



CHEM NEWS Issue 4



A Newsletter from the Department of
Chemistry, VNIT Nagpur, 2020, Issue 4

DOWN TO CHEMISTRY...

Published on 15th February, 2020

Message from HoD's Desk...



Welcome to the Department of Chemistry, VNIT Nagpur! We, the Department of Chemistry, feel our enthusiasm to publish the fourth issue of the quarterly newsletter, “*CHEM NEWS*.” I, as a head of the department would like to thank all the faculty members, non-teaching staff 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.

~Prof. S.S. Umare

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 backbone. 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. SURESH S. UMARE (HOD)

DR. JAYANT D. EKHE

DR. ANUPAMA KUMAR

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. “Electrochemical Determination of Chlorophenaramine Based on RTIL/CNT Composite Modified Glassy Carbon Electrode in Pharmaceutical Samples” by Shirinaz I. Khan, **R. V. Motghare** *J Electrochem. Soc.* **2019**, 166, B1202-1208.
2. “Crystal structure of 1:1 cocrystal of nicotinamide with 2-chloro-5-nitro benzoic acid” by Keshab M. Bairagi, Priyanka Pal, Subhrajyoti Bhandary, Katharigatta N. Venugopala, Deepak Chopra and **Susanta K. Nayak**. *Acta Crystallography Section E*, **2019**; E75, 1712–1718.
3. “Antidiabetic Activity of Dihydropyrimidine Scaffolds and Structural Insight by Single Crystal X-ray Studies” by Keshab M. Bairagi, Nancy S. Younis, Promise M. Emeka, Ekta Sangtani, Rajesh G. Gonnade, Katharigatta N. Venugopala, Hany E. Khalil, and **Susanta K. Nayak**. *Medicinal Chemistry*, **2019**.
4. “Extended π -conjugative n-p type homostructural graphitic carbon nitride for photodegradation and charge-storage applications” by Devthade Vidyasagar, Sachin G. Ghugal, **Suresh S. Umare** & Murali Banavoth. *Scientific Reports*, **2019**, 1-10.
5. “Production, Measurement and Anticorrosion Properties of Electroactive Polyimide/Tin oxide Nanocomposites” Jeetender Kumar Malav, Ramesh Rathod, **Suresh Umare**, Awanikumar Patil and Sachin Ghugal. *Mater. Res. Express.* **2019**, 6, 065306.
6. “Entrapment in micellar assemblies switches the excimer population of potential therapeutic luminophore azapodophyllotoxin” by Soham Mukherjee, Smruti Gupta, Kapil Ganorkar, Ajay Kumar, **Sujit Kumar Ghosh**. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* **2020**, 228, 117723, DOI: 10.1016/j.saa.2019.117723.
7. “The consequences of adopting therapeutic luminophore Azapodophyllotoxin into BSA: A molecular regulator to control emissive population of two Tryptophan residues in carrier protein” by Soham Mukherjee, Kapil Ganorkar, Smruti Gupta, Ajay Kumar, Anuja Singh and **Sujit Kumar Ghosh**. *Journal of Biomolecular Structure & Dynamics* **2020**, 38, 2338–2351, DOI: 10.1080/07391102.2019.1630320.
8. “Synthesis and Characterization of Acid-Responsive Luminescent Fe (II) Metallopolymers of Rigid and Flexible Backbone N-Donor Multidentate Conjugated Ligands” by Anil Kumar, Shubham Bawa, Kapil Ganorkar, **Sujit Kumar Ghosh**, and Anasuya Bandyopadhyay. *Inorg. Chem.* **2020**, 59, 1746–1757, DOI:10.1021/acs.inorgchem.9b02985.
9. “Physicochemical properties and in-vitro release study of CFLE-chitosan microsphere beads” by Vandana Suryavanshi, Preeti K. Suresh, **Chayan Das**, Tungabidya Maharana. *J. Polym. Res.* **2019**, 26, 288, DOI: 10.1007/s10965-019-1954-7.

Ph.D. Awarded...

Research scholar **Ms. Shirinaz I. Khan** has been awarded the Ph.D. degree under the supervision of **Dr. Ramani V. Motghare** on **December, 2019**, for the thesis entitled “*Development of Electrochemical Sensor for the Detection of Clinically Relevant Analytes.*”



Research scholar **Mr. Swapnil K Warkhade** has been awarded the Ph.D. degree under the supervision of **Dr. Atul V. Wankhade** on **December, 2019**, for the thesis entitled as “*Designing of Nanostructured Materials for Photocatalytic and Catalytic Applications.*”



Congratulations to the Achievers...

