

# List of Publications

### Research Publications

1. **Kavita**, Pratibha Verma, Dinesh K. Verma, Bharat Kumar, Alok K. Singh, Nivedita Shukla, Vandana Srivastava, Rashmi B. Rastogi, “Tetrahydropyrazolopyridines as antifriction and antiwear agents: experimental and DFT calculations”. RSC Advances **2020**; 10, 10188- 10196.
2. **Kavita**, Jyoti Kuntail, Dinesh K. Verma, Bharat Kumar, Alok K. Singh, Nivedita Shukla, Indrajit Sinha and Rashmi B. Rastogi, “Theoretical and experimental studies of pyranopyrazoles and their tribological compatibility with a borate ester”. Colloids Surfaces A Physicochem. Eng. Asp. 606 (**2020**) 125497.
3. **Kavita**, A.K. Singh, N. Shukla, D.K. Verma, B. Kumar, Sundaram Singh, R.B. Rastogi, “ Polyaniline intercalated vanadium pentoxide nanosheets for the improvement of lubricity of base oil”. Colloids Surfaces A Physicochem. Eng. Asp. 642 (**2022**) 128644.
4. **Kavita**, A.K. Singh, N. Shukla, B. Kumar, D.K. Verma, Sundaram Singh, R.B. Rastogi, “ Improvement of tribo-active behavior of g-C<sub>3</sub>N<sub>4</sub> nanosheets using m-LaVO<sub>4</sub> nanoparticles”. (Communicated)
5. Bharat Kumar, Dinesh K. Verma, Alok K. Singh, **Kavita**, Nivedita Shukla, Rashmi B. Rastogi, “ Nanohybrid Cu@C: synthesis, characterization and application in enhancement of lubricity”. Compos. Interfaces. 6440 (**2019**).
6. Dinesh K. Verma, Bharat Kumar, **Kavita** and Rashmi B. Rastogi, “Zinc oxide and

Magnesium -doped zinc oxide-decorated nanocomposites of reduced graphene oxide as friction and wear modifiers”. ACS Appl Mater Interfaces. **2018**; 11:2418–2430.

7. Bharat Kumar, Dinesh K. Verma, **Kavita** and Rashmi B. Rastogi, “Tribological activity of ionic liquid stabilized calcium doped ceria nanoparticle”. J. Eng. Tribol. **2020**.
8. Bharat Kumar, Dinesh K. Verma, Nivedita Shukla, Alok K. Singh, **Kavita** and Rashmi B. Rastogi, “Ionic liquid stabilized Ag@C composite for improvement of triboactivity”. J. Mol. Liq. 307 (**2020**) 113012.
9. Dinesh K. Verma, Jyoti Kuntail, Bharat Kumar, Nivedita Shukla, Alok K. Singh, **Kavita**, Indrajit Sinha and Rashmi B. Rastogi, “Amino Borate-Functionalized Reduced Graphene Oxide Further Functionalized with Copper Phthalocyanine Nanotubes for Reducing Friction and Wear”. ACS Appl. Nano Mater. **2020**, 3, 5530–5541.
10. Dinesh K. Verma, Nivedita Shukla, Bharat Kumar, Alok K. Singh, **Kavita**, Mithilesh Yadav, Kyong Yop Rhee and Rashmi B. Rastogi, “Synergistic Tribo-activity of nanohybrid of Zirconia/Cerium-doped Zirconia nanoparticles with nanolameller reduced graphene oxide and Molybdenum disulfide” Nanomaterials **2020**, 307.
11. Nivedita Shukla, Dinesh K. Verma, Alok K. Singh, Bharat Kumar, **Kavita** and Rashmi B. Rastogi, “Ternary Composite of Methionine-Functionalized Graphene Oxide, Lanthanum Doped Ytria Nanoparticles, and Molybdenum Disulfide Nanosheets for Thin Film Lubrication”. ACS Appl. Nano Mater. **2020**, 3, 8, 8012–8026.

12. Alok K. Singh, Nivedita Shukla, Dinesh K. Verma, **Kavita**, Bharat Kumar, R.B. Rastogi, “Enhancement of Triboactivity of Nanolamellar Graphitic-C<sub>3</sub>N<sub>4</sub> by N-Doped ZnO Nanorods”. *Ind. Eng. Chem. Res.* 60 (2021) 864-874.
  
13. Alok K. Singh, Nivedita Shukla, **Kavita**, Dinesh K. Verma, Bharat Kumar, K. D. Mandal, R.B. Rastogi, “Reinforcement of nanoporous lanthanum - doped zinc borate by vanadium selenide nanosheets for improved tribological activity”. *RSC Advances* 2022; 12, 18685.

### Conferences

1. **Kavita** and R.B. Rastogi, Studies on antiwear and antifriction properties of chromenopyridine, National Symposium on Contemporary Trends and Future Prospects of Functional Materials (**CTFM-2019**), BHU, Varanasi, 29 - 30 November, 2019.
2. **Kavita**, Sundaram Singh and R.B. Rastogi, Synthesis, characterization and evaluation of tribological behavior of *p*-chloro derivative of pyranopyrazole, Advanced Materials for Better Tomorrow (**AMBT-2021**) Impacting Energy, Health and Environment , IIT-BHU,13-17 July, 2021.
3. Dinesh K. Verma, Nivedita Shukla, Bharat Kumar, Alok. K. Singh, **Kavita** and R.B. Rastogi, Binary nanohybrids of ZrO<sub>2</sub>/ Ce-ZrO<sub>2</sub> nanoparticles with rGO as energy efficient lubricant additives, International Conference on Ultrasonics and Material Sciences for Advanced Technology (**ICUMSAT-2019**) Jaunpur, VBS PU, Jaunpur, November 16-18, 2019.
4. Dinesh K. Verma, Nivedita Shukla, Bharat Kumar, Alok. K. Singh, **Kavita** and R.B. Rastogi, Vanadium doped zinc oxide nanoparticle as antiwear lubricant additive, International Conference National Conference on Advance Nanomaterials and their Applications (**ANA-2018**), MNNIT, Allahabad, India, December 21-23, 2018.

# REFERENCES

- 
- ❖ Abdel-Latef, S.A., Darwish, A.S., Rizk, S.A., Atya, S.K. and Helal, M.H.E. “Morphology control synthesis of iron-rich Sinai clay by novel O, N, S-heterocyclic moieties: Magnetic organoclays for various strategic uses in lubricating oilfield industry” *J. Mol. Liq.* 288 (2019) 111006.
  - ❖ Adams, J. H. “Conservation potential with borate gear lubricant” *Lubri. Eng.* 34 (1978) 2-14
  - ❖ Agarwal, C. V., Verma, V. K. and Singh, R. S. "The assessment of dithiocarbamates as extreme pressure lubricant additives" *Wear* 64 (1980) 33-38.
  - ❖ Agarwal, C. V., Verma, V. K., Singh, R. S. and Mammen, A. "Effect of Isodithiobiurets and Related Compounds as Additives in Extreme Pressure Lubrication of Steel Bearing Balls" *Indian J. Technol.* 19 (1981) 507-510.
  - ❖ Akbulut, M., Belman, N., Golan, Y. and Israelachvili, J. “Frictional Properties of Confined Nanorods” *Adv. Mater.* 18 (2006) 2589–2592.
  - ❖ Alazemi, A. A., Etacheri, V., Dysart, A. D., Stacke, L. E., Pol, V. G. and Sadeghi, F. “Ultrasmooth Submicrometer Carbon Spheres as Lubricant Additives for Friction and Wear Reduction” *ACS Appl. Mater. Interfaces* 7 (2015) 5514–5521.
  - ❖ Alemayehu, T. and Abiebie, D. "Preparation of Poly Aniline by Chemical Oxidative Method and Its Characterization" *OALib.* 01 (2014) 1–4.
  - ❖ Ali, M. K. A., Hou, X. and Abdelkareem, M. A. “Anti-wear properties evaluation of frictional sliding interfaces in automobile engines lubricated by copper/graphene nanolubricants” *Friction* 8 (2019) 905-916.
  - ❖ Ali, M.K.A., Xianjun, H., Abdelkareem, M.A., Gulzar, M. and Elsheikh, A. H. “Novel approach of the graphene nanolubricant for energy saving via anti-friction/wear in automobile engines” *Tribol. Int.* 124 (2018) 209-229.

- 
- ❖ Bansal, V., Dohhen, K. C., Sarin, R., Sarpal, A. S. and Bhatnagar, A. K. "Sulphur-phosphorus components in gear oils: part 1, oxidation stability studies by  $^{31}\text{P}$ -NMR spectroscopic techniques" *Tribol. Int.* 35 (2002) 819-828.
  - ❖ Battez, A. H., González, R., Viesca, J. L., Fernández, J. E., Fernández, J. D., Machado, A., Chou, R. and Riba, J. "CuO, ZrO<sub>2</sub> and ZnO Nanoparticles as Antiwear Additive in Oil Lubricants" *Wear* 265 (2008) 422-428.
  - ❖ Bejbouji, H., Vignau, L., Miane, J. L., Dang, M. T., Oualim, E. M., Harmouchi, M. and Mouhsen, A. "Polyaniline as a hole injection layer on organic photovoltaic cells" *Sol. Energy Mater. Sol. Cells.* 94 (2010) 176–181.
  - ❖ Bentiss, F., Traisnel, M., Gengembre, L., and Lagrenée, M. "A New Triazole Derivative as Inhibitor of the Acid Corrosion of Mild Steel: Electrochemical Studies, Weight Loss Determination, SEM and XPS" *Appl. Surf. Sci.* 152 (1999) 237–249.
  - ❖ Bermúdez, M. D., Jiménez, A. E., Sanes, J. and Carrión, F. J. "Ionic Liquids as Advanced Lubricant Fluids" *Molecules* 14 (2009) 2888–2908.
  - ❖ Bhadra, S., Singha, N. K. and Khastgir, D. "Electrochemical synthesis of polyaniline and its comparison with chemically synthesized polyaniline" *J. Appl. Polym. Sci.* 104 (2007) 1900-1904.
  - ❖ Bhushan, B. "Modern tribology handbook. 1. Principles of tribology" *CRC press.* (2001).
  - ❖ Bhushan, B. "Principle and applications of tribology" *John Wiley & Sons* (1999).
  - ❖ Bondarev, A.V., Fraile, A., Polcar, T. and Shtansky, D.V. "Mechanisms of friction and wear reduction by h-BN nanosheet and spherical W nanoparticle additives to base oil: Experimental study and molecular dynamics simulation" *Tribol. Int.* 151 (2020)106493.



- ❖ Bonu, V., N. Kumar, A. Das, S. Dash and A. K. Tyagi “Enhanced Lubricity of SnO<sub>2</sub> Nanoparticles Dispersed Polyolester Nanofluid” *Ind. Eng. Chem. Res.* 55 (2016) 2696-2703.
- ❖ Boukhalfa, S., Evanoff, K. and Yushin, G. "Atomic layer deposition of vanadium oxide on carbon nanotubes for high-power supercapacitor electrodes" *Energy Environ. Sci.* 5 (2012) 6872–6879.
- ❖ Cao,Z., Xia,Y., Chen,C., Zheng,K. and Zhang,Y. "Polyaniline as an additive towards improving tribological properties and anti-corrosion performance of ionic liquids-based greases" *Ind. Lubr. Tribol.* 72 (2020) 851–856.
- ❖ Che, Qinglun, Li, H., Zhang, L., Zhao, F., Li, G., Guo, Y., Zhang, J. and Zhang, G. “Role of Carbon Nanotubes on Growth of a Nanostructured Double-Deck Tribofilm Yielding Excellent Self-Lubrication Performance” *Carbon* 161(2020) 445–455.
- ❖ Chen, B., Jiu, W., Jianhua, F., Weiii, H., Xia, S. and Ying, Yu. “Tribological performances of fatty acyl amino acids used as green additives in lubricating oil” *China Pet. Process. Petrochem. Technol.* 12 (2010) 49.
- ❖ Chen, B., Zhang, M., Zhang, K., Dong, Z, Li, J. and Zhao, G. “Mono-Dispersed Ag Nanoparticles Decorated Graphitic Carbon Nitride: An Excellent Lubricating Additive as PPESK Composite Film” *Friction* 10 (2022) 717–731.
- ❖ Chen, C. S., Chen, X. H., Xu, L. S., Yang, Z. and Li, W. H. "Modification of multiwalled carbon nanotubes with fatty acid and their tribological properties as lubricant additive" *Carbon* 43 (2005)1660-1666.
- ❖ Chen, L. and Zhu, D. “Preparation and tribological properties of unmodified and oleic acid-modified CuS nanorods as lubricating oil additives” *Ceram. Int.* 43 (2017) 4246–4251.

