHYDROFURAN DERIVATIVES" (application no. 201921036987, patent no. 366587) has been awarded final grant.

Research Project Funded...

Research project entitled as "Green Preservatives for enhancing the shelf life of Fruits and Vegetables using Biorefinery approach" (No. S and T/18/34/2020-KVIC/2020-21/16215/482) has been awarded for funding form the Khadi and Village Industries commission (KVIC) of worth 14.95 lakhs to **Dr. Anupama Kumar**.

Participation in 70th Lindau Nobel Laureate Meeting...

Dr. Abhishek Banerjee participated in the 70th Lindau Nobel Laureate Meetings, during 27th June to 2nd July 2021. **Dr. Banerjee** (an alumni of the 60th Lindau Nobel Laureate Meetings, 2010) chaired an Open Exchange Session with **Prof. Ben Feringa** (2016 Nobel Prize winner in Chemistry) in his lecture entitled as 'The Joy of Discovery' in which he shared his journey as a researcher and his highlighted achievements leading to his Nobel Prize.



Conference Organized...

A Virtual Meeting on "Futuristic trends in Small Molecule Crystallography (FTSMC-21)" organized by Indian Crystallographic Association (ICA), on 3rd July 2021, with the local organizing committee of Prof. Deepak Chopra, IISER Bhopal, Dr. Amol Dikundwar, NIPER Hyderabad and **Dr. Susanta K. Nayak**, Department of Chemistry, VNIT Nagpur. Prof. Punit Kaur, President of ICA, Professor, AIIMS, New Delhi, inaugurated this event along with Prof. B. Padmanabhan, NIMHANS, Bangalore and Prof. K. Sekar, IISc Bangalore, executive members of ICA.



Congratulations to the Achievers...

Mr. Keshab M. Bairagi defended successfully his PhD. defense, thesis entitled "Design, synthesis, pharmacological screening of dihydropyrimidines and their co-crystals, structure and liquid crystal study" on 9th June 2021, under supervisor **Dr. Susanta Kumar Nayak**.



Mr. Prabhakar Shrivastava has successfully submitted his doctoral thesis entitled as "Development of biocatalytical methods for the synthesis of biodynamic heterocycles" under the supervision of **Dr. Umesh R. Pratap**.



Mr. Shiva Singh (2019 M.Sc. passed out): recipient of prestigious Prime Minister's Research Fellowship (PMRF Scheme, May 2021) for pursuing Ph.D. at IIT, Roorkee.



Students have taken admission for doctoral program:

- **Mr. Mrityunjay Pandey**: Department of Chemistry and Biochemistry The Ohio State University Columbus, USA.
- **Ms. Akanksha Gupta**: Department of Chemistry, Bar Ilan University, Ramat Gan, Israel.
- **Mr. Bhojkumar Nayak**: Department of Chemistry IIT Delhi, India.

Editorial Board

Dr. SANDIPAN HALDER
ASSISTANT PROFESSOR

E-Mail: sandipanhalder@chm.vnit.ac.in

Mr. SIBASISH MANNA
Research Scholar
sibasishmannachem@gmail.com