

### Research Publications

1. Kalyani, [Vinay Jaiswal](#), R.B. Rastogi, D. Kumar and P. Singh, Evaluation of Tribological Properties of Sulfur and Phosphorous-free Quinolinium Salts and their Correlation with Quantum Chemical Parameters, *Tribol. Trans.*, **2016**. *Accepted* DOI:10.1080/10402004.2016.1168899
2. [Vinay Jaiswal](#), Kalyani, S. Umrao, R.B. Rastogi, R. Kumar and A. Srivastava, Synthesis, Characterization and Tribological evaluation of TiO<sub>2</sub>-Reinforced Boron and Nitrogen Co-doped Reduced Graphene Oxide Based Hybrid Nanomaterials as Efficient Antiwear Lubricant Additives, *ACS Appl. Mater. & Interfaces*, **8**, **2016** 11698–11710.
3. [Vinay Jaiswal](#), Shraddha R. Gupta, Rashmi B. Rastogi, Rajesh Kumar and Vinod P. Singh Evaluation of antiwear activity of substituted benzoylhydrazones and their copper(II) complexes in paraffin oil as efficient low SAPS additives and their interactions with the metal surface using density functional theory, *J. Mater. Chem. A*, **3**, **2015**, 5092-5109.
4. R.B. Rastogi, J.L. Maurya and [Vinay Jaiswal](#), Highly efficient sulfur and phosphorous free antiwear additives for paraffin oil, *Proc IMechE Part J: J Engineering Tribology*, **2015**, 1-16.
5. Kalyani, [Vinay Jaiswal](#), R.B. Rastogi and D. Kumar The investigation of different particle size magnesium-doped zinc oxide (Zn<sub>0.92</sub>Mg<sub>0.08</sub>O) nanoparticles on the lubrication behavior of paraffin oil, *Appl. Nanosci.*, **2015**.
6. [Vinay Jaiswal](#), Kalyani, R.B. Rastogi and R. Kumar, Theoretical and experimental studies on the tribological behavior of SAPS-free salicylaldehyde propanoylhydrazone Schiff base and its Cu (II) complex in paraffin oil for steel-steel contact, *Ind. J. Tribol.*, **7**, **2015**, 26-32.
7. [Vinay Jaiswal](#), Kalyani, R.B. Rastogi and R. Kumar, Tribological studies of some SAPS-free Schiff bases derived from 4-aminoantipyrine and aromatic aldehydes and their synergistic interaction with borate ester, *J. Mater. Chem. A*, **2**, **2014**, 10424-10434.
8. Kalyani, [Vinay Jaiswal](#), R.B. Rastogi and D. Kumar, Theoretical and Experimental Tribological studies on  $\beta$ -lactum cephalosporin antibiotics as antiwear additives with low SAPS, *RSC Adv.*, *RSC Adv.*, **4**, **2014**, 30500-30510.
9. [Vinay Jaiswal](#), R.B. Rastogi, R. Kumar, L. Singh and K.D. Mandal, Tribological studies of Stearic acid-modified CaCu<sub>2.9</sub>Zn<sub>0.1</sub>Ti<sub>4</sub>O<sub>12</sub> nanoparticles as effective zero

- SAPS antiwear lubricant additives in paraffin oil, *J. Mater. Chem. A*, 2, **2014**, 275-286.
10. [Vinay Jaiswal](#), R.B. Rastogi, J.L. Maurya, P. Singh and A.K. Tewari, Quantum chemical calculation studies for interactions of antiwear lubricant additives with metal surface, *RSC Adv.*, 4, **2014**, 13438-13448.
  11. R.B. Rastogi, [Vinay Jaiswal](#) and J.L. Maurya, Theoretical study of Schiff base compounds as antiwear lubricant additives: A quantum chemical calculation approach, *Proc. IMechE. Part J: J Engineering Tribology*, 228, **2014**, 198-205.
  12. R. B. Rastogi, K. Singh and [V. Jaiswal](#), Synthesis of triphenyltin (IV) and dibutyltin (IV) complexes of 1-aryl-2,5-dithiohydrazodicarbonamides and their characterization, *J. App. Chem.*, 2014, **2014**, 1-5.
  13. R.B. Rastogi, J.L. Maurya, [Vinay Jaiswal](#) and D. Tiwary, Studies on Lanthanum complexes of 1-aryl-2,5-dithiohydrazodicarbonamides in paraffin oil as extreme pressure lubrication additives, *ASME J. Tribol.*, 135, **2013**, 044502(1-6).
  14. R.B. Rastogi, J.L. Maurya and [Vinay Jaiswal](#), Low sulfur, phosphorus and metal free antiwear additives: Synergistic action of salicylaldehyde N(4)-phenylthiosemicarbazones and its different derivatives with Vanlube 289 additive, *Wear*, 297, **2013**, 849-859.
  15. R.B. Rastogi, J.L. Maurya and [Vinay Jaiswal](#), Zero SAPs and ash free antiwear additives: Schiff bases of salicylaldehyde with 1,2-phenylenediamine; 1,4-phenylenediamine and 4,4'-diaminodiphenylenemethane and their synergistic interactions with borate ester, *Tribol. Trans.*, 56, **2013**, 592-606.
  16. R.B. Rastogi, J.L. Maurya and [Vinay Jaiswal](#), Phosphorous free antiwear formulations: Zinc thiosemicarbazones-borate ester mixtures, *Proc. IMechE. Part J: J Engineering Tribology*, 227, **2012**, 220-233.
  17. R.B. Rastogi, J.L. Maurya, [Vinay Jaiswal](#) and D. Tiwary, Lanthanum dithiocarbamates as potential extreme pressure lubrication additives, *Int. J. Ind. Chem.*, 3, **2012**, 32-41.