- 
- ❖ Chen, S. and Liu, W. “Oleic Acid Capped PbS Nanoparticles: Synthesis, Characterization and Tribological Properties” *Mater. Chem. Phys.* 98 (2006) 183–189.
  - ❖ Chen, Y., Renner, P. and Liang, H. “Dispersion of nanoparticles in lubricating oil: A critical review” *Lubricants* 7 (2019) 7-27.
  - ❖ Chen, D., Lei, S. and Chen, Y. "A single polyaniline nanofiber field effect transistor and its gas sensing mechanisms" *Sensors* 11 (2011) 6509–6516.
  - ❖ Chen, S., Li, K., Hui, K. S. and Zhang, J. "Regulation of Lamellar Structure of Vanadium Oxide via Polyaniline Intercalation for High-Performance Aqueous Zinc-Ion Battery" *Adv. Funct. Mater.* 30 (2020) 2003890.
  - ❖ Chen, Y., Yang, G., Zhang, Z., Yang, X., Hou, W. and Zhu, J. J. "Polyaniline-intercalated layered vanadium oxide nanocomposites-One-pot hydrothermal synthesis and application in lithium battery" *Nanoscale* 2 (2010) 2131–2138.
  - ❖ Choi, M. R., Woo, S. H., Han, T. H., Lim, K. G., Min, S. Y., Yun, W. M., Kwon, O. K., Park, C. E., Kim, K. D., Shin, H. K., Kim, M. S., Noh, T., Park, J. H., Shin, K.H., Jang, J. and Lee, T.W. "Polyaniline-based conducting polymer compositions with a high work function for hole-injection layers in organic light-emitting diodes: Formation of ohmic contacts" *Chem Sus Chem.* 4 (2011) 363–368.
  - ❖ Chou, R., Battez, A. H., Cabello, J. J., Viesca, J. L., Osorio, A. and Sagastume, A. “Tribological Behavior of Polyalphaolefin with the Addition of Nickel Nanoparticles” *Tribol. Int.* 43 (2010) 2327-2332.
  - ❖ Choudhary, R. B. and Pande, P. P. “Lubrication Potential of Boron Compounds: an overview” *Lubr. Sci.* 14 (2002) 211-222.
  - ❖ Chouhan, A., Mungse, H. P., Sharma, O. P., Singh, R. K. and Khatri, O. P. “Chemically functionalized graphene for lubricant applications: Microscopic and

- spectroscopic studies of contact interfaces to probe the role of graphene for enhanced triboperformance” *J. Colloid Interface Sci.* 513 (2018) 666-676.
- ❖ Cong, H.P., Ren, X.C., Wang, P. and Yu, S. H. "Flexible graphene-polyaniline composite paper for high-performance supercapacitor" *Energy Environ. Sci.* 6 (2013) 1185–1191.
  - ❖ Croudace, M. C. "Lubrication antiwear additives" *U.S. Patent No.* 4,990,273 (1991).
  - ❖ Dabiri, M., Salehi, P., Koohshari, M., Hajizadeh, Z. and MaGee, D. I. “An efficient synthesis of tetrahydropyrazolopyridine derivatives by a one-pot tandem multi-component reaction in a green media” *Arkivoc* (2014) 204–214.
  - ❖ Dai, W., Lee, K., Sinyukov, A.M. and Liang, H. "Effects of Vanadium Oxide Nanoparticles on Friction and Wear Reduction" *J. Tribol.* 139 (2017) 061607.
  - ❖ Dapprich, S., Daniels, A. D., Strain, M. C., Farkas, O., D. K., A. D. Rabuck, Raghavachari, K., Foresman, J. B., Qrtiz, J. V., Cui, Q., Baboul, A. G. Gaussian 03, revision C. 01; Gaussian” *Inc: Wallingford CT* (2004).
  - ❖ Davey, W. and Edwards, E. D. "The extreme-pressure lubricating properties of some sulphides and disulphides, in mineral oil, as assessed by the Four-Ball machine” *Wear* 1 (1958) 291-304.
  - ❖ Demon, S. Z. N., Kamisan, A.I., Abdullah, N., Noor, Mohd, S. A., Khim, O. K., Kasim, N. A.M., Yahya, M. Z. A., Manaf, N. A. A., Azmi, A. F. M. and Halim, N. A. “Graphene-Based Materials in Gas Sensor Applications: A Review” *Sens. Mater.* 32 (2020) 759.
  - ❖ Dewar, M. J. S., and Thiel “W.Ground States of Molecules. 38. The MNDO Method. Approximations and Parameters” *J. Am. Chem. Soc.* 99 (1977) 4899.

- 
- ❖ Dimitrov, V., Dimitriev, Y. and Montenero, A. "IR spectra and structure of V<sub>2</sub>O<sub>5</sub>-GeO<sub>2</sub>-Bi<sub>2</sub>O<sub>3</sub> glasses" *J. Non. Cryst. Solids* 180 (1994) 51–57.
  - ❖ Dong, S.R., Tu, J.P. and Zhang, X. B. "An Investigation of the Sliding Wear Behavior of Cu-Matrix Composite Reinforced by Carbon Nanotubes" *Mater. Sci. Eng. A* 313 (2001) 83–87.
  - ❖ Dorinson, A., and Ludema, K. C. "Mechanics and chemistry in lubrication" *Elsevier* 9 (1985).
  - ❖ Elkholy, A. E., Rizk, S. A. and Rashad, A. M. "Enhancing lubricating oil properties using novel quinazolinone derivatives: DFT study and molecular dynamics simulation" *J. Mol. Struct.* 1175 (2019) 788–796.
  - ❖ Eswaraiah, V., Sankaranarayanan, V. and Ramaprabhu, S. "Graphene-Based Engine Oil Nanofluids for Tribological Applications" *ACS Appl.Mater. Interfaces* 3 (2011) 4221-4227.
  - ❖ Extreme Pressure Additive of Surface Coated LaF<sub>3</sub> Nanoparticles in Liquid Paraffin" *Wear* 249 (2001) 333–337.
  - ❖ Fan, X., Gan, C., Feng, P., Ma, X., Yue, Z., Li, H., Li, W., and Zhu, M. "Controllable Preparation of Fluorinated Boron Nitride Nanosheets for Excellent Tribological Behaviors" *Chem. Eng. J.* 431 (2022) 133482.
  - ❖ Fan, X., Wang, L. and Li, W. "In Situ Fabrication of Low-Friction Sandwich Sheets through Functionalized Graphene Cross Linked by Ionic Liquids" *Tribol. Lett.* 58 (2015) 12.
  - ❖ Fan, C., Li, H., Jin, L., Zhang, M., Xiao, L., Li, M. and Ao, Y. "Improving tribological properties of phenolic resin/carbon fiber composites using m-Si<sub>3</sub>N<sub>4</sub>@PANI core-shell particles" *J. Appl. Polym. Sci.* 136 (2019) 47785.

- ❖ Fateh, N., Fontalvo, G. A. and Mitterer, C. "Tribological properties of reactive magnetron sputtered  $V_2O_5$  and VN– $V_2O_5$  coatings" *Tribol. Lett.* 30 (2008) 21-26.
- ❖ Fei, J., Luo, D., Huang, J., Zhang, C., Duan, X. and Zhang, L. "Growth of aligned ZnO nanorods on carbon fabric and its composite for superior mechanical and tribological performance" *Surf. Coat. Technol.* 344 (2018) 433–440.
- ❖ Feng, C., Tang, L., Deng, Y., Wang, J., Luo, J., Liu, Y., Ouyang, X., Yang, H., Yu, J. and Wang, J. "Synthesis of Leaf-Vein-Like g- $C_3N_4$  with Tunable Band Structures and Charge Transfer Properties for Selective Photocatalytic  $H_2O_2$  Evolution" *Adv Funct Mater.* 30 (2020) 2001922.
- ❖ Feng, I. M., Perilstein, W. L., Adams, M. R. "Solid film deposition and non-sacrificial boundary lubrication" *ASLE Trans.* 6 (1963) 60-66.
- ❖ Feng, Y., Yang, T., Zhang, W., Jiang, C. and Jiao, K. "Enhanced sensitivity for deoxyribonucleic acid electrochemical impedance sensor: Gold nanoparticle/polyaniline nanotube membranes" *Anal. Chim. Acta.* 616 (2008) 144–151.
- ❖ Fengzhen, L., Xin, S., Yibin, Y., Zhuwei, Z. S., Xuehua, L. and Xianhua, M. "Shape controlled synthesis and tribological properties of  $CeVO_4$  nanoparticles as lubricating additive" *J Rare Earths* 29 (2011) 688–691.
- ❖ Ferrari, A. C., Bonaccorso, F., Fal'Ko, V., Novoselov, K. S., Roche, S., Bøggild, P. and Garrido, J. A. "Science and Technology Roadmap for Graphene, Related Two-Dimensional Crystals, and Hybrid Systems" *Nanoscale* 7 (2015) 4598-4810.
- ❖ Gaddam, S. K., Pothu, R. and Boddula, R. "Graphitic carbon nitride (g- $C_3N_4$ ) reinforced polymer nanocomposite systems-A review" *Polym Compos.* 41 (2020) 430–442.

- 
- ❖ Ganganboina, A. B., Chowdhury, A. D. and Doong, R. A. "N-Doped Graphene Quantum Dots-Decorated V<sub>2</sub>O<sub>5</sub> Nanosheet for Fluorescence Turn Off-On Detection of Cysteine" *ACS Appl. Mater. Interfaces* 10 (2018) 614–624.
  - ❖ Gao, F., Kotvis, P.V. and Tysoe, W. T. "The surface and tribological chemistry of chlorine-and sulfur-containing lubricant additives" *Tribol. Int.* 37 (2004) 87-92.
  - ❖ Gao, M., Feng, J., Zhang, Z., Gu, M., Wang, J., Zeng, W., Lv, Y., Ren, Y., Wei, T. and Fan, Z. "Wrinkled Ultrathin Graphitic C<sub>3</sub>N<sub>4</sub> Nanosheets for Photocatalytic Degradation of Organic Wastewater" *ACS Appl Nano Mater.* 1 (2018) 6733–6741.
  - ❖ Gao, J., Sansiñena, J. M. and Wang, H. L. "Tunable polyaniline chemical actuators" *Chem. Mater.* 15 (2003) 2411–2418.
  - ❖ Geim, A. K. "Graphene: Status and Prospects" *Science* 324 (2009) 1530-1534.
  - ❖ Georgakilas, V., Otyepka, M., Bourlinos, A.B., Chandra, V., Kim, N., Kemp, K.C., Hobza, P., Zboril, R. and Kim, K.S. "Functionalization of graphene: covalent and noncovalent approaches, derivatives and applications" *Chem. Rev.* 112 (2012) 6156- 6214.
  - ❖ Ghaemmaghami, M. and Mohammadi, R. "Carbon nitride as a new way to facilitate the next generation of carbon-based supercapacitors" *Sustain Energy Fuels* 3 (2019) 2176– 2204.
  - ❖ Ghanbari, K., Mousavi, M. F. and Shamsipur, M. "Preparation of polyaniline nanofibers and their use as a cathode of aqueous rechargeable batteries" *Electrochim. Acta* 52 (2006) 1514–1522.
  - ❖ Ghoreishi, K. B., Ghasemi, M., Rahimnejad, M., Yarmo, M. A., Daud, W. R. W., Asim, N. and Ismail, M. "Development and application of vanadium oxide/polyaniline composite as a novel cathode catalyst in microbial fuel cell" *Int. J. Energy Res.* 38 (2014) 70-77.

- ❖ Gnanasekar, S. and Nirmala Grace, A. "V<sub>2</sub>O<sub>5</sub> Nanosheets as an Efficient, Low-cost Pt-free Alternate Counter Electrode for Dye-Sensitized Solar Cells" *ChemNanoMat*. 7 (2021) 1–8.
- ❖ Golczak, S., Kancierzewska, A., Fahlman, M., Langer, K. and Langer, J.J. "Comparative XPS surface study of polyaniline thin films" *Solid State Ionics* 179 (2008) 2234–2239.
- ❖ Gong, D., Zhang, P. Y. and Xue Q. "Studies on relationship between structure of chlorine-containing compounds and their wear and extreme pressure behavior" *LubEn*. 46 (1990) 566-72.
- ❖ Gu, H., Zhang, H., Gao, C., Lian, C., Gu, J. and Guo, Z. "New Functions of Polyaniline" *ES Mater. Manuf.* 1 (2018) 3–12.
- ❖ Guo, Z., Zhang, Y., Wang, J., Gao, C., Zhang, S., Zhang, P. and Zhang, Z. "Interactions of Cu Nanoparticles with Conventional Lubricant Additives on Tribological Performance and Some Physicochemical Properties of an Ester Base Oil" *Tribol. Int.* 141 (2020) 105941.
- ❖ Gusain, R. and Khatri, O. P. "Ultrasound assisted shape regulation of CuO nanorods in ionic liquids and their use as energy efficient lubricant additives" *J. Mater. Chem. A* 1 (2013) 5612–5619.
- ❖ Gusain, R., Mungse, H. P., Kumar, N., Ravindran, T. R., Pandian, R., Sugimura, H. and Khatri, O. P. "Covalently Attached Graphene-Ionic Liquid Hybrid Nanomaterials: Synthesis, Characterization and Tribological Application" *J. Mater. Chem. A* 4 (2016) 926-937.
- ❖ Hafeez, M., Faheem, M., Abdin, Z. Ul., Ahmad, K., Fazil, S. and Khan, B.A. "Synthesis and characterization of polyaniline-based conducting polymer and its anti-corrosion application" *Dig. J. Nanomater. Biostructures* 12 (2017) 707–717.

