



# CHEM

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A Newsletter from the Department of  
Chemistry, VNIT Nagpur, 2019, Issue 2

Published on 15<sup>th</sup> June, 2019

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 second 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

### Departmental Overview...

Department of Chemistry has started the journey from the beginning of the institute, has been serving to cater the need of engineering students of various branches. The Department started post-graduation program (M.Sc.) in Chemistry for two years duration in the year of 2012. More than fifty 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 experience and also allow them to organize Continuous Educational Events like STTP courses, Seminars, and conferences. With all these inputs one finds our students as hardworking, adaptive and efficient in any work environment. We are confident that our current curriculum has enabled overall development of the students to compete with the expectations of the global platform. The curriculum is taught by a distinguished faculty combining academic excellence and research world experience in working different areas of science and technology that 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 with complete dedication and commitment. The faculty members of the department have been awarded various 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**

## Ph.D. Awarded...

Research scholar **Mrs. Deepali Rahangdale** has been awarded the Ph.D. degree under the supervision of **Dr. Anupama Kumar** on **March, 2019**. Her thesis was entitled as *“An Imprinting Approach to Design Chitosan Based Sorbents for Salicylic Acid and Cadmium.”*

Research scholar **Mr. Dinesh V. Kawadkar** has been awarded the Ph.D. degree under the supervision of **Dr. Sangesh P. Zodape** on **May, 2019**. The thesis was entitled as *“Thermophysical properties of Ionic liquids in Aqueous Solutions at Different Temperatures.”*



## Recent Publications...

1. *Molecular Bases for Anesthetic Agents: Halothane as Halogen and Hydrogen Bond Donor* by Susanta K. Nayak, Giancarlo Terraneo, Quirino Piacevoli, Federica Bertolotti, Patrick Scilabra, John T. Brown, Sergiy Rosokha, Giuseppe Resnati, *Angew. Chem. Int. Ed.* (Accepted), **2019**, (DOI: 10.1002/anie.201907829).
2. *Occurrence, Fate, Persistence and Remediation of Caffeine: A Review* by Girish Korekar, Anupama Kumar and Chetna Ugale, *Environmental Science and Pollution Research*: springer, **2019**, (DOI: 10.1007/11356-019-05667-0).
3. *2D/2D Wg-C3N4/g-C3N4 Composite as “Adsorb and Shuttle” Model Photocatalyst for Pollution Mitigation* by Devthade Vidyasagar, Akanksha Gupta, Aniket Balapure, Sachin G. Ghugal, Ashok G. Shende, Suresh S. Umare, *Journal of Photochemistry & Photobiology A: Chemistry* **2019**, 370, 117-126.
4. *Graphitic Carbon Nitride- $\gamma$ -Gallium Oxide (GCN- $\gamma$ -Ga<sub>2</sub>O<sub>3</sub>) nano-hybrid Photocatalyst for Dinitrogen Fixation and Pollutant Decomposition* by Vidyasagar Devthade, Akanksha Gupta, Suresh S. Umare *ACS Applied Nano Materials*, **2019**, 1, 5581-5588.
5. *Functionalization of EPDM Rubber Toward Better Silica Dispersion and Reinforcement* by Naresh D. Bansod, Bharat P. Kapgate, Pradip K. Maji, Anasuya Bandhopadya and Chayan Das *Rubber Chemistry and Technology* **2019**, 92, 219-236. (ACS).
6. *The Consequences of Adopting Therapeutic Luminophore Azapodophyllo toxin 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*, **2019**.
7. *Benzothiazole Analogs as Potential Anti-TB Agents: Computational Input and Molecular Dynamics* by K. N. Venugopala, M. A. Khedr, M. Pillay, S. K. Nayak, S. Chandrashekhara, B. E. Aldhubiab, S. Harsha, M. Attimard, B. Odhav *Journal of Biomolecular Structure and Dynamics* **2019**, 37, 1830-1842.
8. **Book Chapter** *“Chitosan and its derivative: a new versatile bio-polymer for various applications”* by Anupama Kumar, Deepali Rahangdale, Neha Joshi In the book entitled *“Functional Chitosan: Drug Delivery and Biomedical applications”* in Springer, **2019**.

