

## REFERENCES

- [1] R. Hsissou, R. Seghiri, Z. Benzekri, M. Hilali, M. Rafik, and A. Elharfi, "Polymer composite materials: A comprehensive review," *Composite structures*, vol. 262, p. 113640, 2021.
- [2] J. S. Sefadi, "The morphology and properties of EVA/Malaysian empty fruit bunch composites," 2010.
- [3] S. Bagherpour, "Fibre reinforced polyester composites," in *Polyester*: IntechOpen, 2012.
- [4] C. V. Stevens, *Bio-based plastics: materials and applications*. John Wiley & Sons, 2013.
- [5] M. K. Egbo, "A fundamental review on composite materials and some of their applications in biomedical engineering," *Journal of King Saud University-Engineering Sciences*, vol. 33, no. 8, pp. 557-568, 2021.
- [6] H. Fang, Y. Bai, W. Liu, Y. Qi, and J. Wang, "Connections and structural applications of fibre reinforced polymer composites for civil infrastructure in aggressive environments," *Composites Part B: Engineering*, vol. 164, pp. 129-143, 2019.
- [7] M. Mandal, G. Gogoi, N. Dutta, and T. K. Maji, "Development of biobased wood polymer nanocomposites: industrial applications, market, and future trends," in *Handbook of polymer nanocomposites for industrial applications*: Elsevier, 2021, pp. 587-615.
- [8] I. M. Alarifi, *Synthetic engineering materials and nanotechnology*. Elsevier, 2021.
- [9] K. Pooja, N. Tarannum, and P. Chaudhary, "Metal matrix composites: revolutionary materials for shaping the future," *Discover Materials*, vol. 5, no. 1, p. 35, 2025.
- [10] R. Phiri, S. M. Rangappa, S. Siengchin, O. P. Oladijo, and T. Ozbakkaloglu, "Advances in lightweight composite structures and manufacturing technologies: A comprehensive review," *Heliyon*, 2024.
- [11] V. Tcherdyntsev, "Reinforced Polymer Composites. *Polymers* 2021, 13, 564," *Reinforced Polymer Composites*, vol. 110, p. 1, 2021.
- [12] R. Yadav, M. Singh, D. Shekhawat, S.-Y. Lee, and S.-J. Park, "The role of fillers to enhance the mechanical, thermal, and wear characteristics of polymer composite materials: A review," *Composites Part A: Applied Science and Manufacturing*, vol. 175, p. 107775, 2023.
- [13] D. K. Rajak, P. H. Wagh, and E. Linul, "A review on synthetic fibers for polymer matrix composites: performance, failure modes and applications," *Materials*, vol. 15, no. 14, p. 4790, 2022.
- [14] A. Mirabedini, A. Ang, M. Nikzad, B. Fox, K. T. Lau, and N. Hameed, "Evolving strategies for producing multiscale graphene-enhanced fiber-reinforced polymer composites for smart structural applications," *Advanced Science*, vol. 7, no. 11, p. 1903501, 2020.
- [15] V. Gupta and V. Kothari, *Manufactured fibre technology*. Springer Science & Business Media, 2012.
- [16] E. M. Taiwo, K. Yahya, and Z. Haron, "Potential of using natural fiber for building acoustic absorber: A review," in *Journal of Physics: Conference Series*, 2019, vol. 1262, no. 1, p. 012017: IOP Publishing.
- [17] Saroia, Jabran, Yanen Wang, Qinghua Wei, Mingju Lei, Xinpei Li, Ying Guo, and Kun Zhang, "A review on 3D printed matrix polymer composites: its potential and future challenges," *The international journal of advanced manufacturing technology*, vol. 106, pp. 1695-1721, 2020.
- [18] Sivan, Dawn, K. Satheesh Kumar, Aziman Abdullah, Veena Raj, Izan Izwan Misnon, Seeram Ramakrishna, and Rajan Jose, "Advances in materials informatics: a review," *Journal of Materials Science*, vol. 59, no. 7, pp. 2602-2643, 2024.
- [19] Asyraf, Muhammad Rizal Muhammad, A. Syamsir, Norizan Mohd Nurazzi, Mohd Nor Faiz Norrahim, Shukur Abu Hassan, Rushdan Ahmad Ilyas, Wan Aliff Abdul Saad et al,

- "Synthetic nanofillers in polymer composites for aerospace industry," in *Synthetic and Natural Nanofillers in Polymer Composites*: Elsevier, 2023, pp. 291-311.
- [20] Y. Ou, L. Wu, and D. Mao, "Hierarchical mode I interlaminar toughening of unidirectional CFRP laminates by the synergistic effects of CNT powders and veils," *Composites Part A: Applied Science and Manufacturing*, vol. 168, p. 107464, 2023.
- [21] X. You, Q. Zhang, J. Yang, and S. Dong, "Review on 3D-printed graphene-reinforced composites for structural applications," *Composites Part A: Applied Science and Manufacturing*, vol. 167, p. 107420, 2023.