- 
- ❖ Hallett, J. P. and Welton, T. "Room-Temperature Ionic Liquids: Solvents for Synthesis and Catalysis. 2." *Chemical Reviews* 111 (2011) 3508–76.
  - ❖ Han, Y. and Furukawa, Y. "Conducting polyaniline and biofuel cell" *Int. J. Green Energy* 3 (2006) 17–23.
  - ❖ He, Z., Rao, W., Ren, T., Liu, W. and Xue, Q. "The Tribochemical Study of some N-containing heterocyclic compounds as lubricating oil additives" *Tribol. Lett.* 13 (2002) 87-93.
  - ❖ He, Y., Cai, J., Zhang, L., Wang, X., Lin, H., Teng, B., Zhao, L., Weng, W., Wan, H. and Fan, M. "Comparing Two New Composite Photocatalysts, t-LaVO<sub>4</sub>/g-C<sub>3</sub>N<sub>4</sub> and m- LaVO<sub>4</sub>/g-C<sub>3</sub>N<sub>4</sub>, for Their Structures and Performances" *Ind. Eng. Chem. Res.* 53 (2014) 5905-5915
  - ❖ He, Z., Xiong, L., Xie, F., Shen, M., Han, S., Hu, J. and Xu, W. "Tribological and Antioxidation Properties Study of Two N-Containing Borate Ester Derivatives as Additive in Rapeseed Oil" *PLoS One* 13 (2018) 1–21.
  - ❖ Heuberger, R., Rossi, A. and Spencer, N. D. "Reactivity of alkylated phosphorothionates with steel: a tribological and surface-analytical study" *Lubr. Sci.* 20 (2008) 79-102.
  - ❖ Hsu, S. M. and Gates, R.S. "Boundary lubricating films: formation and lubrication mechanism" *Tribol. Int.* 38 (2005) 305-312.
  - ❖ Hsu, S.M. "Fundamental mechanisms of friction and lubrication of materials" *Langmuir* 12 (1996) 4482-4485.
  - ❖ Hsu, S.M., Zhang, J., Yin, Z., The nature and origin of tribochemistry, *Tribol. Lett.* 13 (2002) 131-139.



- ❖ Hu, Z.S., Yie, Y., Wang, L. G., Chen, G. X. and Dong, J. X. “Synthesis and tribological properties of ferrous octoxyborate as antiwear and friction-reducing additives of lubricating oil” *Tribol. Lett.* 8 (2000) 45-50.
- ❖ Huang, W., Du, C., Li, Z., Liu, M. and Liu, W. “Tribological Characteristics of magnesium alloy using N-containing compounds as lubricating additives during sliding” *Wear* 260 (2006) 140-148.
- ❖ Huang, W., Hou, B. Liu, M. and Li. Z. “Improvement in Tribological performances of Magnesium Alloy Using Amide Compounds as Lubricating Additives during Sliding” *Tribol. Lett.* 18 (2005) 445–451.
- ❖ Huang, W., Tan, Y., Chen, B, Dong, J. and Wang, X. “The Binding of Antiwear Additives to Iron Surfaces: Quantum Chemical Calculations and Tribological Tests” *Tribol. Int.* 36 (2003) 163–168.
- ❖ Huang, Y., Ibrahim, A.M.M., Shi, X., Radwan, A.R., Zhai, W., Yang, K. and Xue, B. "Tribological Characterization of NiAl Self-Lubricating Composites Containing V<sub>2</sub>O<sub>5</sub> Nanowires" *J. Mater. Eng. Perform.* 25 (2016) 4941–4951.
- ❖ Hutchings, I. M. “Tribology, friction and wear of engineering materials” *Butterworth-Heinemann Ltd*, London (1992).
- ❖ Ibrahim, A.M.M., Shi, X., Radwan, A.R., Mohamed, A.F. Anwar and Ezzat, M.F. "Enhancing the tribological properties of NiAl based nano-composites for aerospace bearing applications" *Mater. Res. Express.* 6 (2019) 085067.
- ❖ Inamuddin and Kashmery, H.A. "Ternary graphene@polyaniline-TiO<sub>2</sub> composite for glucose biofuel cell anode application" *Int. J. Hydrogen Energy* 44 (2019) 22173–22180.

- ❖ Iqbal, N. "Ultrasonically anchored MoO<sub>3</sub>-g-C<sub>3</sub>N<sub>4</sub> photocatalyst for enhanced solar driven hydrogen generation and environmental remediation" *J. Photochem. Photobiol. A* 427 (2022) 113813.
- ❖ Islam, S., Lakshmi, G. B. V. S. and Siddiqui, A. M. "Synthesis, electrical conductivity, and dielectric behavior of polyaniline/V<sub>2</sub>O<sub>5</sub> Composites" *Int. J. Polym. Sci.* 2013 (2013).
- ❖ Jaffar, S. S., Soud, W. A. and Baqer, I. A. "A Comparative Study between Two Lubrication Nano - Additives (Bi<sub>2</sub>O<sub>3</sub> & TiO<sub>2</sub>) Based on Vibration Response analysis" *Eng. Technol. J.* 41 (2022) 60-68.
- ❖ Jaiswal, V., Gupta, S. R., Rastogi, R. B., Kumar, R. and Singh, V. P. "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.
- ❖ Jaiswal, V., Kalyani, Rastogi, R.B., and Kumar, R. "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.
- ❖ Jaiswal, V., Rastogi, R. B., Kumar, R., Singh, L. and Mandal, K. D. "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) 375-386.
- ❖ Jaiswal, V., Kalyani, Umrao, S., Rastogi, R.B., Kumar, R. and Srivastava, A. "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.
- ❖ Javed, M. S., Lei, H., Wang, Z., Liu, B. tian, Cai, X. and Mai, W. "2D V<sub>2</sub>O<sub>5</sub> nanosheets as a binder-free high-energy cathode for ultrafast aqueous and flexible Zn-ion batteries" *Nano Energy* 70 (2020) 104573.
  - ❖ Jeyaraman, J., Shukla, A. and Sivakumar, S. "Targeted Stealth Polymer Capsules Encapsulating Ln<sup>3+</sup>-Doped LaVO<sub>4</sub> Nanoparticles for Bioimaging Applications" *ACS Biomater Sci Eng.* 2 (2016) 1330–1340.
  - ❖ Jiang, L.-L., Wang, Z.-K., Li, M., Zhang, C.-C., Ye, Q.-Q., Hu, K.-H., Lu, D.-Z., Fang, P.-F. and Liao, L.-S. "Passivated Perovskite Crystallization via g-C<sub>3</sub>N<sub>4</sub> for High-Performance Solar Cells" *Adv Funct Mater.* 28 (2018) 1705875.
  - ❖ Jiang, Z., Zhang, Y., Yang, G., Gao, C., Yu, L., Zhang, S., and Zhang, P. "Synthesis of Oil-Soluble WS<sub>2</sub> Nanosheets under Mild Condition and Study of Their Effect on Tribological Properties of Poly-Alpha Olefin under Evaluated Temperatures" *Tribol. Int.* 138 (2019) 68–78.
  - ❖ Jianhua, L., Rong, Y. and Songmei, L." Preparation and characterization of the TiO<sub>2</sub>-V<sub>2</sub>O<sub>5</sub> photocatalyst with visible-light activity" *Rare Met.* 25 (2006) 636–642.
  - ❖ Jimenez, A. E. and Bermudez, M. D. "Imidazolium ionic liquids as additives of the synthetic ester propylene glycol dioleate in aluminium–steel lubrication" *Wear* 265 (2008) 787–798.
  - ❖ Jiménez, P., Levillain, E., Alévêque, O., Guyomard, D., Lestriez, B. and Gaubicher, J. "Lithium N-Doped Polyaniline as a High-Performance Electroactive Material for Rechargeable Batteries" *Angew. Chemie - Int. Ed.* 56 (2017) 1553–1556.

- ❖ Jing, J., Chen, Z., Feng, C., Sun, M. and Hou, J. "Transforming g-C<sub>3</sub>N<sub>4</sub> from amphoteric to n-type semiconductor: The important role of p/n type on photoelectrochemical cathodic protection" *J Alloys Compd.* **851** (2021) 156820.
- ❖ Jing, L., Xu, Y., Liu, J., Zhou, M., Xu, H., Xie, M., Li, H. and Xie, J. "Direct Z-scheme red carbon nitride/rod-like lanthanum vanadate composites with enhanced photodegradation of antibiotic contaminants" *Appl. Catal. B.* **277** (2020) 119245.
- ❖ Joly-Pottuz, L., Vacher, B., Ohmae, N., Martin, J. M. and Epicier, T. "Anti-Wear and Friction Reducing Mechanisms of Carbon Nano-Onions as Lubricant Additives" *Tribol. Lett.* **30** (2008) 69–80.
- ❖ Jones, M. H., and Scott, D. (Eds.) "Industrial tribology: the practical aspects of friction, lubrication and wear" Elsevier **8** (1983).
- ❖ Kalyani, Rastogi, R. B. and Kumar, D. "Synthesis, Characterization and Tribological Evaluation of SDS-Stabilized Magnesium-Doped Zinc Oxide (Zn<sub>0.88</sub>Mg<sub>0.12</sub>O) Nanoparticles as Efficient Antiwear Lubricant Additives" *ACS Sustain. Chem. Eng.* **4** (2016) 3420–3428.
- ❖ Kang, X., Wang, B., Zhu, L. and Zhu, H. "Synthesis and Tribological Property Study of Oleic Acid-Modified Copper Sulfide Nanoparticles" *Wear* **265** (2008) 150-154.
- ❖ Karimi-Nazarabad, M., Goharshadi, E. K., Entezari, M. H. and Nancarrow, P. "Rheological properties of the nanofluids of tungsten oxide nanoparticles in ethylene glycol and glycerol" *Microfluidics and Nanofluidics* **19** (2015) 1191-1202.
- ❖ Karthik, K., Nikolova, M. P., Phuruangrat, A., Pushpa, S., Revathi V. and Subbulakshmi, M. "Ultrasound-assisted synthesis of V<sub>2</sub>O<sub>5</sub> nanoparticles for photocatalytic and antibacterial studies" *Mater. Res. Innov.* **24** (2019) 229–234.

- ❖ Kavita, Kuntail, J., Verma, D. K., Kumar, B., Singh, A. K., Shukla, N., Sinha, I. and Rastogi, R. B. “Theoretical and experimental studies of pyranopyrazoles and their tribological compatibility with a borate ester” *Colloids Surf A: Physicochem Eng Asp.* 606 (2020) 125497.
- ❖ Kavita, Singh, A. K., Shukla, N., Verma, D. K., Kumar, B., Singh, S. and Rastogi, R. B. “Polyaniline intercalated vanadium pentoxide nanosheets for the improvement of lubricity of base oil” *Colloids Surf A: Physicochem Eng Asp.* 642 (2022) 128644.
- ❖ Kavita, Verma, P., Verma, D. K., Kumar, B., Singh, A. K., Shukla, N., Srivastava, V. and Rastogi, R. B. “Tetrahydropyrazolopyridines as antifriction and antiwear agents: experimental and DFT calculations” *RSC Adv.* 10 (2020) 10188–10196.
- ❖ Kazemi, F., Naghib, S.M., Zare, Y. and Rhee, K. Y. "Biosensing Applications of Polyaniline (PANI)-Based Nanocomposites: A Review" *Polym. Rev.* 61 (2021) 553–597.
- ❖ Khalil, W., Mohamed, A., Bayoumi, M. and Osman, T.A. “Tribological properties of dispersed carbon nanotubes in lubricant” *Fuller. Nanotub. Car.* N. 24 (2016) 479- 485.
- ❖ Khare, V., Pham, M., Kumari, N., Yoon, H., Kim, C., Park, J. and Ahn, S. “Graphene-Ionic Liquid Based Hybrid Nanomaterials as Novel Lubricant for Low Friction and Wear” *ACS Appl. Mater. Interfaces* 5 (2013) 4063-4075.
- ❖ Kiyani, H., Samimi, H. A., Ghorbani, F. and Esmaili, S. “One-Pot, Four-Component Synthesis of Pyrano [2,3-c] Pyrazoles Catalyzed by Sodium Benzoate in Aqueous Medium” *Curr. Chem. Lett.* 2 (2013) 197–206.