## Invited Talks...

**Dr. Sujit Kumar Ghosh** has delivered an invited talk entitled “Design, Synthesis and Unveiling the Potential of Unfused Naphthalimide based bi-luminophore to Induce Cytotoxicity by Binding to Tubulin” on **26<sup>th</sup> March 2019** at Department of Chemistry, Rashtrasant Tukadoji Maharaj Nagpur University.

**Dr. Anupama Kumar** has delivered an invited talk on **20<sup>th</sup> May, 2019** in STTP on “Interdisciplinary Research Methodology, ICT Application and Innovation” organized by Department of Humanities and Social Sciences at VNIT.

**Dr. Sandipan Halder** has delivered an invited talk entitled “Domino Reactions as a Potential Tool for the Synthesis of Biologically Prevalent Ring Systems” on **11<sup>th</sup> June 2019** at Ural Federal University, Ekaterinburg (Russia) during the 4<sup>th</sup> Russian Conference on the Medicinal Chemistry with international participants.



## Celebrating with winners...

National postdoctoral fellow **Dr. Sneha Wankar**, under the supervision of **Dr. S. K. Ghosh** has been awarded first prize in oral presentation entitled: “**Hybrid material derived via embedding ternary lanthanide complexes in inorganic/organic matrix**” in National conference of Chemistry for High Efficiency Materials (CHEM-2019) held on 26-27 March 2019 at Department of Chemistry, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.

**Mr. Kapil Ganorkar** Ph.D. student supervision of **Dr. S. K. Ghosh** got a first prize in poster Presentation entitled: “**Newly Designed and Synthesis of ES IPT Based Thiosemicarbazone Schiff Base Derivative and Its Anti-Proliferative Activity**” in National conference of Chemistry for High Efficiency Materials (CHEM-2019) held on 26-27 March 2019 at Department of Chemistry, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur.



## Scaling Heights...

M.Sc. students have qualified the prestigious National Eligibility Test (NET, Dec. 2018) and Graduate Aptitude Test in Engineering (GATE, 2019) exam to continue research. Hearty congratulations to **Ms. Sumran** (NET-JRF, AIR 91) and **Ms. Toshali** (NET-LS, AIR 81), **Mr. Pradip Bhai** (GATE) and **Ms. Riya** (GATE) for their wonderful achievements.



## Research Grants...

The Council of Scientific and Industrial Research (CSIR) Govt. of India supported grant application of **Dr. Abhishek Banerjee** devoted to the *Aromatic Bisphosphonate-functionalized Polyoxovanadates: Synthesis, Structural Characterization and Electrochemical Studies* under the Inorganic & Physical Chemistry in Sponsored Research Scheme (EMR II).

## Retirement celebration of our staff...

Hearty Congratulations **Mr. Bhimrao R. Bhiogade** for his retirement. *His contributions to the overall working and the daily operation of the department, with the guidance he provided will be sorely missed.* The Chemistry family has celebrated the day on **31<sup>st</sup> of May, 2019**. We hope you have a fun and peaceful retirement life! May every moment of your life be full of joy.



## Difficult to say Good Bye to seniors...

The entire family of the department of Chemistry including faculty, students and non-teaching staff bid farewell to the M.Sc. 2<sup>nd</sup> year and Ph.D. students on the evening of **6<sup>th</sup> April, 2019**. At the closing all faculties delivered their final remarks wishing *Best of luck* for their future endeavor.

**EVERY ENDING HAS A BEAUTIFUL BEGINNING...**



## Beyond the Chalk & Talk...

Technical visit was made by **Dr. Sandipan Halder** to the St. Petersburg State University (Russia) with the invitation from **Professor Mikhail Krasavin**. A VNIT memento was presented to Professor Krasavin as token of appreciation.



## Alumni Corner...

**Mr. Soham Mukherjee, M.Sc. (2015-17)** student has successfully secured Ph.D. position with Graduate Assistant Fellowship in **Cornell University, New York, USA**.

**Mr. Pratik Karmakar, M.Sc. (2016-18)** student has successfully secured Ph.D. position with Petra Pra Jom Klao Doctoral Scholarship in **King Mongkut's University of Technology Thonburi (KMUTT), Bangkok, Thailand**.

## Editorial Board

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