- [22] Mehta, Jimmy, Partha Pratim Das, Sahil Mehta, Vijay Chaudhary, Sumit Gupta, Niraj Gupta, Moti Lal Rinawa, and Pallav Gupta, "Effect of nanofillers and nanotoxicity on the performance of composites: Influencing factors, future scope, challenges and applications," *Polymer Composites*, vol. 43, no. 6, pp. 3335-3349, 2022.
- [23] J. Luna and A. Vílchez, "Polymer nanocomposites for food packaging," in *Emerging nanotechnologies in food science*: Elsevier, 2017, pp. 119-147.
- [24] G. Wang, L. Liu, and Z. Zhang, "Interface mechanics in carbon nanomaterials-based nanocomposites," *Composites Part A: Applied Science and Manufacturing*, vol. 141, p. 106212, 2021.
- [25] S. Fu, Z. Sun, P. Huang, Y. Li, and N. Hu, "Some basic aspects of polymer nanocomposites: A critical review," *Nano Materials Science*, vol. 1, no. 1, pp. 2-30, 2019.
- [26] W. Han, J. Zhou, and Q. Shi, "Research progress on enhancement mechanism and mechanical properties of FRP composites reinforced with graphene and carbon nanotubes," *Alexandria Engineering Journal*, vol. 64, pp. 541-579, 2023.
- [27] W. Ding, D. Jahani, E. Chang, A. Alemdar, C. B. Park, and M. Sain, "Development of PLA/cellulosic fiber composite foams using injection molding: Crystallization and foaming behaviors," *Composites Part A: Applied Science and Manufacturing*, vol. 83, pp. 130-139, 2016.
- [28] B. Zhang *et al.*, "Surface coating of aramid fiber by a graphene/aramid nanofiber hybrid material to enhance interfacial adhesion with rubber matrix," *Industrial & Engineering Chemistry Research*, vol. 60, no. 6, pp. 2472-2480, 2021.
- [29] J. W. Card, D. C. Zeldin, J. C. Bonner, and E. R. Nestmann, "Pulmonary applications and toxicity of engineered nanoparticles," *American Journal of Physiology-Lung Cellular and Molecular Physiology*, vol. 295, no. 3, pp. L400-L411, 2008.
- [30] Das, Partha Pratim, Ankit Manral, Furkan Ahmad, Bhasha Sharma, Vijay Chaudhary, Sumit Gupta, and Pallav Gupta, "Environmentally sustainable chemical treatment of plant fibers for improved performance of polymeric composites," *Polymer Composites*, vol. 43, no. 10, pp. 7155-7169, 2022.
- [31] M. K. Jha, P. P. Das, V. Pandey, P. Gupta, V. Chaudhary, and S. Gupta, "Water immersion aging of polymer composites: architectural change of reinforcement, mechanical, and morphological analysis," *Biomass Conversion and Biorefinery*, vol. 14, no. 14, pp. 15769-15783, 2024.
- [32] D. De Cicco, Z. Asaee, and F. Taheri, "Use of nanoparticles for enhancing the interlaminar properties of fiber-reinforced composites and adhesively bonded joints—A review," *Nanomaterials*, vol. 7, no. 11, p. 360, 2017.
- [33] B. Monteiro and S. Simões, "Recent Advances in Hybrid Nanocomposites for Aerospace Applications," *Metals*, vol. 14, no. 11, p. 1283, 2024.
- [34] P. Pino, F. Bosco, C. Mollea, and B. Onida, "Antimicrobial nano-zinc oxide biocomposites for wound healing applications: a review," *Pharmaceutics*, vol. 15, no. 3, p. 970, 2023.
- [35] J. Sun and S. Du, "Application of graphene derivatives and their nanocomposites in tribology and lubrication: a review," *RSC advances*, vol. 9, no. 69, pp. 40642-40661, 2019.

- [36] P. Kiliaris and C. Papaspyrides, "Polymer/layered silicate (clay) nanocomposites: an overview of flame retardancy," *Progress in polymer science*, vol. 35, no. 7, pp. 902-958, 2010.
- [37] C. Hochard, P.-A. Aubourg, and J.-P. Charles, "Modelling of the mechanical behaviour of woven-fabric CFRP laminates up to failure," *Composites science and technology*, vol. 61, no. 2, pp. 221-230, 2001.
- [38] Zheng, Hao, Wenjian Zhang, Bowen Li, Junjie Zhu, Chaohang Wang, Guojun Song, Guangshun Wu, Xiaoping Yang, Yudong Huang, and Lichun Ma, "Recent advances of interphases in carbon fiber-reinforced polymer composites: A review," *Composites Part B: Engineering*, vol. 233, p. 109639, 2022.
- [39] C. H. Lee, A. Khalina, and S. H. Lee, "Importance of interfacial adhesion condition on characterization of plant-fiber-reinforced polymer composites: a review," *Polymers*, vol. 13, no. 3, p. 438, 2021.
- [40] P. Drescher, M. Thomas, J. Borris, U. Riedel, and C. Arlt, "Strengthening fibre/matrix interphase by fibre surface modification and nanoparticle incorporation into the matrix," *Composites science and technology*, vol. 74, pp. 60-66, 2013.
- [41] J.-K. Kim and Y.-W. Mai, *Engineered interfaces in fiber reinforced composites*. Elsevier, 1998.