- 
- ❖ Kong, J. Z., Zhai, H. F., Zhang, W., Wang, S. S., Zhao, X. R., Li, M., Li, H., Li, A. D. and Wu, D. “Visible Light-Driven Photocatalytic Performance of N-Doped ZnO/g-C<sub>3</sub>N<sub>4</sub> Nanocomposites” *Nanoscale Res Lett.* 12 (2017) 1-10.
  - ❖ Kotvis, P.V., Huezo, L. A., Tysoe, W. T. “Surface chemistry of methylene chloride on iron: a model for chlorinated hydrocarbon lubricant additives” *Langmuir* 9 (1993) 467-74.
  - ❖ Kou, L., Cao, L., Song, J., Huang, J., Wang, Y. and Kajiyoshi, K. "Cobalt-doped Vanadium Pentoxide Microflowers as Superior Cathode for Lithium-Ion Battery" *Jom.* 73 (2021) 808–814.
  - ❖ Krishna, P., V., Srikant, R. R. and Rao, D. N. “Solid Lubricants in Machining.” Proceedings of the Institution of Mechanical Engineers, Part J: *J. Eng. Tribol.* 225 (2011) 213–27.
  - ❖ Kuila, T.; Bose, S.; Mishra, A. K.; Khanra, P.; Kim, N. H.; Lee, J. H. "Chemical functionalization of graphene and its applications" *Prog. Mater. Sci.* 57 (2012) 1061-1105.
  - ❖ Kuliyeu, A. B., Dzhavadov, M. M., Mamedov, O. A. and Gasanova, T. “N-Mono- and N, N-Dialkanoylacetylamides and Their Thio Analogues as Additives to Lubricants” *Petro. Chem. U.S.S.R.* 29 (1989b) 29–34.
  - ❖ Kuliyeu, A. B. Kurbanov, M. M., Aliyev, F. Y., and Kuliyeu F. A. “P-Chlorophenylthioacetamides as Lubricant Additives” *Petro. Chem. U.S.S.R.* 23 (1983) 79–82.
  - ❖ Kuliyeu, A. B., Akhadov, N. O., Abdullayeva, M.I. and Useinova, G. G. “Substituted Alkanoamidodisulphides as Additives to Lubricants.” *Petro. Chem. U.S.S.R.* 29 (1989a) 189–194.

- 
- ❖ Kumar, A., Thakre, G. D., Arya, P. K. and Jain, A. K. “2 D Structured Nanosheets of Octadecylamine Grafted Graphitic-Carbon Nitride (g-C<sub>3</sub>N<sub>4</sub>) as Lubricant Additives” *Macromol Symp.* 376 (2017) 1700009.
  - ❖ Kumar, B., Kuntail, J., Verma, D. K., Rastogi, R. B. and Sinha, I. “Mechanism of triboactivity of Schiff bases: Experimental and molecular dynamics simulations studies” *J. Mol. Liq.* 289 (2019) 111171-111179.
  - ❖ Kumar, B., Verma, D. K., Shukla, N., Singh, A. K. and Rastogi, R. B. “Ionic liquid stabilized Ag@C composite for improvement of triboactivity” *J. Mol. Liq.* 307 (2020a) 113012-113021.
  - ❖ Kumar, B., Verma, D. K., Singh, A. K., Kavita, Shukla, N., R. B. "Nanohybrid Cu@C: synthesis, characterization and application in enhancement of lubricity" *Compos. Interfaces* (2020b) 1-18.
  - ❖ Kumar, N., Bhaumik, S., Sen, A., Shukla, A. P. and Pathak, S. D. “One-pot synthesis and first-principles elasticity analysis of polymorphic MnO<sub>2</sub> nanorods for tribological assessment as friction modifiers” *RSC Adv.* 7 (2017) 34138–34148.
  - ❖ Kumar, R., Prakash, B. and Sethuramiah, A. “A systematic methodology to characterize the running-in and steady-state wear processes” *Wear* 252 (2002) 445-453.
  - ❖ Kumar, V., Bano, D., Singh, D. K., Mohan, S., Singh, V. K and Hasan, S. H. “Size-Dependent Synthesis of Gold Nanoparticles and Their Peroxidase-Like Activity for the Colorimetric Detection of Glutathione from Human Blood Serum” *ACS Sustain. Chem. Eng.* 6 (2018) 7662–7675.
  - ❖ Kumara, C., Leonard, D. N., Meyer, H. M., Luo, H., Armstrong, B. L. and Qu, J. “Palladium Nanoparticle-Enabled Ultrathick Tribofilm with Unique Composition” *ACS Appl. Mater. Interfaces* 10 (2018) 31804-31812.

- 
- ❖ Kumara, C., Luo, H., Leonard, D. N., Meyer, H. M. and Qu, J. “Organic Modified Silver Nanoparticles as Lubricant Additives,” *ACS Appl. Mater Interfaces* 9 (2017) 37227-37237.
  - ❖ Kumari, S., Sharma, O.P. and Khatri, O.P. “Alkylamine-functionalized hexagonal boron nitride nanoplatelets as a novel material for the reduction of friction and wear” *Phys. Chem. Chem. Phys.* 18 (2016) 22879-22888.
  - ❖ Kumari, S., Sharma, O.P., Gusain, R., Mungse, H.P., Kukrety, A., Kumar, N., Sugimura, H. and Khatri, O.P. “Alkyl-chain-grafted hexagonal boron nitride nanoplatelets as oil dispersible additives for friction and wear reduction” *ACS Appl. Mater. Interfaces* 7 (2015) 3708-3716.
  - ❖ Kundu, S., Satpati, B., Kar, T. and Pradhan, S.K. "Microstructure characterization of hydrothermally synthesized PANI/V<sub>2</sub>O<sub>5</sub>·nH<sub>2</sub>O heterojunction photocatalyst for visible light induced photodegradation of organic pollutants and non-absorbing colorless molecules" *J. Hazard. Mater.* 339 (2017) 161–173.
  - ❖ Kundu, S., Satpati, B., Mukherjee, M., Kar, T. and Pradhan, S.K. "Hydrothermal synthesis of polyaniline intercalated vanadium oxide xerogel hybrid nanocomposites: Effective control of morphology and structural characterization" *New J. Chem.* 41 (2017) 3634–3645.
  - ❖ Kuntail, J., Jain, Y. M., Shukla, M. and Sinha, I. “Adsorption Mechanism of Phenol, p - Chlorophenol, and p - Nitrophenol on Magnetite Surface: A Molecular Dynamics Study” *J. Mol. Liq.* 288 (2019) 111053–111058.
  - ❖ Kuratomi, T. and Nagano, K. “Lubricant base oil” *US Patent No.* 2009/0233824 A1 (2009).



- ❖ Larsson, E., Gargand, O. D., Heinrichs, J. and Jacobson, S. “Tribofilm Formation of a Boric Acid Fuel Additive – Material Characterization; Challenges and Insights.” *Tribol. Int.* 171 (2022) 107541.
- ❖ Lee, S. Y., Choi, G. R., Lim, H., Lee, K. M. and Lee, S.K. "Electronic transport characteristics of electrolyte-gated conducting polyaniline nano-wire field-effect transistors" *Appl. Phys. Lett.* 95 (2009).
- ❖ Li, D., Fang, X., Liu, H., Lu, H. and Zhang, Z. “Photoreduction of CO<sub>2</sub> to CH<sub>4</sub> on g-C<sub>3</sub>N<sub>4</sub>: The effect of concentrating light and pretreatment” *AIP Conf Proc.* 1971 (2018) 020006.
- ❖ Li, H., Wang, J., Gao, S, Chen, Q., Peng, L., Liu, K. and Wei, X. “Superlubricity between MoS<sub>2</sub> Monolayers” *Adv. Mater.* 29 (2017) 1701474-1701479.
- ❖ Li, J., Fan, B., Ren, T. and Zhao, Y. “Tribological study and mechanism of B-N and B-S- N triazine borate esters as lubricant additives in mineral oil" *Tribol.Int.* 88 (2015) 1-7.
- ❖ Li, J., Ren, T., Liu, H., Wang, D. and Liu, W. “The Tribological Study of a Tetrazole Derivative as Additive in Liquid Paraffin” *Wear* 246 (2000) 130–133.
- ❖ Li, P. F., Zhou, H. and Cheng, X.-H. “Nano/Micro Tribological Behaviors of a Self-Assembled Graphene Oxide Nanolayer on Ti/Titanium Alloy Substrates” *Appl. Surf. Sci.* 285 (2013) 937–44.
- ❖ Li, X., Zhang, K., Zhou, M., Yang, K., Zou, L., Li, W., Huang, J., Yu, C., Huang, W. and Niu, Y. “The hydrothermal in situ construction of AgVO<sub>3</sub>/LaVO<sub>4</sub> phase junctions for the efficient visible-light-driven disposal of pollutants and photoelectrocatalytic methanol oxidation” *Sustain. Energy Fuels* 4 (2020) 2569–2582.

- 
- ❖ Li, X., Hu, J., Yang, T., Yang, X., Qu, J. and Li, C. M. “Efficient photocatalytic H<sub>2</sub>-evolution coupled with valuable furfural-production on exquisite 2D/2D LaVO<sub>4</sub>/g-C<sub>3</sub>N<sub>4</sub> heterostructure” *Nano Energy* 92 (2022) 106714.
  - ❖ Li, Zheng, Meng, F., Ding, H., Li, Zheng, Meng, F., Ding, H., Wang, W. and Liu, Q. “Preparation and Tribological Properties of Carbon-Coated WS<sub>2</sub> Nanosheets” *Materials* 12 (2019) 2835.
  - ❖ Li, J., Li, Z., Ren, T., Zeng, X. and Van Der Heide, E. “Hydrolytic stability and tribological properties of N-containing heterocyclic borate esters as lubricant additives in rapeseed oil” *Tribol. Int.* 73 (2014) 101–107.
  - ❖ Lin, Z., Jia, X., Yang, J., Li, Y., Song, H., “Interfacial modification and tribological properties of carbon fiber grafted by TiO<sub>2</sub> nanorods reinforced novel depolymerized thermosetting composites” *Compos. Appl. Sci. Manuf.* 133 (2020) 105860–105870.
  - ❖ Liu, B., and Zhou, K. “Recent progress on graphene-analogous 2D nanomaterials: properties, modeling and applications” *Prog. Mater. Sci.* 100 (2019) 99-169.
  - ❖ Liu, L., Jiao, S., Peng, Y. and Zhou, W. “A Green Design for Lubrication: Multifunctional System Containing Fe<sub>3</sub>O<sub>4</sub>@MoS<sub>2</sub> Nanohybrid” *ACS Sustain. Chem. Eng.* 6 (2018) 7372- 7379.
  - ❖ Liu, L., Zhou, M., Jin, L., Li, L., Mo, Y., Su, G., Li, X., Zhu, H. and Tian, Y. “Recent advances in friction and lubrication of graphene and other 2 D materials: Mechanisms and applications” *Friction* 7 (2019) 199-216.
  - ❖ Liu, W., Li, W., Li, R., Lu, Z., Li, D., Zhang, G. and Wu, Z. “Green oil additive g-C<sub>3</sub>N<sub>4</sub>: a feasible strategy to enhance the tribological properties of DLC film” *Mater Res Express* 6 (2019) 115036.

