

LIST OF PUBLICATIONS

- (1) Shukla, N.; **Singh, A. K.**; Verma, D. K.; Kumar, B.; Kavita; Rastogi, R. B. Heterolamellar $\text{Bi}_2\text{Se}_3/\text{Bi}_2\text{WO}_6$ and $\text{Bi}_2\text{Se}_3/\text{N}$ -Doped Bi_2WO_6 Nanosheet Composites as Potential Antifriction and Antiwear Agents. *ACS Appl. Energy Mater.* **2023**
- (2) Kavita; **Singh, A. K.**; Shukla, N.; Kumar, B.; Verma, D. K.; Maurya, J. L.; Singh, S.; Rastogi, R. B. Improvement of Tribo-Active Behavior of g- C_3N_4 Nanosheets Using m- LaVO_4 Nanoparticles. *Colloids Surf. Physicochem. Eng. Asp.* **2023**, *663*, 131031.
- (3) **Singh, A. K.**; Shukla, N; Kavita, Verma, D. K.; Kumar, B.; Mandal, K. D.; Rastogi, R. B. Reinforcement of nanoporous lanthanum-doped zinc borate by vanadium selenide nanosheets for improved tribological activity, *RSC Advances*, **2022**, *12*(29), 18685-18696
- (4) Kavita, **Singh, A. K.**; Shukla, N.; Verma, D. K.; Kumar, B.; Singh S.; Rastogi, R. B. Polyaniline intercalated vanadium pentoxide nanosheets for the improvement of lubricity of base oil. *Colloids Surf. A Physicochem. Eng. Asp.* **2022**, *642*, 128644.
- (5) **Singh, A. K.**; Shukla, N; Verma, D. K.; Kavita, Kumar, B.; Rastogi, R. B. Enhancement of Triboactivity of Nanolamellar Graphitic- C_3N_4 by N-Doped ZnO Nanorods *ACS Ind. Eng. Chem. Res.* **2021**, *60*(2), 864-874.
- (6) **Singh, A. K.**; Yadav, A.; Indra, A.; Rastogi, R. B. Superior performance of ultrathin metal organic framework nanosheets for antiwear and antifriction testing. *Colloids Surf. A Physicochem. Eng. Asp.* **2021**, *613*, 126100.

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- (7) Shukla, N.; Verma, D. K.; **Singh, A. K.**; Kumar, B.; Kavita; Rastogi, R. B. Ternary Composite of Methionine-Functionalized Graphene Oxide, Lanthanum-Doped Yttria Nanoparticles, and Molybdenum Disulfide Nanosheets for Thin-Film Lubrication. *ACS Appl. Nano Mater.* **2020**, *3* (8), 8012–8026.
- (8) Kumar, B.; Verma, D. K.; Shukla, N.; **Singh, A. K.**; Kavita, Rastogi, R. B. Ionic liquid stabilized Ag@C composite for improvement of triboactivity. *J. Mol. Liq.* **2020**, *307* (113012).
- (9) Verma, D. K.; Kuntail, J.; Kumar, B.; **Singh, A. K.**; Shukla, N.; Kavita; Sinha, I.; Rastogi, R. B. Amino Borate-Functionalized Reduced Graphene Oxide Further Functionalized with Copper Phthalocyanine Nanotubes for Reducing Friction and Wear. *ACS Appl. Nano Mater.* **2020**, *3* (6), 5530–5541.
- (10) Verma, D. K.; Shukla, N.; Kumar, B.; **Singh, A. K.**; Shahu, K.; Yadav, M.; Rhee, K. Y.; Rastogi, R. B. Synergistic Tribo-Activity of Nanohybrids of Zirconia/Cerium-Doped Zirconia Nanoparticles with Nano Lamellar Reduced Graphene Oxide and Molybdenum Disulfide. *Nanomaterials* **2020**, *10* (4), 707.
- (11) Kavita, Verma, P.; Verma, D. K.; Kumar, B.; **Singh, A. K.**; Shukla, N.; Srivastava, V.; Rastogi, R. B. Tetrahydropyrazolopyridines as antifriction and antiwear agents: experimental and DFT calculations, *RSC Advances* **2020**; *10*, 10188-10196.
- (12) Kavita, Kuntail, J.; Verma, D. K.; Kumar, B.; **Singh, A. K.**; Shukla, N.; Sinha, I.; Rastogi, R. B. “Theoretical and experimental studies of pyranopyrazoles

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and their tribological compatibility with a borate ester. *Colloids Surf. A Physicochem. Eng. Asp.* **2020**, 606, 125497.