- [42] Liu, Li, Chuyuan Jia, Jinmei He, Feng Zhao, Dapeng Fan, Lixin Xing, Mingqiang Wang, Fang Wang, Zaixing Jiang, and Yudong Huang, "Interfacial characterization, control and modification of carbon fiber reinforced polymer composites," *Composites Science and Technology*, vol. 121, pp. 56-72, 2015.
- [43] L. Gopal and T. Sudarshan, "Surface modification of synthetic polymer fibers," vol. 40, ed: SAGE Publications Sage UK: London, England, 2024, pp. 261-265.
- [44] J. Karger-Kocsis, H. Mahmood, and A. Pegoretti, "Recent advances in fiber/matrix interphase engineering for polymer composites," *Progress in Materials Science*, vol. 73, pp. 1-43, 2015.
- [45] B. Zhang, L. Jia, M. Tian, N. Ning, L. Zhang, and W. Wang, "Surface and interface modification of aramid fiber and its reinforcement for polymer composites: A review," *European Polymer Journal*, vol. 147, p. 110352, 2021.
- [46] Rodríguez-Uicab, O., F. Avilés, P. I. Gonzalez-Chi, G. Canché-Escamilla, S. Duarte-Aranda, M. Yazdani-Pedram, P. Toro et al, "Deposition of carbon nanotubes onto aramid fibers using as-received and chemically modified fibers," *Applied Surface Science*, vol. 385, pp. 379-390, 2016.
- [47] B. Gao, J. Zhang, Z. Hao, L. Huo, R. Zhang, and L. Shao, "In-situ modification of carbon fibers with hyperbranched polyglycerol via anionic ring-opening polymerization for use in high-performance composites," *Carbon*, vol. 123, pp. 548-557, 2017.
- [48] Q. Wu, X. Yang, Q. Wan, R. Zhao, J. He, and J. Zhu, "Layer-by-layer assembled nacre-like polyether amine/GO hierarchical structure on carbon fiber surface toward composites with excellent interfacial strength and toughness," *Composites Science and Technology*, vol. 198, p. 108296, 2020.
- [49] Q. Wu, M. Li, Y. Gu, S. Wang, L. Yao, and Z. Zhang, "Effect of sizing on interfacial adhesion of commercial high strength carbon fiber-reinforced resin composites," *Polymer Composites*, vol. 37, no. 1, pp. 254-261, 2016.
- [50] K. Kim, M. Kim, G. Kim, and D. Kim, "The effect of chemical and thermal treatment for desizing on the properties and chemical functional groups of carbon fiber," *Materials*, vol. 16, no. 20, p. 6732, 2023.
- [51] N. Karim, M. Zhang, S. Afroj, V. Koncherry, P. Potluri, and K. S. Novoselov, "Graphene-based surface heater for de-icing applications," *RSC advances*, vol. 8, no. 30, pp. 16815-16823, 2018.

- [52] R. Balaji and M. Sasikumar, "Graphene based strain and damage prediction system for polymer composites," *Composites Part A: Applied Science and Manufacturing*, vol. 103, pp. 48-59, 2017.
- [53] F. Sarker, N. Karim, S. Afroj, V. Koncherry, K. S. Novoselov, and P. Potluri, "High-performance graphene-based natural fiber composites," *ACS applied materials & interfaces*, vol. 10, no. 40, pp. 34502-34512, 2018.
- [54] N. Karim, F. Sarker, S. Afroj, M. Zhang, P. Potluri, and K. S. Novoselov, "Sustainable and multifunctional composites of graphene-based natural jute fibers," *Advanced Sustainable Systems*, vol. 5, no. 3, p. 2000228, 2021.
- [55] Cao, Can, Jingsong Peng, Xiumin Liang, Eduardo Saiz, Stephan E. Wolf, Hanoch Daniel Wagner, Lei Jiang, and Qunfeng Cheng, "Strong, conductive aramid fiber functionalized by graphene," *Composites Part A: Applied Science and Manufacturing*, vol. 140, p. 106161, 2021.
- [56] S. Xiong, Y. Zhao, Y. Wang, J. Song, X. Zhao, and S. Li, "Enhanced interfacial properties of carbon fiber/epoxy composites by coating carbon nanotubes onto carbon fiber surface by one-step dipping method," *Applied Surface Science*, vol. 546, p. 149135, 2021.
- [57] G. Theiler and T. Gradt, "Environmental effects on the sliding behaviour of PEEK composites," *Wear*, vol. 368, pp. 278-286, 2016.
- [58] Y. Peng and D. Huang, "Fabrication of patterned reduced graphene oxide nanosheet field-emission cathodic film at room-temperature," *Applied surface science*, vol. 283, pp. 81-86, 2013.
- [59] H. Mahmood, M. Tripathi, N. Pugno, and A. Pegoretti, "Enhancement of interfacial adhesion in glass fiber/epoxy composites by electrophoretic deposition of graphene oxide on glass fibers," *Composites Science and Technology*, vol. 126, pp. 149-157, 2016.
- [60] M. Diba *et al.*, "Quantitative evaluation of electrophoretic deposition kinetics of graphene oxide," *Carbon*, vol. 67, pp. 656-661, 2014.