- ❖ Liu, X., Gao, L., Qi, G., Zhang, J., Liu, B. and Chen, Y. “Enhanced visiblelight photocatalytic water-splitting activity over  $\text{LaVO}_4/\text{g-C}_3\text{N}_4$  with oxygen defects” *New J. Chem.* 45 (2021) 18615–18622.
- ❖ Liu, Y., Mateti, S., Li, C., Liu, X., Glushenkov, A. M., Liu, D., Li, L. H., Fabijanic, D. and Chen, Y. “Synthesis of composite nanosheets of graphene and boron nitride and their lubrication application in oil” *Adv. Eng. Mater.* 20 (2018) 1700488.
- ❖ Liu, L., Zhou, W., Chen, Y., Jiao, S. and Huang, P. "Pressure-assisted synthesis of a polyaniline-graphite oxide (PANI-GO) hybrid and its friction reducing behavior in liquid paraffin (LP)" *New J. Chem.* 42 (2018) 936–942.
- ❖ Liu, S., Zhu, H., Zhang, B., Li, G., Zhu, H., Ren, Y., Geng, H., Yang, Y., Liu, Q. and Li, C.C. "Tuning the Kinetics of Zinc-Ion Insertion/Extraction in  $\text{V}_2\text{O}_5$  by In Situ Polyaniline Intercalation Enables Improved Aqueous Zinc-Ion Storage Performance" *Adv. Mater.* 32 (2020) 2001113.
- ❖ Londero, E. and Schröder, E. "Role of van der Waals bonding in the layered oxide  $\text{V}_2\text{O}_5$ : First-principles density-functional calculations" *Phys. Rev. B.* 82 (2010) 054116.
- ❖ Lu, Z., Cao, Z., Hu, E., Hu, K. and Hu, X. “Preparation and tribological properties of  $\text{WS}_2$  and  $\text{WS}_2/\text{TiO}_2$  nanoparticles” *Tribol. Int.* 130 (2019) 308-316.
- ❖ Ludema, K.C. “Friction, wear, lubrication: A textbook in tribology” *CRC Press L.L.C.* (1996) 124-134.
- ❖ Lundgren, S., inventor, Akzo Nobel Chemicals International BV, assignee "Fatty amine salts as friction modifiers for lubricants” *United States patent US 9,487,728* (2016).

- 
- ❖ Luo, D., Fei, J., Zhang, C., Li, H., Zhang, L. and Huang, J. “Optimization of mechanical and tribological properties of carbon fabric/resin composites via controlling ZnO nanorods Morphology” *Ceram. Int.* 44 (2018)15393-15401.
  - ❖ Luo, T., Wei, X., Huang, X., Huang, L. and Yang, F. “Tribological Properties of Al<sub>2</sub>O<sub>3</sub> Nanoparticles as Lubricating Oil Additives” *Ceram. Int.* 40 (2014) 7143–7149.
  - ❖ Luster, B., Stone, D., Singh, D. P., Baben, M. T., Schneider, J. M., Polychronopoulou, K., Rebholz, C., Kohli, P. and Aouadi, S. M. “Textured VN coatings with Ag<sub>3</sub>VO<sub>4</sub> solid lubricant reservoirs” *Surf Coat Technol.* 206 (2011) 1932–1935.
  - ❖ Ma, Y., Zhao, Z., Xian, Y., Wan, H., Ye, Y., Chen, L., Zhou, H. and Chen, J. “Highly Dispersed Ag<sub>2</sub>S Nanoparticles: In Situ Synthesis, Size Control, and Modification to Mechanical and Tribological Properties towards Nanocomposite Coatings” *Nanomaterials* 9 (2019) 1308-1320.
  - ❖ Martin J. M., Grossiord, C., Varlot, K., Vacher, B. and Igarashi, J. “Synergistic effects in binary systems of lubricant additives: a chemical hardness approach. *Tribol. Lett.* 8 (2000)193-201.
  - ❖ Mammen, A., Verma, V. K., and Agarwal, C. V. "The ep performance of certain S-benzylisoformamidinothiocarbamides in the four-ball test" *Tribol. hardness approach*” *Tribol. Lett.* 8 (2000) 193-201.
  - ❖ Maruthi,N., Faisal,M., Raghavendra,N., Prasanna,B.P., Nandan,K.R., Kumar, K. Yogesh. and Prasad, S.B.B. "Polyaniline/V<sub>2</sub>O<sub>5</sub> composites for anticorrosion and electromagnetic interference shielding" *Mater. Chem. Phys.* 259 (2021) 124059.

- ❖ Maurya, J. L., Jaiswal, V., Tiwary D. and Rastogi, R. B. “Lanthanum Dithiocarbamates as potential extreme pressure lubrication additives” *Int. J. Ind. Chem.* 3 (2012) 1-10.
- ❖ Maurya, J. L., Vinay, J., and Rastogi, R. B. “Highly Efficient Sulfur and Phosphorous-Free Antiwear Additives for Paraffin Oil” Proceedings of the Institution of Mechanical Engineers, *Part J: J. Eng. Tribol.*230 (2016) 222–237.
- ❖ Maurya, R., Siddiqui, A.R., Katiyar, P.K. and Balani, K. "Mechanical, tribological and anti-corrosive properties of polyaniline/graphene coated Mg-9Li-7Al-1Sn and Mg-9Li-5Al-3Sn-1Zn alloys" *J. Mater. Sci. Technol.* 35 (2019) 1767–1778.
- ❖ McQueen, J. S., Gao, H., Black, E. D. and Gangopadhyay, A. K. “Jensen RK. Friction and wear of tribofilms formed by zinc dialkyl dithiophosphate antiwear additive in low viscosity engine oils” *Tribol. Int.* 38(2005)289-97.
- ❖ Min, C., Jia, W., He, Z., Zhang, K., Yang, Y., Dong, C. and Zhu, J. “Biomimetic Synthesis of Copper / Polydopamine - Functionalized Oxygenated Carbon Nitride Composites and Their Application as Lubricants” *ChemistrySelect* 5 (2020) 4839–4847.
- ❖ Mirabal - Rojas, R., Rodil, S. E., Ramirez, G., Polcar, T., Camps, E. and Erdemir, A. "Effect of the addition of Si into V<sub>2</sub>O<sub>5</sub> coatings: Structure and tribo-mechanical properties" *Surf. Coatings Technol.* 349 (2018) 111–118.
- ❖ Mkhallid, I. A., Mohamed, R. M., Alhaddad, M., Basaleh, A., Al-Hajji, L. A. and Ismail, A. A. “Construction of mesoporous lanthanum orthovanadate/carbon nitride heterojunction photocatalyst for the mineralization of trichloroethylene” *Ceramics Int.* 48 (2022) 14899–14912.
- ❖ Moghadam, A.D., Omrani, E., Menezes, P. L. and Rohatgi, P. K. “Mechanical and tribological properties of self-lubricating metal matrix nanocomposites reinforced

- by carbon nanotubes (CNTs) and graphene-a review” *Compos. Part B: Eng.* 77 (2015) 402-420.
- ❖ Mourya, P., Singh, P., Tewari, A. K., Rastogi, R. B. and Singh, M. M., “Relationship between structure and inhibition behaviour of quinolinium salts for mild steel corrosion: Experimental and theoretical approach” *Corros. Sci.* 95 (2015) 71-87.
  - ❖ Mungse, H. P. and Khatri, O. P. “Chemically functionalized reduced graphene oxide as a novel material for reduction of friction and wear” *J. Phys. Chem. C* 118 (2014) 14394-14402.
  - ❖ Mungse, H. P., Gupta, K., Singh, R., Sharma, O. P., Sugimura, H. and Khatri, O. P. “Alkylated graphene oxide and reduced graphene oxide: Grafting density, dispersion stability to enhancement of lubrication properties” *J. Colloid Interface Sci.* 541 (2019) 150-162.
  - ❖ Myshkin, N.K., Kim C.K. and Petrokovet, M.I. “Introduction to tribology, Cheong Moon Gak, Seoul” *Korea* 88 (1997).
  - ❖ Nagarajan, A. S. and Reddy, B. S. R. “Synthesis of Substituted Pyranopyrazoles under Neat Conditions via a Multicomponent Reaction” *Syn. Lett.* 12 (2009) 2002–2004.
  - ❖ Najman, M. N., Kasrai, M., Bancroft, G. M., Frazer, B. H., & De Stasio, G. “The correlation of microchemical properties to antiwear (AW) performance in ashless thiophosphate oil additives” *Tribol. Lett.* 17 (2004) 811-822.
  - ❖ Njiwa, P., Minfray, C., Mogne, T. L., Vacher, B., Martin, J.-M., Matsui, S. and Mishina, M. Zinc dialkyl phosphate (ZP) as an anti-wear additive: comparison with ZDDP. *Tribol. Lett.* 44 (2011) 19-30.

- ❖ Ota, J., Hait, S. K., Sastry, M. I. S. and Ramakumar, S. S. V. “Graphene Dispersion in Hydrocarbon Medium and its Application in Lubricant Technology” *RSC adv.* 5 (2015) 53326-53332.
- ❖ Palacio, M. and Bhushan, B. "A review of ionic liquids for green molecular lubrication in nanotechnology" *Tribol. Lett.* 40 (2010) 247–268.
- ❖ Pamies, R., Avilés, M. D., Arias-Pardilla, J., Espinosa, T., Carrión, F. J., Sanes, J. and Bermúdez, M. D. “Antiwear Performance of Ionic Liquid+Graphene Dispersions with Anomalous Viscosity-Temperature Behavior” *Tribol. Int.* 122 (2018) 200-209.
- ❖ Pang, S., Li, G. and Zhang, Z. "Synthesis of polyaniline - vanadium oxide nanocomposite nanosheets" *Macromol. Rapid Commun.* 26 (2005) 1262–1265.
- ❖ Patil, S.H., Gaikwad, A.P., Sathaye, S.D. and Patil, K.R. " To form layer by layer composite film in view of its application as supercapacitor electrode by exploiting the techniques of thin films formation just around the corner" *Electrochim. Acta.* 265 (2018) 556–568.
- ❖ Paul, G., Hirani, H., Kuila, T. and Murmu, N. C. “Nanolubricants dispersed with graphene and its derivatives: An assessment and review of the tribological performance” *Nanoscale* 11 (2019) 3458-3483.
- ❖ Paunović, V., Artusi, M., Verel, R., Hauert, F. R. and Ramirez “Lanthanum vanadate catalysts for selective and stable methane oxybromination” *J.catal.* 363 (2018) 69–80.
- ❖ Peng, Y., Hu, Y. and Wang, H. “Tribological Behaviors of Surfactant-Functionalized Carbon Nanotubes as Lubricant Additive in Water” *Tribol. Lett.* 25 (2007) 247–253.

- 
- ❖ Petkov, V., Parvanov, V., Trikalitis, P., Malliakas, C., Vogt, T. and Kanatzidis, M. G., "Three-dimensional structure of nanocomposites from atomic pair distribution function analysis: Study of polyaniline and  $(\text{Polyaniline})_{0.5}\text{V}_2\text{O}_5 \cdot 1.0 \text{H}_2\text{O}$ " *J. Am. Chem. Soc.* 127 (2005) 8805–8812.
  - ❖ Philip, J.T., Koshy, C.P., Mathew, M.D. and Kuriachen, B. "Tribological characteristic evaluation of coconut oil dispersed with surfactant modified ceria/zirconia hybrid nanoparticles" *Tribol.-Mater. Surf. Interfaces* 13 (2019) 97-214.
  - ❖ Philippon, D, De Barros-Bouchet, M. I. Lerasle, Mogne, T. Le and Martin, J.M. "Experimental Simulation of Tribochemical Reactions between Borate Esters and Steel Surface" *Tribol. Lett.* 41 (2011) 73–82.
  - ❖ Plimpton S. "Fast parallel algorithms for short-range molecular dynamics" *J. Comput. Phys.* 117 (1995) 1–19.
  - ❖ Pu, J., Wan, S., Zhao, W., Mo, Y., Zhang, X., Wang, L. and Xue, Q. "Preparation and Tribological Study of Functionalized Graphene-IL Nanocomposite Ultrathin Lubrication Films on Si Substrates" *J. Phys. Chem. C* 115 (2011) 13275-13284.
  - ❖ Qiao, Y., Liu, W., Xu, B., Ma, S. and Xue, Q. "The tribochemical performance of nano/micrometre borate modified by an N-containing compound as an oil additive" *Lubr. Sci.* 15 (2003) 369-379.
  - ❖ Qiao, Y., Liu, W., Xu, B., Ma, S. and Xue, Q. "The tribochemical performance of nano/micrometre borate modified by an N-containing compound as an oil additive" *Lubr. Sci.* 15 (2003) 369–379.
  - ❖ Qiu, M., Zhang, Y. and Wen, B. "Facile synthesis of polyaniline nanostructures with effective electromagnetic interference shielding performance" *J. Mater. Sci. Mater. Electron.* 29 (2018) 10437–10444.