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1. **Vinay Jaiswal**, Kalyani, R.B. Rastogi and R. Kumar, Tribological Applications of TiO<sub>2</sub>-Reinforced Reduced Graphene Oxide Nanocomposites as Energy Efficient Lubricant Additives, International Conference on Advanced Nanomaterials & Nanotechnology (**ICANN-2015**), 8-11 December, **2015** at Department of Chemistry, IIT Guwahati. **Poster**
2. Kalyani, **Vinay Jaiswal**, R.B. Rastogi and D. Kumar, The investigation on the tribological behavior of Calcium-doped zinc oxide (Zn<sub>0.92</sub>Ca<sub>0.08</sub>O) nanoparticles in paraffin oil, International Conference on Advanced Nanomaterials & Nanotechnology (**ICANN-2015**), 8-11 December, **2015** at Department of Chemistry, IIT Guwahati. **Poster**
3. Kalyani, **Vinay Jaiswal**, R.B. Rastogi and D. Kumar, Tribological studies of Schiff base derived from indole-3-carbaldehyde and 4-aminotriazole as highly effective antiwear additive, International Conference on Multifunctional Materials for Future Applications (**ICMFA 2015**), 27-29 October, **2015** at Department of Chemistry, IIT(BHU)Varanasi. **Poster**
4. **Vinay Jaiswal**, Kalyani, R.B. Rastogi and R. Kumar, Tribological studies of Halogen-free quinolinium based bis(salicylato)borate ionic liquid as Eco-Friendly antiwear lubricant additive, in 17<sup>th</sup> CRSI National Symposium in Chemistry organized held on February 06-08, **2015** at CSIR-NCL, Pune. **Poster**
5. **Vinay Jaiswal**, R.B. Rastogi and R. Kumar, Tribological study of stearic acid modified CaCu<sub>3</sub>Ti<sub>4</sub>O<sub>12</sub> nanoparticles as potential lubricant additive in paraffin oil-TSI914595, (**ASIATRIB-2014**), 17-20 February, 2014 at Agra. **Oral**
6. Kalyani, **Vinay Jaiswal**, R.B. Rastogi and D. Kumar, Tribological behavior of eco-friendly Schiff base lubricant additive for Zero-SAPS and their theoretical studies, International conference on Recent Advances in Analytical Sciences (**RAAS-2014**), 27-29 March, 2014 at Department of Chemistry, IIT(BHU)Varanasi. **Poster**
7. **Vinay Jaiswal**, R.B. Rastogi and R. Kumar, Tribological study of ashless Schiff base 4-AAPB as antiwear additive in paraffin oil, World Congress on Frontiers of Mechanical, Aeronautical and Automobile Engineering (**WCFMAAE-2013**) at IIT-Delhi: 2-3 February, 2013. **Oral**
8. **Vinay Jaiswal**, J.L. Maurya and R.B. Rastogi, Synthesis and structural studies of lanthanum(III) dithiocarbamates, in 15<sup>th</sup> CRSI National Symposium in Chemistry

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organized by Department of Chemistry, Faculty of Science, Banaras Hindu University, Varanasi: February 1-3, **2013**. **Poster**

9. **Vinay Jaiswal**, R.B. Rastogi and R. Kumar, Tribological study of  $\text{CaCu}_{2.90}\text{Zn}_{0.10}\text{Ti}_4\text{O}_{12}$  nanoparticles as an additive in paraffin oil, TSI-812592, 8<sup>th</sup> International Conference on Industrial Tribology (**ICIT-2012**), December 7-9 at Westin Koregaon, Pune. **Oral**
10. Participated in “National Conference on Advance Material (NCAM-2008)” organized by Department of Chemistry, Udai Pratap Autonomous College, Varanasi: March 6-8, **2008**. **Poster**