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nt CSIR NET December, 2019,



Installation of Instrument...

Powder X-Ray Diffractometer (Bruker D8 Advance A25 ECO) is installed successfully in the Department of Chemistry supported by DST-FIST (Faculty In-Charge: **Dr. S. K. Nayak**).



Training Program...

A Training Program on Powder X-Ray Diffractometer was conducted during **23rd -25th October, 2019** by Expert **Mr. Noel Correia**, Bruker India Scientific Pvt. Ltd. for Research Scholars, Master students and Faculty members of Chemistry Department, Organized by **Dr. S. K. Nayak & Dr. S. S. Umare**.



Department of Chemistry in association with IGNOU Regional Centre Nagpur has organized **SALTERS' CHEMISTRY CAMP** as a part of the Diamond Jubilee Celebration of the institute (under SANKALP). The camp was for the 9th class students from Zilla Parishad and Nagpur Municipal Corporation Schools and parts of Gadchiroli, Wardha, Bhandara, Gardiya, Amravati and Warora districts, sponsored by Royal Society of Chemistry (RSC) and SALTERS' Institute, London during **3rd -5th January 2020**. Sixty eight students participated in the event coordinated by **Prof. S. S. Umare** and **Dr. Chayan Das**. The camp was inaugurated by **Prof. P. M. Padole**, Director, VNIT Nagpur and **Prof. Kamal Singh**, Ex-Vice Chancellor, SGB Amravati University.



Invited Talks..

- Prof. S. S. Umare** delivered an invited talk entitled "**Ag/AgO/g-C₃N₄ Microspheres for Degradation of AV 7 Dye & Bacterial Inactivation**" at Seth Kesarimal Porwal College of Science, Kamptee, in the 11th National Conference on Solid State Chemistry and Allied Areas on **20th December, 2019**.
- Prof. S. S. Umare** delivered an invited talk entitled "**g-C₃N₄ based Photocatalytic Systems for Energy and Environmental Applications**" at Kamla Nehru Mahavidyalaya, Nagpur, in the International Conference on Advanced Functional Materials during **23rd -25th January, 2020**.
- Dr. Sandipan Halder** delivered an invited talk entitled "**Stereoselective Synthesis of Functionalized Ring Systems: A Domino Reaction Approach**" in the International Conference on Chemistry for Human Development (ICCHD-2020) at Heritage Institute of Technology, Kolkata during **9th -11th January, 2020**.



Research Grant...

Dr. Atul V. Wankhade has received DAE-BRNS sponsored research grant entitled “*Tungsten and Indium Oxide Coated Dendritic Fibrous Nano-silica for Photocatalytic Water Splitting*” with total grant of INR 34,83,350 (April 2019 to March 2022).

Beyond the Chalk & Talk...

Faculty members of the department **Dr. Anupama Kumar**, **Dr. Atul V. Wankhade** and **Dr. Sangesh P. Zodape** represented VNIT at Inter NIT Faculty and Staff Sports Meet held at MNIT, Jaipur during 18th -20th December, 2019.

- **Dr. Anupama Kumar** won Gold Medals in Table Tennis (TT) in TT Singles as well TT doubles (women).
- **Dr. Atul V. Wankhade** and **Dr. Sangesh P. Zodape** won the Gold Medal in Chess tournament.
- **Dr. Atul V. Wankhade** has participated in All India Inter NIT faculty & Staff cricket tournament at VNIT, Nagpur during 27th -30th December, 2019.



Dr. Anupama Kumar was invited as Guest of Honor for the 22nd Annual Art, Craft and Science Exhibition on 24th December, 2019 at Blind Relief Association's Mundle English Medium School. Shri Sandip Joshi, Honorable Mayor of Nagpur was Chief Guest for the occasion. The theme was 150 years of Periodic Table & 150 years of the Birth anniversary of Mahatma Gandhi.



Retirement of Our Beloved Staff...

Hearty Congratulations **Mr. Subhash T. Zade** for his retirement. His contributions to the undergraduate laboratory of the department with the guidance he provided will be sorely missed. The VNIT Chemistry family has celebrated the day on 31st December, 2019. We wish you peaceful retirement life with full of happiness.



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