- ❖ Rai, E., Yadav, R. S., Kumar, D., Singh, A. K., Fulari, V. J. and Rai, S. B. “Influence of Bi<sup>3+</sup> ion on structural, optical, dielectric and magnetic properties of Eu<sup>3+</sup> doped LaVO<sub>4</sub> phosphor” *Spectrochim. Acta A Mol. Biomol. Spectrosc.* 243 (2020) 118787.
- ❖ Rajendhran, N., Palanisamy, S., Periyasamy, P. and Venkatachalam, R. “Enhancing of the tribological characteristics of the lubricant oils using Ni-promoted MoS<sub>2</sub> nanosheets as nano-additives” *Tribol. Int.* 118 (2018) 314-328.
- ❖ Ranea, V. A., Quiña, P. L. Dammig. and Yalet, N. M. "General adsorption model for H<sub>2</sub>S, H<sub>2</sub>Se, H<sub>2</sub>Te, NH<sub>3</sub> PH<sub>3</sub>, AsH<sub>3</sub> and SbH<sub>3</sub> on the V<sub>2</sub>O<sub>5</sub> (001) surface including the van der Waals interaction" *Chem. Phys. Lett.* 720 (2019) 58–63.
- ❖ Rao, C.N.R., Maitra, U., and Waghmare U. V. “Extraordinary Attributes of 2-Dimensional MoS<sub>2</sub> Nanosheets” *Chemical Physics Letters* 609 (2014) 172–83.
- ❖ Rastogi, R. B, Maurya, J. L, Jaiswal, V. “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.
- ❖ Rastogi, R. B., Yadav, M. and Singh, K. “Synthesis and Spectroscopic Studies of Molybdenum and Tungsten Complexes of N-Isonicotinyl-N'-aryl-thiosemicarbazides” *Synthesis and Reactivity in Inorganic and Metal-Organic Chemistry* 33 (2003) 1585–96.
- ❖ Rastogi, R. B., Yadav, M. and Singh, K. “Synthesis And Characterization of Molybdenum And Tungsten Complexes Of 1-Aryl-2, 4-Dithiobiurets” *Synthesis and Reactivity in Inorganic and Metal-Organic Chemistry* 31 (2001) 1011–22.

- 
- ❖ Rastogi, R.B., Maurya, J. L. Jaiswal, V. and Tiwary, D. "Lanthanum dithiocarbamates as potential extreme pressure lubrication additives" *Int. J. Ind. Chem.*, 3 (2012)32-42.
  - ❖ Ratoi, M., Niste, V. B. and Zekonyte, J. "WS<sub>2</sub> Nanoparticles - Potential Replacement Potential for ZDD P and Friction Modifier Additives" *RSC adv.* 4 (2014) 21238-21245.
  - ❖ Razali, N. F., Mohammad, A. W., Hilal, N., Leo, C. P. and Alam, J. "Optimisation of polyethersulfone/polyaniline blended membranes using response surface methodology approach" *Desalination* 311 (2013)182-191.
  - ❖ Reeves, C. J, Menezes, P. L, Lovell, M. R, and Jen, T. C. "Tribology of solid lubricants" *Tribology for scientists and engineers* (2013) 447-494.
  - ❖ Ren, T., Liu, W., Xue, Q. and Wang, H. "The Effect of Molecular Structure of n-containing heterocyclic compounds on their wear properties" *Lubrication Science* 5 (1993) 205-212.
  - ❖ Restuccia, P., and Righi, M. C. "Tribochemistry of Graphene on Iron and Its Possible Role in Lubrication of Steel" *Carbon* 106 (2016) 118–124.
  - ❖ Rui, X., Lu, Z., Yu, H., Yang, D., Hng, H. H., Lim, T. M. and Yan, Q. "Ultrathin V<sub>2</sub>O<sub>5</sub> nanosheet cathodes: Realizing ultrafast reversible lithium storage" *Nanoscale* 5 (2013) 556–560.
  - ❖ Rylski, A. and Siczek, K. "The Effect of Addition of Nanoparticles, Especially ZrO<sub>2</sub>-Based, on Tribological Behavior of Lubricants" *Lubricants* 8 (2020) 23-47.
  - ❖ Santos, M.C., Hamdan, O.H.C., Valverde, S.A., Guerra, E.M. and Bianchi, R.F. "Synthesis and characterization of V<sub>2</sub>O<sub>5</sub>/PANI thin films for application in amperometric ammonia gas sensors" *Org. Electron* 65 (2019) 116–120.

- ❖ Sarl, Scienomics 17 Square Edouard VII 75009 Paris, France, Scienomics, France, 2014 MAPS Platform, Version 4.1.1.
- ❖ Schneider, K., Lubecka, M. and Czapla, A. "V<sub>2</sub>O<sub>5</sub> thin films for gas sensor applications." *Sens. Actuators B: Chem.* 236 (2016) 970-977.
- ❖ Serra, M., Arenal, R., and Tenne, R. "An overview of the recent advances in inorganic nanotubes" *Nanoscale* 11 (2019) 8073-8090.
- ❖ Sethuramiah, A. and Kumar, R. "Modeling of chemical wear: relevance to practice" *Elsevier* (2015).
- ❖ Setyowati, V.A., Noerochim, L., Susanti, D., Pradesar, Y., Huang, H. C., Chang, S. T., Wang K.C. and Wang, C.H. "High oxygen reduction reaction activity on various iron loading of Fe-PANI/C catalyst for PEM fuel cell" *Ionics* 26 (2020) 813–822.
- ❖ Shafiq, I., Hussain, M., Rashid, R., Shafique, S., Akhter, P., Yang, W., Ahmed, A., Nawaz, Z. and Park, Y.- K. "Development of hierarchically porous LaVO<sub>4</sub> for efficient visible-light-driven photocatalytic desulfurization of diesel" *Chem Eng J.* 420 (2021) 130529.
- ❖ Shah, F. U., Glavatskih, S. and Antzutkin, O. N. "Boron in Tribology: From Borates to Ionic Liquids." *Tribol. Lett.* 51 (2013) 281–301.
- ❖ Shukla, N., Verma, D. K., Singh, A. K., Kumar, B., Kavita and Rastogi, R. B. "Ternary Composite of Methionine-Functionalized Graphene Oxide, Lanthanum-Doped Ytria Nanoparticles, and Molybdenum Disulfide Nanosheets for Thin-Film Lubrication" *ACS Appl Nano Mater.* 3 (2020) 8012–8026.
- ❖ Shen, T., Wang, D., Yun, J., Liu, Q., Liu, X. and Peng, Z. "Tribological Properties and Tribochemical Analysis of Nano-Cerium Oxide and Sulfurized Isobutene in Titanium Complex Grease" *Tribol. Int.* 93 (2016) 332-346.

- ❖ Shumaila, Lakshmi, G. B. V. S., Alam, M., Siddiqui, A. M., Zulfequar, M. and Husain, M. "Synthesis and characterization of Se doped polyaniline" *Curr. Appl. Phys.* 11 (2011) 217–222.
- ❖ Singh, A. K., Shukla, N., Verma, D. K., Kavita, Kumar, B. and Rastogi, R.B. "Enhancement of Triboactivity of Nanolamellar Graphitic-C<sub>3</sub>N<sub>4</sub> by N-Doped ZnO Nanorods" *Ind Eng Chem Res.* 60 (2021) 864–874.
- ❖ Singh, D. P., Polychronopoulou, K., Rebholz, C. S. and Aouadi, M. "Room temperature synthesis and high temperature frictional study of silver vanadate nanorods" *Nanotechnology* 21 (2010) 325601.
- ❖ Singh, V., Joung, D., Zhai, L., Das, S., Khondaker, S. I. and Seal, S. "Graphene based materials: past, present and future" *Prog. Mater. Sci.* 56 (2011) 1178-1271.
- ❖ Singh, Y., Badhotiya, G. K., Gwalwanshi, M., Negi, P. and Bist, A. "Magnesium Oxide (MgO) as an Additive to the Neem Oil for Efficient Lubrication" *Materials Today: Proceedings* 46 (2021) 10478–81.
- ❖ Singh, Y., Singh, D., Singla, A., Sharma, A. and Singh, N. K. "Chemical modification of juliflora oil with trimethylolpropane (TMP) and effect of TiO<sub>2</sub> nanoparticles concentration during tribological investigation" *Fuel* 280 (2020) 118704-118713
- ❖ Singh, A. K., Shukla, N., Verma, D. K., Kavita, Kumar, B. and Rastogi, R.B. "Enhancement of Triboactivity of Nanolamellar Graphitic-C<sub>3</sub>N<sub>4</sub> by N-Doped ZnO Nanorods" *Ind. Eng. Chem. Res.* 60 (2021) 864–874.
- ❖ Singla, A., Garg, R. and Saxena, M. "Microstructure and wear behavior of Al-Al<sub>2</sub>O<sub>3</sub> in situ composites fabricated by the reaction of V<sub>2</sub>O<sub>5</sub> particles in pure aluminum" *Green Process. Synth.* 4 (2015) 487–497.

- ❖ Sivanand, R., Gajendiran, V., Alshamsi, H. A., Raffik, R., Sharma, A., and Pant, K. "Carbon Based Nanomaterials Technology for Tribology Applications - A Review" *Advances in Science and Technology* 117 (2022) 9-16.
- ❖ Sonawane, J. M., Pant, D., Ghosh, P. C. and Adeloju, S. B. "Polyaniline-copper composite: A non-precious metal cathode catalyst for low-temperature fuel cells" *Energy and Fuels* 35 (2021) 3385–3395.
- ❖ Song, H. J., Jia, X. H., Li, N., Yang, X. F. and Tang, H. "Synthesis of  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanorod/graphene oxide composites and their tribological properties" *J. Mater. Chem.* 22 (2012) 895–902.
- ❖ Song, H., Wang, B., Zhou, Q., Xiao, J. and Jia, X. "Preparation and Tribological Properties of MoS<sub>2</sub> /Graphene Oxide Composites" *Appl. Surf. Sci.* 419 (2017) 24-34.
- ❖ Sordello, F., Zeb, G., Hu, K., Calza, P., Minero, C., Szkopek, T. and Cerruti, "M. Tuning TiO<sub>2</sub> nanoparticle morphology in graphene – TiO<sub>2</sub> hybrids by graphene surface Modification" *Nanoscale* 6 (2014) 6710-6719.
- ❖ Spadaro, F., Rossi, A., Ramakrishna, S. N., Lainé, E., Woodward, P. and Spencer, N. D., "Understanding Complex Tribofilms by Means of H<sub>3</sub>BO<sub>3</sub>-B<sub>2</sub>O<sub>3</sub> Model Glasses" *Langmuir* 34 (2018) 2219–2234.
- ❖ Spikes, H. "Low-and zero-sulphated ash, phosphorus and sulphur anti-wear additives for engine oils" *Lubr. Sci.* 20 (2008) 103-136.
- ❖ Srinivasan, P. and Gottam, R. "Infrared Spectra: Useful Technique to Identify the Conductivity Level of Emeraldine form of Polyaniline and Indication of Conductivity Measurement either Two or Four Probe Technique" *Mater. Sci. Res. India* 15 (2018) 209–217.

- ❖ St. Dennis, J. E., Jin, K., John, V.T. and Pesika, N. S. “Carbon Microspheres as Ball Bearings in Aqueous-Based Lubrication” *ACS Appl. Mater. Interfaces* 3 (2011) 2215–2218.
- ❖ Stewart, W. T. and Stuart F. A. “Lubricating oil additives. Advances in Petroleum Chemistry and Refining” *Interscience New York* 7 (1963) 15-18.
- ❖ Sun, H., Mumby, S. J., Maple, J. R. and Hagler, A. T. “An Ab Initio CFF93 All-Atom Force Field for Polycarbonates” *J. Am. Chem. Soc.* 116 (1994) 2978.
- ❖ Sun, J. and Du, S. “Application of graphene derivatives and their nanocomposites in tribology and lubrication: a review” *RSC Adv.* 9 (2019) 40642-40661.
- ❖ Sun, L., Zhao, X., Li, Y., Li, P., Sun, H., Cheng, X. and Fan, W. “First-principles studies of electronic, optical, and vibrational properties of LaVO<sub>4</sub> polymorph” *J Appl Phys.* 108 (2010) 093519.
- ❖ Sun, S., Yu, H., Wang, Y., Zhang, H. and Wang, J. “Thermal, spectroscopic and laser characterization of monoclinic vanadate Nd: LaVO<sub>4</sub> crystal” *Opt Express* 21 (2013) 31119.
- ❖ Svirskis, D., Travas -Sejdic, J., Rodgers, A. and Garg, S. "Electrochemically controlled drug delivery based on intrinsically conducting polymers" *J. Control Release* 146 (2010) 6–15.
- ❖ Ta, D. T., Tieu, A. K., Zhu, H. T. and Kosasih, B. “Thin Lubrication of Film Hexadecane Confined by Iron and Iron Oxide Surfaces: A Crucial Role of Surface Structure” *J. Chem.Phys.* 143 (2015) 164702–164717.
- ❖ Tan, L., Xu, J., Li, S., Li, D., Dai, Y., Kou, B. and Chen, Y. “Direct Growth of CuO Nanorods on Graphitic Carbon Nitride with Synergistic Effect on Thermal Decomposition of Ammonium Perchlorate” *Materials* 10 (2017) 484.