- [61] J. Guo, C. Lu, F. An, and S. He, "Preparation and characterization of carbon nanotubes/carbon fiber hybrid material by ultrasonically assisted electrophoretic deposition," *Materials Letters*, vol. 66, no. 1, pp. 382-384, 2012.
- [62] C. Deng *et al.*, "Influence of graphene oxide coatings on carbon fiber by ultrasonically assisted electrophoretic deposition on its composite interfacial property," *Surface and Coatings Technology*, vol. 272, pp. 176-181, 2015.
- [63] J. Chen, J. Wu, H. Ge, D. Zhao, C. Liu, and X. Hong, "Reduced graphene oxide deposited carbon fiber reinforced polymer composites for electromagnetic interference shielding," *Composites Part A: Applied Science and Manufacturing*, vol. 82, pp. 141-150, 2016.
- [64] H. Zhang, Y. Liu, M. Kuwata, E. Bilotti, and T. Peijs, "Improved fracture toughness and integrated damage sensing capability by spray coated CNTs on carbon fibre prepreg," *Composites Part A: Applied Science and Manufacturing*, vol. 70, pp. 102-110, 2015.
- [65] Xiang, Changsheng, Wei Lu, Yu Zhu, Zhengzong Sun, Zheng Yan, Chi-Chau Hwang, and James M. Tour, "Carbon nanotube and graphene nanoribbon-coated conductive kevlar fibers," *ACS applied materials & interfaces*, vol. 4, no. 1, pp. 131-136, 2012.
- [66] C. Hu, X. Liao, Q.-H. Qin, and G. Wang, "The fabrication and characterization of high density polyethylene composites reinforced by carbon nanotube coated carbon fibers," *Composites Part A: Applied Science and Manufacturing*, vol. 121, pp. 149-156, 2019.
- [67] F. Wang and X. Cai, "Improvement of mechanical properties and thermal conductivity of carbon fiber laminated composites through depositing graphene nanoplatelets on fibers," *Journal of Materials Science*, vol. 54, no. 5, pp. 3847-3862, 2019.
- [68] W. Wang, G. Xian, and H. Li, "Surface modification of ramie fibers with silanized CNTs through a simple spray-coating method," *Cellulose*, vol. 26, pp. 8165-8178, 2019.

- [69] P. Purohit, A. Bhatt, R. K. Mittal, M. H. Abdellattif, and T. A. Farghaly, "Polymer Grafting and its chemical reactions," *Frontiers in Bioengineering and Biotechnology*, vol. 10, p. 1044927, 2023.
- [70] R. Bongiovanni, E. Zeno, A. Pollicino, P. Serafini, and C. Tonelli, "UV light-induced grafting of fluorinated monomer onto cellulose sheets," *Cellulose*, vol. 18, pp. 117-126, 2011.
- [71] M. P. Gashti, J. Willoughby, and P. Agrawal, *Surface and bulk modification of synthetic textiles to improve dyeability*. chapter, 2011.
- [72] J. Chen, D. Zhao, X. Jin, C. Wang, D. Wang, and H. Ge, "Modifying glass fibers with graphene oxide: Towards high-performance polymer composites," *Composites science and technology*, vol. 97, pp. 41-45, 2014.
- [73] Y. Li *et al.*, "Synthesis and characterization of a new hierarchical reinforcement by chemically grafting graphene oxide onto carbon fibers," *Journal of Materials Chemistry*, vol. 22, no. 36, pp. 18748-18752, 2012.
- [74] R.-L. Zhang, B. Gao, Q.-H. Ma, J. Zhang, H.-Z. Cui, and L. Liu, "Directly grafting graphene oxide onto carbon fiber and the effect on the mechanical properties of carbon fiber composites," *Materials & Design*, vol. 93, pp. 364-369, 2016.
- [75] B. Suresha, G. Chandramohan, Siddaramaiah, and T. Jayaraju, "Influence of cenosphere filler additions on the three-body abrasive wear behavior of glass fiber-reinforced epoxy composites," *Polymer composites*, vol. 29, no. 3, pp. 307-312, 2008.
- [76] B. Suresha and G. Chandramohan, "Three-body abrasive wear behaviour of particulate-filled glass–vinyl ester composites," *Journal of materials processing technology*, vol. 200, no. 1-3, pp. 306-311, 2008.
- [77] P. K. Padhi, A. Satapathy, and A. M. Nakka, "Processing, characterization, and wear analysis of short glass fiber-reinforced polypropylene composites filled with blast furnace slag," *Journal of Thermoplastic Composite Materials*, vol. 28, no. 5, pp. 656-671, 2015.
- [78] N. Hameed, P. Sreekumar, B. Francis, W. Yang, and S. Thomas, "Morphology, dynamic mechanical and thermal studies on poly (styrene-co-acrylonitrile) modified epoxy resin/glass fibre composites," *Composites Part A: Applied Science and Manufacturing*, vol. 38, no. 12, pp. 2422-2432, 2007.
- [79] B. Suresha, G. Chandramohan, N. Dayananda Jawali, and Siddaramaiah, "Effect of short glass fiber content on three-body abrasive wear behaviour of polyurethane composites," *Journal of Composite Materials*, vol. 41, no. 22, pp. 2701-2713, 2007.