- (13) Kumar, B.; Verma, D. K.; **Singh, A. K.**; Kavita, Shukla, N.; Rastogi, R. B. Nanohybrid Cu@C: synthesis, characterization and application in enhancement of lubricity, *Compos. Interfaces.* **2019**, 6440.

Conferences

- (1) **Singh, A. K.**; Shukla, N.; Mandal, K. D.; Rastogi, R. B. Tribological Behaviour of Bismuth Vanadate (BiVO₄) Nanorod. 11th International Conference on Industrial Tribology (ICIT), Indian Institute of Technology Delhi, 12-14 December **2022**. **Oral**

- (2) **Singh, A. K.**; Shukla, N.; Verma, D. K.; Kumar, B.; Kavita; Rastogi, R. B. "Tribological behaviour of zinc oxide nanoparticles, g- C₃N₄ and the nanocomposite ZnO@g-C₃N₄". **IndiaTrib-2019**, IISc. Bangalore, India, December. 1-4, **2019**. **Oral**

- (3) **Singh, A. K.**; Rastogi, R. B. Tribological behaviour of zinc borate nanoparticles in base oil. National Symposium on contemporary Trends and Future Prospects of Functional Materials (**CTFM-2019**), BHU, Varanasi, 29-30 November **2019**.

Poster

- (4) Shukla, N.; Verma, D. K.; **Singh, A. K.**; Kumar, B.; Kavita; Rastogi, R. B. "Copper doped titania nanoparticles of varying size in boundary lubrication" **IndiaTrib-2019**, IISc. Bangalore, India, December. 1-4, **2019**. **Oral**

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- (5) Verma, D. K.; Shukla, N.; Kumar, B.; **Singh, A. K.**; Kavita; Rastogi R.B. “Binary nanohybrids of ZrO₂/ Ce-ZrO₂ nanoparticles with rGO as energy efficient lubricant additives”, International Conference on Ultrasonics and Material Sciences for Advanced Technology (**ICUMSAT-2019**) Jaunpur, VBSPU, Jaunpur, November 16-18, **2019**. **Oral**

Workshop/Training Programme

- (1) 14TH SUMMER SCHOOL IN TRIBOLOGY, Indian Oil Institute of Petroleum Management (IIPM), Gurugram, **14-18 JUNE 2022**.
- (2) One Week Training Programme on Advanced Instrumental Techniques in Chemistry and Material Sciences (**AITCMS22**), Department Of Chemistry Birla Institute Of Technology Mesra Ranchi 835215, 9-15 May **2022**.
- (3) AICTE SPONSORED SHORT TERM TRAINING PROGRAMME ON RECENT ADVANCES IN TRIBOLOGY AND SURFACE ENGINEERING, Introduction To Tribology and Surface Engineering, Department of Mechanical Engineering Saintgits College of engineering, Kottayam Kerla, 17-22 AUGUST **2020**.
- (4) AICTE SPONSORED SHORT TERM TRAINING PROGRAMME ON RECENT ADVANCES IN TRIBOLOGY AND SURFACE ENGINEERING, Tribology Of Machine Components And Applied Tribology, Department of Mechanical Engineering Saintgits College of engineering, Kottayam Kerla, 14-19 September **2020**.

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- (5) AICTE SPONSORED SHORT TERM TRAINING PROGRAMME ON RECENT ADVANCES IN TRIBOLOGY AND SURFACE ENGINEERING, Nano-Tribology, Bio-Tribology, Space-Tribology, Biomemitics And Tribology In Industry, Department of Mechanical Engineering Saintgits College of engineering, Kottayam Kerla, 12- 17 October **2020**.
- (6) AICTE SPONSORED SHORT TERM TRAINING PROGRAMME ON RECENT ADVANCES IN TRIBOLOGY AND SURFACE ENGINEERING, Surface Characterization And Treatments In Tribology, Department of Mechanical Engineering Saintgits College of engineering, Kottayam Kerla, 23- 28 November **2020**.
- (7) **XIII J-NOST** CONFRENCE FOR RESEARCH SCHOLAR, Department of Chemistry, Institute of Science, Banaras Hindu University Varanasi 221005, 9- 12 November **2017**.