- ❖ Tang, H., Sun, J., Zhao, Z. and Han, Z. “Effect of Friction Velocity on Tribological Behavior of Coumarin as Mineral Oil Additive” *J. Tribol.* 143 (2021) 021901.
- ❖ Tang, W., An, Y. and Row, K.-H. “Fabrication of Au nanoparticles embedded holey g-C<sub>3</sub>N<sub>4</sub> as SERS substrates for sensitive and reliable detection” *Chem Eng J.* 402 (2020) 126194.
- ❖ Tang, W., Huang, Z. and Wang, B. “Synthesis of ionic liquid functionalized graphene oxides and their tribological property under water lubrication” *Fuller. Nanotub. Car. N.* 26 (2018) 175-183.
- ❖ Tang, Z. and Li, S. “A review of recent developments of friction modifiers for liquid lubricants” *Curr. Opin. Solid State Mater Sci.* 18 (2014) 119-139.
- ❖ Tillmann, W., Hagen, L., Kokalj, D., Paulus, M. and Tolan, M. " Temperature-induced formation of lubricous oxides in vanadium containing iron-based arc sprayed coatings" *Coatings* 9 (2019) 18.
- ❖ Tung, S. C. and McMillan, M. L. “Automotive Tribology Overview of Current Advances and Challenges for the Future” *Tribol. Int.* 37 (2004) 517–536.
- ❖ Turan, M. E., Sun, Y. and Akgul, Y. “Mechanical, tribological and corrosion properties of fullerene reinforced magnesium matrix composites fabricated by semi powder metallurgy” *J. Alloy Compd.* 740 (2018) 1149-58.
- ❖ Uflyand, I.E., Zhinzilo, V. A. and Burlakova, V. E., “Metal-containing nanomaterials as lubricant additives: State-of-the-art and future development” *Friction* 7 (2019) 93-116.
- ❖ Vairapperumal, T., Lakshmi, M., Kumar, R. V., Janardhanan, S. K. and Kumar, M. A. “Dual mode luminescence from lanthanum orthovanadate nanoparticles” *J Lumin.* 217 (2020) 116761.

- 
- ❖ Välbe, R., Tarkanovskaja, M., Mäeorg, U., Reedo, V., Lõhmus, A., Taaber, T., Vlassov, S. and Lõhmus, R. “Phosphonium-Based Ionic Liquids Mixed with Stabilized Oxide Nanoparticles as Highly Promising Lubricating Oil Additives” *Proc. Estonian Acad. Sci.* 66 (2017) 174.
  - ❖ Vamsi, K. P, Srikant, R R and Nageswara R. D. “Solid Lubricants in Machining” *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology* 225 (2011) 213–227.
  - ❖ Vardhaman, B.S. A., Amarnath, M., Ramkumar, J. and Mondal, K. “Enhanced Tribological Performances of Zinc Oxide/MWCNTs Hybrid Nanomaterials as the Effective Lubricant Additive in Engine Oil” *Mater. Chem. Phys.* 253 (2020)123447.
  - ❖ Vasuki, G. and Kumaravel, K. “Rapid Four-Component Reactions in Water: Synthesis of Pyranopyrazoles” *Tetrahedron Lett.* 49 (2008) 5636–5638.
  - ❖ Veldurthi, N. K., Eswar, N. K., Singh, S. A. and Madras, G. “Cocatalyst free Z-schematic enhanced H<sub>2</sub> evolution over LaVO<sub>4</sub>/BiVO<sub>4</sub> composite photocatalyst using Ag as an electron mediator” *Appl Catal B.* 220 (2018) 512–523.
  - ❖ Verma, D. K., Kumar, B., Kavita and Rastogi, R. B. “Zinc Oxide- and Magnesium-Doped Zinc Oxide-Decorated Nanocomposites of Reduced Graphene Oxide as Friction And Wear Modifiers” *ACS Appl. Mater. Interfaces* 11 (2018) 2418–2430.
  - ❖ Verma, D. K., Kuntail, J., Kumar, B., Singh, A. K., Shukla, N., Kavita, Sinha, I. and Rastogi, R. B. “Amino Borate-Functionalized Reduced Graphene Oxide Further Functionalized with Copper Phthalocyanine Nanotubes for Reducing Friction and Wear” *ACS Appl Nano. Mater.* 3 (2020a) 5530–5541.
  - ❖ Verma, D., Shukla, N., Kumar, B., Singh, A., Shahu, K., Yadav, M., Rhee, K. and Rastogi, R. “Synergistic Tribo-Activity of Nanohybrids of Zirconia/Cerium-Doped



- Zirconia Nanoparticles with Nano Lamellar Reduced Graphene Oxide and Molybdenum Disulfide” *Nanomaterials* 10 (2020b) 707.
- ❖ Verma, D.K., Kalyani, Jaiswal, V. and Rastogi, R.B. “Tribological Studies of Some Quinoline Derivatives and Their Synergistic Interaction with phosphate Ester” *Tribol. Trans.* 62 (2019) 283–294.
  - ❖ Vivekanandan, J., Ponnusamy, V., Mahudeswaran, A. and Vijayanand, P. S. "Synthesis, characterization and conductivity study of polyaniline prepared by chemical oxidative and electrochemical methods" *Appl. Sci. Res.* 3 (2011) 147–153.
  - Vyas,S., Shivhare,S. and Shukla,A. "Polyaniline ( PANI ) Metal Oxide Nano Composites as a Conducting Material" *Int. J. Res. Sci. Innov.* 4 (2017) 86–89.
  - ❖ Waara, Patric, Jesper Hannu, Thomas Norrby, and Åke Byheden. “Additive Influence on Wear and Friction Performance of Environmentally Adapted Lubricants.” *Tribol. Int.*34 (2001) 547–556.
  - ❖ Wan, W., Jiang, W., Chen, H., Zhu, L., Luo, J., Yang, W., Chen, G., Chen, Z. and Zhu, W." H. Li, Pt nanoparticles encapsulated on V<sub>2</sub>O<sub>5</sub> nanosheets carriers as efficient catalysts for promoted aerobic oxidative desulfurization performance" *Chinese J. Catal.* 42 (2021) 557–562.
  - ❖ Wang, B., Qiu, F., Barber G. C., Zou Q., Wang J., Guo, S., Yuan, Y., and Jiang, Q. “Role of Nano-Sized Materials as Lubricant Additives in Friction and Wear Reduction: A Review” *Wear* 490–491 (2022) 204206.
  - ❖ Wang, B., Tang, W., Lu, H. and Huang, Z. “Ionic liquid capped carbon dots as a high-performance friction-reducing and antiwear additive for poly (ethylene glycol)” *J. Mater. Chem. A* 4 (2016) 7257-7265.

- 
- ❖ Wang, Q., Zhang, Z., Zheng, Y., Cai, W. and Yu, Y. “Multiple irradiation triggered the formation of luminescent  $\text{LaVO}_4:\text{Ln}^{3+}$  nanorods and in cellulose gels” *Cryst Eng Comm.* 14 (2012) 4786-4793.
  - ❖ Wang, W. and Schiff, E.A. "Polyaniline on crystalline silicon heterojunction solar cells" *Appl. Phys. Lett.* 91 (2007).
  - ❖ Wen, J., Xie, J., Chen, X. and Li, X. “A review on g- $\text{C}_3\text{N}_4$ -based photocatalysts” *Appl Surf Sci.* 391 (2017) 72–123.
  - ❖ Weng, G.-M., Xie, Y., Wang, H., Karpovich, C., Lipton, J., Zhu, J., Kong, J., Pfefferle, L-D. and Taylor, A-D. “A Promising Carbon/g- $\text{C}_3\text{N}_4$  Composite Negative Electrode for a Long-Life Sodium-Ion Battery” *Angew Chem Int Ed.* 58 (2019) 13727–13733.
  - ❖ Westerholt, A., Weschta, M., Bosmann, A., Tremmel, S., Korth, Y., Wolf, M., Schlucker, E., Wehrum, N., Lennert, A., Uerdingen, M. and Holweger, W. “Halide-free synthesis and tribological performance of oil-miscible ammonium and phosphonium-based ionic liquids” *ACS Sustain. Chem. Eng.* 3 (2015) 797-808.
  - ❖ Wong, V. W., Thomas, B. C. and Watson, S. A. G. “Bridging Macroscopic Lubricant Transport and Surface Tribochemical Investigations in reciprocating engines” *Proceedings of the Institution of Mechanical Engineers, Part J: J. Eng. Tribol.* 221 (2007) 183-193.
  - ❖ Wu, C., Wei, C., Jin, X., Akhtar, R., and Zhang, W. “Carbon Spheres as Lubricant Additives for Improving Tribological Performance of Polyetheretherketone” *J. Mater. Sci.* 54 (2019) 5127–35.
  - ❖ Wu, H., Yin, S., Du, Y., Wang, L. and Wang, H. “An investigation on the lubrication effectiveness of  $\text{MoS}_2$  and BN layered materials as oil additives using block-on-ring tests” *Tribol. Int.* 151 (2020a) 106516.

- 
- ❖ Wu, H., Yin, S., Du, Y., Wang, L., Yang, Y. and Wang, H. “Alkyl-Functionalized Boron Nitride Nanosheets as Lubricant Additives” *ACS Appl. Nano Mater.* 3 (2020b) 9108-9116.
  - ❖ Wu, L., Zhang, Z., Yang, M., Yuan, J., Li, P., Guo, F. and Men, X. “Facile synthesis of CuO/g-C<sub>3</sub>N<sub>4</sub> hybrids for enhancing the wear resistance of polyimide composite” *Eur Polym J.* 116 (2019a) 463–470.
  - ❖ Wu, L., Zhang, Z., Yang, M., Yuan, J., Li, P., Guo, F. and Men, X. “One-step synthesis of g- C<sub>3</sub>N<sub>4</sub> nanosheets to improve tribological properties of phenolic coating” *Tribol Int.* 132 (2019 b) 221–227.
  - ❖ Wu, P. R., Kong, Y. C., Ma, Z. S., Ge, T., Feng, Y. M., Liu, Z. and Cheng, Z. L. “Preparation and tribological properties of novel zinc borate/MoS<sub>2</sub>nanocomposites in grease” *J. Alloys Compd.* 740 (2018) 823-829.
  - ❖ Xiao, H., and Liu, S. “2D Nanomaterials as Lubricant Additive: A Review” *Materials and Design* 135 (2017) 319–332.
  - ❖ Xie, C., Toops, T., Lance, M., Qu, J., Viola, M., Lewis, S., Leonard, D. and Hagaman, E. "Impact of Lubricant Additives on The Physicochemical Properties and Activity of Three-Way Catalysts” *Catalysts* 6 (2016) 54.
  - ❖ Xie, H., Dang, S., Jiang, B., Xiang, L., Zhou, S., Sheng, H., Yang T. and Pan, F. “Tribological performances of SiO<sub>2</sub>/graphene combinations as water-based lubricant additives for magnesium alloy rolling” *Appl. Surf. Sci.* 475 (2019) 847-856.
  - ❖ Xie, H., Jiang, B., He, J., Xia, X. and Pan, F. “Lubrication Performance of MoS<sub>2</sub> and SiO<sub>2</sub> Nanoparticles as Lubricant Additives in Magnesium Alloy-Steel Contacts” *Tribol. Int.* 93 (2016) 63-70.

- 
- ❖ Xie, H., S. Dang, B. Jiang, L. Xiang, S. Zhou, H. Sheng, T. Yang and F. Pan, “Tribological performances of SiO<sub>2</sub>/graphene combinations as water-based lubricant additives for magnesium alloy rolling” *Appl. Surf. Sci.* 475 (2019) 847-856.
  - ❖ Xiong, L., He, Z., Han, S., Tang, J., Wu, Y. and Zeng, X. “Tribological Properties Study of N-Containing Heterocyclic Imidazoline Derivatives as Lubricant Additives in Water-Glycol” *Tribol. Int.* 104 (2016) 98–108.
  - ❖ Xu, L., Zhang, Y., Zhang, D. and Leng, M. “Preparation and tribological properties of Ag nanoparticles/reduced graphene oxide nanocomposites” *Ind. Lubr. Tribol.* 70 (2018) 1684-1691.
  - ❖ Xu, X., Wan, Y. and Cao, L. “Tribological Performance and Action Mechanism of S-Alkyl and S-Benzimidazole Substituted Dialkyldithiocarbamates” *Wear* 241 (2000) 41–46.
  - ❖ Xu, Y., Peng, Y., Dearn, K. D., Zheng X., Yao, L. and Hu, X. “Synergistic Lubricating Behaviors of Graphene and MoS<sub>2</sub> Dispersed in Esterified Bio-Oil for Steel /Steel Contact” *Wear* 343 (2017) 297-309.
  - ❖ Xu, Z. D., Xin, J. B., Fan, R. X., Wang, K. and Yang, J. “A simple approach to fabricate g-C<sub>3</sub>N<sub>4</sub> / MoS<sub>2</sub> nanocomposite and its application as a lubricant additive” *Dig. J. Nanomater. Bios.* 13 (2018) 731–741.
  - ❖ Xu, Z., Lou, W., Zhao, G., Zheng, D., Hao, J. and Wang, X., “Cu nanoparticles decorated WS<sub>2</sub> nanosheets as a lubricant additive for enhanced tribological performance” *RSC Adv.* 9 (2019) 7786-7794.
  - ❖ Xu, X., Fu, Q., Gu, H., Guo, Y., Zhou, H., Zhang, J., Pan, D., Wu, S., Dong, M. and Guo, Z. "Polyaniline crystalline nanostructures dependent negative permittivity metamaterials" *Polymer* 188 (2020) 122129.