- [80] S. Biswas and A. Satapathy, "Tribo-performance analysis of red mud filled glass-epoxy composites using Taguchi experimental design," *Materials & Design*, vol. 30, no. 8, pp. 2841-2853, 2009.
- [81] G. Agarwal, A. Patnaik, and R. K. Sharma, "Comparative investigations on three-body abrasive wear behavior of long and short glass fiber-reinforced epoxy composites," *Advanced composite materials*, vol. 23, no. 4, pp. 293-317, 2014.
- [82] A. K. Rout and A. Satapathy, "Study on mechanical and erosion wear performance of granite filled glass-epoxy hybrid composites," *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, vol. 229, no. 1, pp. 38-50, 2015.
- [83] M. Pawar, A. Patnaik, and R. Nagar, "Experimental investigation and numerical simulation of granite powder filled polymer composites for wind turbine blade: a comparative analysis," *Polymer Composites*, vol. 38, no. 7, pp. 1335-1352, 2017.
- [84] S. Kajorncheappunngam, R. K. Gupta, and H. V. GangaRao, "Effect of aging environment on degradation of glass-reinforced epoxy," *Journal of composites for construction*, vol. 6, no. 1, pp. 61-69, 2002.
- [85] K. Balasubramanian, M. T. Sultan, and N. Rajeswari, "Manufacturing techniques of composites for aerospace applications," in *Sustainable composites for aerospace applications*: Elsevier, 2018, pp. 55-67.

- [86] D. Bazrgari, F. Moztaarzadeh, A. Sabbagh-Alvani, M. Rasoulianboroujeni, M. Tahriri, and L. Tayebi, "Mechanical properties and tribological performance of epoxy/Al<sub>2</sub>O<sub>3</sub> nanocomposite," *Ceramics International*, vol. 44, no. 1, pp. 1220-1224, 2018.
- [87] M. Aslan, M. Tufan, and T. Küçükömeroğlu, "Tribological and mechanical performance of sisal-filled waste carbon and glass fibre hybrid composites," *Composites Part B: Engineering*, vol. 140, pp. 241-249, 2018.
- [88] J. Yuan, Z. Zhang, M. Yang, F. Guo, X. Men, and W. Liu, "Carbon nanotubes coated hybrid-fabric composites with enhanced mechanical and thermal properties for tribological applications," *Composites Part A: Applied Science and Manufacturing*, vol. 102, pp. 243-252, 2017.
- [89] C. Li, M. Xiang, and L. Ye, "Intercalation structure and highly enhancing tribological performance of monomer casting nylon-6/graphene nano-composites," *Composites Part A: Applied Science and Manufacturing*, vol. 95, pp. 274-285, 2017.
- [90] Al-Kawaz, Ammar, Anne Rubin, Nezha Badi, C. Blanck, L. Jacomine, I. Janowska, Cuong Pham-Huu, and Christian Gauthier, "Tribological and mechanical investigation of acrylic-based nanocomposite coatings reinforced with PMMA-grafted-MWCNT," *Materials Chemistry and Physics*, vol. 175, pp. 206-214, 2016.
- [91] Li, Peipei, Yaping Zheng, Ting Shi, Yudeng Wang, Mengzhi Li, Chao Chen, and Jiaoxia Zhang, "A solvent-free graphene oxide nanoribbon colloid as filler phase for epoxy-matrix composites with enhanced mechanical, thermal and tribological performance," *Carbon*, vol. 96, pp. 40-48, 2016.
- [92] Y. Li, C. Chen, J. Xu, Z. Zhang, B. Yuan, and X. Huang, "Improved mechanical properties of carbon nanotubes-coated flax fiber reinforced composites," *Journal of materials science*, vol. 50, pp. 1117-1128, 2015.
- [93] E. Omrani, B. Barari, A. D. Moghadam, P. K. Rohatgi, and K. M. Pillai, "Mechanical and tribological properties of self-lubricating bio-based carbon-fabric epoxy composites made using liquid composite molding," *Tribology International*, vol. 92, pp. 222-232, 2015.
- [94] H. Hunke, N. Soin, T. Shah, E. Kramer, K. Witan, and E. Siores, "Influence of plasma pre-treatment of polytetrafluoroethylene (PTFE) micropowders on the mechanical and tribological performance of Polyethersulfone (PESU)-PTFE composites," *Wear*, vol. 328, pp. 480-487, 2015.
- [95] T. Liu, Y. Wang, A. Eyler, and W.-H. Zhong, "Synergistic effects of hybrid graphitic nanofillers on simultaneously enhanced wear and mechanical properties of polymer nanocomposites," *European polymer journal*, vol. 55, pp. 210-221, 2014.
- [96] M. Sudheer, K. Hemanth, K. Raju, and T. Bhat, "Enhanced mechanical and wear performance of epoxy/glass composites with PTW/graphite hybrid fillers," *Procedia materials science*, vol. 6, pp. 975-987, 2014.
- [97] T. Huang, T. Li, Y. Xin, P. Liu, and C. Su, "Mechanical and tribological properties of hybrid fabric-modified polyetherimide composites," *Wear*, vol. 306, no. 1-2, pp. 64-72, 2013.
- [98] B. P. Chang, H. M. Akil, and R. M. Nasir, "Mechanical and tribological properties of zeolite-reinforced UHMWPE composite for implant application," *Procedia Engineering*, vol. 68, pp. 88-94, 2013.
- [99] A. Namdev, A. Telang, and R. Purohit, "Synthesis and mechanical characterization of epoxy hybrid composites containing graphene nanoplatelets," *Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science*, vol. 236, no. 14, pp. 7984-7998, 2022.
- [100] G.-m. Lin, G.-y. Xie, G.-x. Sui, and R. Yang, "Hybrid effect of nanoparticles with carbon fibers on the mechanical and wear properties of polymer composites," *Composites Part B: Engineering*, vol. 43, no. 1, pp. 44-49, 2012.

- [101] V. Aderikha and V. Shapovalov, "Mechanical and tribological behavior of PTFE–polyoxadiazole fiber composites. Effect of filler treatment," *Wear*, vol. 271, no. 5-6, pp. 970-976, 2011.
- [102] V. Aderikha and V. Shapovalov, "Effect of filler surface properties on structure, mechanical and tribological behavior of PTFE-carbon black composites," *Wear*, vol. 268, no. 11-12, pp. 1455-1464, 2010.
- [103] B. Suresha, B. R. Kumar, M. Venkataramareddy, and T. Jayaraju, "Role of micro/nano fillers on mechanical and tribological properties of polyamide66/polypropylene composites," *Materials & Design*, vol. 31, no. 4, pp. 1993-2000, 2010.
- [104] G. Zhang, A. Schlarb, S. Tria, and O. Elkedim, "Tensile and tribological behaviors of PEEK/nano-SiO<sub>2</sub> composites compounded using a ball milling technique," *Composites Science and Technology*, vol. 68, no. 15-16, pp. 3073-3080, 2008.
- [105] F. Aramide, P. Atanda, and O. Olorunniwo, "Mechanical properties of a polyester fibre glass composite," *International Journal of Composite Materials*, vol. 2, no. 6, pp. 147-151, 2012.
- [106] J. H. Al-alkawi, S. D. Al-Fattal, and H. A.-J. Ali, "Fatigue behavior of woven glass fiber reinforced polyester under variable temperature," *Elixir. Mech. Eng*, vol. 53, pp. 12045-12050, 2012.
- [107] Z. Chen, X. Liu, R. Lü, and T. Li, "Mechanical and tribological properties of PA66/PPS blend. III. Reinforced with GF," *Journal of applied polymer science*, vol. 102, no. 1, pp. 523-529, 2006.
- [108] M. Mohbe, P. Singh, and S. Jain, "Mechanical characterization of Na-MMT glass fiber reinforced polyester resin composite," *Int J Emerging Techno Advanced Eng*, vol. 2, no. 12, pp. 702-707, 2012.
- [109] M. A. Faizal, Y. K. Beng, and M. N. Dalimin, "Tensile property of hand lay-up plain-weave woven e-glass/polyester composite: Curing pressure and Ply arrangement effect," *Borneo Sci*, vol. 19, pp. 27-34, 2006.
- [110] L. Leonard, K. Wong, K. Low, and B. Yousif, "Fracture behaviour of glass fibre-reinforced polyester composite," *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, vol. 223, no. 2, pp. 83-89, 2009.
- [111] S. Alam, F. Habib, M. Irfan, W. Iqbal, and K. Khalid, "Effect of orientation of glass fiber on mechanical properties of GRP composites," *Journal of the Chemical Society of Pakistan*, vol. 32, no. 3, pp. 265-269, 2010.
- [112] M. Hossain, M. Hossain, M. Hosur, and S. Jeelani, "Flexural and compression response of woven E-glass/polyester–CNF nanophased composites," *Composites Part A: Applied Science and Manufacturing*, vol. 42, no. 11, pp. 1774-1782, 2011.
- [113] H. Iba, T. Chang, and Y. Kagawa, "Optically transparent continuous glass fibre-reinforced epoxy matrix composite: fabrication, optical and mechanical properties," *Composites Science and Technology*, vol. 62, no. 15, pp. 2043-2052, 2002.
- [114] E. M. Araújo, K. D. Araújo, O. D. Pereira, P. C. Ribeiro, and T. J. de Melo, "Fiberglass wastes/polyester resin composites: mechanical properties and water sorption," *Polímeros*, vol. 16, pp. 332-335, 2006.
- [115] N. Gupta, B. Singh Brar, and E. Woldesenbet, "Effect of filler addition on the compressive and impact properties of glass fibre reinforced epoxy," *Bulletin of Materials Science*, vol. 24, pp. 219-223, 2001.
- [116] B. R. Kumar, B. Suresha, and M. Venkataramareddy, "Effect of particulate fillers on mechanical and abrasive wear behaviour of polyamide 66/polypropylene nanocomposites," *Materials & Design*, vol. 30, no. 9, pp. 3852-3858, 2009.