- 
- ❖ Yakuphanoglu, F. and Şenkal, B. F. "Electronic and thermoelectric properties of polyaniline organic semiconductor and electrical characterization of Al/PANI MIS diode" *J. Phys. Chem. C*. 111 (2007) 1840–1846.
  - ❖ Yamuna, A., Chen, T.-W., Chen, S.-M. and Wu, W. L. "Simultaneous electrochemical determination of nitroaniline and flutamide based on iron vanadate and lanthanum vanadate nanocomposite modified electrode by voltammetric technique" *J. Electroanal Chem.* 901 (2021) 115772.
  - ❖ Yan, J., Zeng, X., Van Der Heide, E. and Ren, T. "The tribological performance and tribochemical analysis of novel borate esters as lubricant additives in rapeseed oil" *Tribol. Int.* 71 (2014) 149–157.
  - ❖ Yang, K., Shi, X., Zou, J., Radwan, A. R., Ibrahim, A. M. M., Li, X., Huang, Y. and Shen, Q. "The Research on the Bionic Friction Layers of TiAl-10wt. %  $V_2O_5$  Nanowires at the Applied Loads of 6-24 N" *J. Mater. Eng. Perform.* 25 (2016) 5391–5399.
  - ❖ Yang, G., Zhang, J., Zhang, S., Yu, L., Zhang, P. and Zhu, B. "Preparation of triazine derivatives and evaluation of their tribological properties as lubricant additives in poly-alpha olefin" *Tribol. Int.* 62 (2013) 163–170.
  - ❖ Yang, G., Zhang, Z., Li, G., Zhang, J., Yu, L. and Zhang, P. "Synthesis and tribological properties of S- and P-free borate esters with different chain lengths" *J. Tribol.* 133, (2011) 1–7.
  - ❖ Yang, G., Zhao, J., Cui, L., Song, S., Zhang, S., Yu, L. and Zhang, P. "Tribological characteristic and mechanism analysis of borate ester as a lubricant additive in different base oils" *RSC Adv.* 7 (2017) 7944-7953.
  - ❖ Yang, J., Yao, H., Liu, Y. and Zhang, Y. "Synthesis and Tribological properties of  $WSe_2$  Nanorods" *Nanoscale Res. Lett.* 3 (2008) 481.

- 
- ❖ Yang, J., Zhang, H., Chen, B., Tang, H., Li, C. and Zhang, Z. “Fabrication of the g-C<sub>3</sub>N<sub>4</sub>/Cu nanocomposite and its potential for lubrication applications” *RSC Adv.* 5 (2015) 64254–64260.
  - ❖ Yang, X., Mei, T., Yang, J., Zhang, C., Lv, M. and Wang, X. “Synthesis and characterization of alkylamine-functionalized graphene for polyolefin-based nanocomposites” *Appl. Surf. Sci.* 305 (2014) 725-731.
  - ❖ Yao, J. “Antiwear function and mechanism of borate containing nitrogen” *Tribol. Int.* 30 (1997) 387–389.
  - ❖ Yazdi, S. Tabatabai, Shahri, R. Pilevar. and Shafei, S. "First synthesis of In-doped vanadium pentoxide thin films and their structural, optical and electrical characterization" *Mater. Sci. Eng. B.* 263 (2021) 114755.
  - ❖ Yi, M. and Zhang, C. "The synthesis of two-dimensional MoS<sub>2</sub> nanosheets with enhanced tribological properties as oil additives" *RSC Adv.* 8 (2018) 9564–9573.
  - ❖ Yu, B., Liu, Z., Zhou, F., Liu, W., and Liang, Y. “A Novel Lubricant Additive Based on Carbon Nanotubes for Ionic Liquids.” *Mater. Lett.* 62 (2008) 2967–69.
  - ❖ Yuan, J., Zhang, Z., Yang, M., Wu, L., Li, P., Guo, F., Men, X. and Liu, W. “Coupling hybrid of BN nanosheets and carbon nanotubes to enhance the mechanical and tribological properties of fabric composites” *Compos. Part A: Appl. Sci. Manuf.* 123 (2019) 132-140.
  - ❖ Zabinski, J.S., Bultman, J.E., Sanders, J.H. and Hu, J.J. “Multi-Environmental Lubrication Performance and Lubrication Mechanism of MoS<sub>2</sub>/Sb<sub>2</sub>O<sub>3</sub>/C Composite Films” *Tribol. Lett.* 23 (2006) 155–163.
  - ❖ Zhai, W. and K. Zhou, “Nanomaterials in Superlubricity” *Adv. Funct. Mater.* 29 (2019) 1806395-1806414.

- ❖ Zhai, W., Srikanth, N., Kong, L. B. and Zhou, K. “Carbon nanomaterials in tribology” *Carbon* 119 (2017) 150-171.
- ❖ Zhang, C., Li, Y., Shuai, D., Shen, Y., Xiong, W. and Wang, L. “Graphitic carbon nitride (g-C<sub>3</sub>N<sub>4</sub>)-based photocatalysts for water disinfection and microbial control: A review” *Chemosphere* 214 (2019) 462–479.
- ❖ Zhang, F., Tang, G., Xu, J. and Li, C. “Solvothermal preparation and tribological performance of g- C<sub>3</sub>N<sub>4</sub>/TiO<sub>2</sub> hybrids as oil-based lubricant additives” *Micro Nano Lett.* 14 (2019) 1355–1360.
- ❖ Zhang, J. and Zhang, J. “Surfactant inducing phase change of ZnO nanorods to low friction” *Tribol. Lett.* 49 (2013) 77–83.
- ❖ Zhang, L.L., Tu, J.P., Wu, H.M. and Yang, Y.Z. “WS<sub>2</sub> Nanorods Prepared by Self-Transformation Process and Their Tribological Properties as Additive in Base Oil” *Materials Science and Engineering: A* 454–455 (2007) 487–491.
- ❖ Zhang, R., Ding, Q., Yang, L., Zhang, S., Niu, Q., Ye, J., Wang, Z. and Hu, L. “A novel sonogel based on h-BN nanosheets for the tribological application under extreme conditions” *Tribol. Int.* 138 (2019) 271-278.
- ❖ Zhang, X., Luster, B., Church, A., Muratore, C., Voevodin, A. A., Kohli, P., Aouadi, S., and Talapatra, S. “Carbon Nanotube–MoS<sub>2</sub> Composites as Solid Lubricants” *ACS Appl. Mater. Interfaces* 1 (2009) 735–739.
- ❖ Zhang, X., Xie, X., Wang, H., Zhang, J., Pan, B. and Xie, Y. “Enhanced Photoresponsive Ultrathin Graphitic-Phase C<sub>3</sub>N<sub>4</sub> Nanosheets for Bioimaging” *J Am Chem Soc.* 135 (2013) 18–21.
- ❖ Zhang, X.-L., Zheng, C., Guo, S.-S., Li, J., Yang, H.-H. and Chen, G. “Turn-On Fluorescence Sensor for Intracellular Imaging of Glutathione Using g- C<sub>3</sub>N<sub>4</sub> Nanosheet–MnO<sub>2</sub> Sandwich Nanocomposite” *Anal Chem.* 86 (2014) 3426–3434.

- ❖ Zhang, Y., Cai, T., Shang, W., Liu, D., Guo, Q. and Liu, S. "Facile synthesis of photoluminescent inorganic-organic hybrid carbon dots codoped with B and N: towards an efficient lubrication additive" *Dalton Trans.* 46 (2017) 12306-12312.
- ❖ Zhang, K., Li, N., Ma, X., Wang, Y., Zhao, J., Qiang, L., Li, X. and Li, Y. "Building ultrathin polyaniline encapsulated V<sub>2</sub>O<sub>5</sub> heterogeneous nanowires and its electrochromic performance" *J. Electroanal. Chem.* 825 (2018) 16–21.
- ❖ Zhao, J., Chen, G., He, Y., Li, S., Duan, Z., Li, Y. and Luo, J. "A novel route to the synthesis of a Fe<sub>3</sub>O<sub>4</sub>/h-BN 2D nanocomposite as a lubricant additive" *RSC Adv.* 9 (2019) 6583-6588.
- ❖ Zhao, J., Li, Y., He, Y. and Luo, J. "In situ green synthesis of the new sandwichlike nanostructure of Mn<sub>3</sub>O<sub>4</sub>/graphene as lubricant additives" *ACS appl. mater. interfaces* 11 (2019) 36931-36938.
- ❖ Zhao, J.; He, Y.; Wang, Y.; Wang, W.; Yan, L.; Luo, J. "An investigation on the tribological properties of multilayer graphene and MoS<sub>2</sub> nanosheets as additives used in hydraulic applications" *Tribol. Int.* 97 (2016) 14-20.
- ❖ Zheng, X., Hu, X., Xu, Y., Geng, J., Peng, Y. and Olson, D. "Tribological Behavior of Fe<sub>3</sub>O<sub>4</sub>/MoS<sub>2</sub> Nanocomposites Additives in Aqueous and Oil Phase Media" *Tribol. Int.* 102 (2016) 79-87.
- ❖ Zhou, G., Zhu, Y., Wang, X., Xia, Zhang, M. Y. and Ding, H. "Sliding Tribological Properties of 0.45% Carbon Steel Lubricated with Fe<sub>3</sub>O<sub>4</sub> Magnetic Nano-Particle Additives in Base Oil" *Wear* 301 (2013) 753-757.
- ❖ Zhou, J., Wu, Z., Zhang, Z., Liu, W and Dang, H. "Study on an Antiwear and Extreme Pressure Additive of Surface Coated LaF<sub>3</sub> Nanoparticles in liq. Paraffin" *Wear* 249 (2001) 333–337.



- ❖ Zhou, Q., Huang, J., Wang, J., Yang, Z., Liu, S., Wang, Z. and Yang, S. "Preparation of a Reduced Graphene Oxide/Zirconia Nanocomposite and its Application as a Novel Lubricant Oil Additive" *RSC adv.* 5(2015) 91802.
- ❖ Zhou, Y. and Qu, J. "Ionic liquids as lubricant additives: a review" *ACS Appl. Mater. Interfaces* 9 (2017) 3209–3222.
- ❖ Zhou, Y., Pan, G., Shi, X., Zhang, S., Gong, H., and Luo, G. "Effects of ultra-smooth surface atomic step morphology on chemical mechanical polishing (CMP) performances of sapphire and SiC wafers" *Tribol. int.* 87 (2015) 145-150.
- ❖ Zhu, S., Tan, H., Cheng, J., Yu, Y., Qiao, Z. and Yang, J. "Nickel aluminum matrix solid-lubricating composite lubricated by silver and silver vanadate formed by tribochemistry at elevated temperature" *J. Tribol.* 141 (2019) 031302.
- ❖ Zhu, L., Wang, Y., Hu, F. and Song, H. "Structural and friction characteristics of g-C<sub>3</sub>N<sub>4</sub>/PVDF composites" *Appl Surf Sci.* 345 (2015) 349–354.
- ❖ Zhu, Q., Xu, Z., Qiu, B., Xing, M. and Zhang, J. "Emerging Cocatalysts on g-C<sub>3</sub>N<sub>4</sub> for Photocatalytic Hydrogen Evolution" *Small* 17 (2021) 2101070.
- ❖ Zhu, Y., Murali, S., Cai, W., Li, X., Suk, J. W., Potts, J. R. and Ruoff, R. S. "Graphene and Graphene Oxide: Synthesis, Properties, and Applications" *Adv. Mater.* 22 (2010) 3906-3924.
- ❖ Zou, C.W., Yan, X. D., Han, J., Chen, R. Q. and Gao, W. "Microstructures and optical properties of  $\beta$ -V<sub>2</sub>O<sub>5</sub> nanorods prepared by magnetron sputtering" *J. Phys. D. Appl. Phys.* 42 (2009) 145402.
- ❖ Zou, X., Yuan, C., Dong, Y., Ge, H., Ke, J. and Cui, Y. "Lanthanum orthovanadate/bismuth oxybromide heterojunction for enhanced photocatalytic air purification and mechanism exploration" *Chem. Eng. J.* 379 (2020) 122380.