- [117] M. I. Reddy, U. P. Varma, I. A. Kumar, V. Manikanth, and P. K. Raju, "Comparative evaluation on mechanical properties of jute, pineapple leaf fiber and glass fiber reinforced

- composites with polyester and epoxy resin matrices," *Materials Today: Proceedings*, vol. 5, no. 2, pp. 5649-5654, 2018.
- [118] G. Youssef, G. Pessoa, and S. Nacy, "Effect of elevated operating temperature on the dynamic mechanical performance of E-glass/epoxy composite," *Composites Part B: Engineering*, vol. 173, p. 106937, 2019.
- [119] V. A. Prakash and S. J. Jaisingh, "Mechanical strength behaviour of silane treated E-glass fibre/Al 6061 & SS-304 wire mesh reinforced epoxy resin hybrid composite," *Silicon*, vol. 10, pp. 2279-2286, 2018.
- [120] Maciel, Natalia de Oliveira Roque, Jordana Barreto Ferreira, Janaína da Silva Vieira, Carolina Gomes Dias Ribeiro, Felipe Perissé Duarte Lopes, Frederico Muylaert Margem, Sergio Neves Monteiro, Carlos Maurício Fontes Vieira, and Luís Carlos da Silva, "Comparative tensile strength analysis between epoxy composites reinforced with curaua fiber and glass fiber," *Journal of materials research and technology*, vol. 7, no. 4, pp. 561-565, 2018.
- [121] P.-N. Wang, T.-H. Hsieh, C.-L. Chiang, and M.-Y. Shen, "Synergetic effects of mechanical properties on graphene nanoplatelet and multiwalled carbon nanotube hybrids reinforced epoxy/carbon fiber composites," *Journal of Nanomaterials*, vol. 2015, no. 1, p. 838032, 2015.
- [122] T. Dhilipkumar and M. Rajesh, "Effect of using multiwall carbon nanotube reinforced epoxy adhesive in enhancing glass fiber reinforced polymer composite through cocure manufacturing technique," *Polymer Composites*, vol. 42, no. 8, pp. 3758-3772, 2021.
- [123] Zhang, Xiaoqing, Xinyu Fan, Chun Yan, Hongzhou Li, Yingdan Zhu, Xiaotuo Li, and Liping Yu, "Interfacial microstructure and properties of carbon fiber composites modified with graphene oxide," *ACS applied materials & interfaces*, vol. 4, no. 3, pp. 1543-1552, 2012.
- [124] S. Husić, I. Javni, and Z. S. Petrović, "Thermal and mechanical properties of glass reinforced soy-based polyurethane composites," *Composites science and technology*, vol. 65, no. 1, pp. 19-25, 2005.
- [125] Z. Budai, Z. Sulyok, and V. Vargha, "Glass-fibre reinforced composite materials based on unsaturated polyester resins," *Journal of thermal analysis and calorimetry*, vol. 109, no. 3, pp. 1533-1544, 2012.
- [126] F. A. López Gómez, M. I. Martín Hernández, F. J. Alguacil, T. Álvarez Centeno, J. M. Rincón López, and M. Romero, "Thermolysis of fibreglass polyester composite and reutilisation of the glass fibre residue to obtain a glass-ceramic material," 2012.
- [127] Y. Chen, D. Li, W. Yang, and C. Xiao, "Enhancement of mechanical, thermal and tribological properties of AAPS-modified graphene oxide/polyamide 6 nanocomposites," *Composites Part B: Engineering*, vol. 138, pp. 55-65, 2018.
- [128] X. Qiao, M. Na, P. Gao, and K. Sun, "Halloysite nanotubes reinforced ultrahigh molecular weight polyethylene nanocomposite films with different filler concentration and modification," *Polymer Testing*, vol. 57, pp. 133-140, 2017.
- [129] Y. Zhao *et al.*, "Mechanical, thermal and tribological properties of polyimide/nano-SiO<sub>2</sub> composites synthesized using an in-situ polymerization," *Tribology International*, vol. 103, pp. 599-608, 2016.
- [130] D. Liu, W. Zhao, S. Liu, Q. Cen, and Q. Xue, "Comparative tribological and corrosion resistance properties of epoxy composite coatings reinforced with functionalized fullerene C<sub>60</sub> and graphene," *Surface and Coatings Technology*, vol. 286, pp. 354-364, 2016.
- [131] L. Lin and A. K. Schlarb, "Effect of the varied load conditions on the tribological performance and the thermal characteristics of PEEK-based hybrid composites," *Tribology International*, vol. 101, pp. 218-225, 2016.

- [132] M. A. Samad and S. K. Sinha, "Mechanical, thermal and tribological characterization of a UHMWPE film reinforced with carbon nanotubes coated on steel," *Tribology International*, vol. 44, no. 12, pp. 1932-1941, 2011.
- [133] D. Rathod, M. Rathod, R. Patel, S. Shahabaz, S. D. Shetty, and N. Shetty, "A review on strengthening, delamination formation and suppression techniques during drilling of CFRP composites," *Cogent Engineering*, vol. 8, no. 1, p. 1941588, 2021.
- [134] A. Atiqah, M. Jawaid, S. Sapuan, M. Ishak, and O. Y. Allothman, "Thermal properties of sugar palm/glass fiber reinforced thermoplastic polyurethane hybrid composites," *Composite Structures*, vol. 202, pp. 954-958, 2018.
- [135] Z. Shen, S. Bateman, D. Y. Wu, P. McMahan, M. Dell'Olio, and J. Gotama, "The effects of carbon nanotubes on mechanical and thermal properties of woven glass fibre reinforced polyamide-6 nanocomposites," *Composites Science and Technology*, vol. 69, no. 2, pp. 239-244, 2009.
- [136] A. Yasmin and I. M. Daniel, "Mechanical and thermal properties of graphite platelet/epoxy composites," *Polymer*, vol. 45, no. 24, pp. 8211-8219, 2004.
- [137] K. M. Nair, S. Thomas, and G. Groeninckx, "Thermal and dynamic mechanical analysis of polystyrene composites reinforced with short sisal fibres," *Composites Science and Technology*, vol. 61, no. 16, pp. 2519-2529, 2001.
- [138] S. H. Kim, Y.-J. Heo, M. Park, B.-G. Min, K. Y. Rhee, and S.-J. Park, "Effect of hydrophilic graphite flake on thermal conductivity and fracture toughness of basalt fibers/epoxy composites," *Composites Part B: Engineering*, vol. 153, pp. 9-16, 2018.
- [139] R. Malekimoghadam and U. Icardi, "Prediction of mechanical properties of carbon nanotube-carbon fiber reinforced hybrid composites using multi-scale finite element modelling," *Composites Part B: Engineering*, vol. 177, p. 107405, 2019.
- [140] Z. Eslami, F. Yazdani, and M. A. Mirzapour, "Thermal and mechanical properties of phenolic-based composites reinforced by carbon fibres and multiwall carbon nanotubes," *Composites Part A: Applied Science and Manufacturing*, vol. 72, pp. 22-31, 2015.
- [141] A. Abdelbary, *Wear of polymers and composites*. Woodhead Publishing, 2015.
- [142] W. Pang, Z. Ni, J. Wu, and Y. Zhao, "Investigation of tribological properties of graphene oxide reinforced ultrahigh molecular weight polyethylene under artificial seawater lubricating condition," *Applied Surface Science*, vol. 434, pp. 273-282, 2018.
- [143] B. Wang, Q. Fu, Y. Liu, T. Yin, and Y. Fu, "The synergy effect in tribological performance of paper-based composites by MWCNT and GNPs," *Tribology International*, vol. 123, pp. 200-208, 2018.
- [144] V. Kumar, S. K. Sinha, and A. K. Agarwal, "Tribological studies of epoxy composites with solid and liquid fillers," *Tribology International*, vol. 105, pp. 27-36, 2017.
- [145] S. Yousef, A. Visco, G. Galtieri, D. Nocita, and C. Espro, "Wear behaviour of UHMWPE reinforced by carbon nanofiller and paraffin oil for joint replacement," *Materials Science and Engineering: C*, vol. 73, pp. 234-244, 2017.
- [146] H. Song, B. Wang, Q. Zhou, J. Xiao, and X. Jia, "Preparation and tribological properties of MoS<sub>2</sub>/graphene oxide composites," *Applied Surface Science*, vol. 419, pp. 24-34, 2017.
- [147] E. He, S. Wang, Y. Li, and Q. Wang, "Enhanced tribological properties of polymer composites by incorporation of nano-SiO<sub>2</sub> particles: A molecular dynamics simulation study," *Computational Materials Science*, vol. 134, pp. 93-99, 2017.
- [148] A. Golchin, A. Wikner, and N. Emami, "An investigation into tribological behaviour of multi-walled carbon nanotube/graphene oxide reinforced UHMWPE in water lubricated contacts," *Tribology International*, vol. 95, pp. 156-161, 2016.
- [149] Gao, C. P., G. F. Guo, F. Y. Zhao, T. M. Wang, B. Jim, B. Wetzels, G. Zhang, and Q. H. Wang, "Tribological behaviors of epoxy composites under water lubrication conditions," *Tribology international*, vol. 95, pp. 333-341, 2016.

- [150] Zhao, Fuyan, Guitao Li, Werner Österle, Ines Häusler, Ga Zhang, Tingmei Wang, and Qihua Wang, "Tribological investigations of glass fiber reinforced epoxy composites under oil lubrication conditions," *Tribology international*, vol. 103, pp. 208-217, 2016.
- [151] S. Yan, Y. Yang, L. Song, X. Qi, Y. Xue, and C. Duan, "Tribological behavior of graphite oxide reinforced polyethersulfone composite under drying sliding condition," *Polymer Composites*, vol. 39, no. 7, pp. 2320-2335, 2018.
- [152] L. Zhang, G. Zhang, L. Chang, B. Wetzel, B. Jim, and Q. Wang, "Distinct tribological mechanisms of silica nanoparticles in epoxy composites reinforced with carbon nanotubes, carbon fibers and glass fibers," *Tribology International*, vol. 104, pp. 225-236, 2016.
- [153] G. Zhang, W. Österle, B. Jim, I. Häusler, R. Hesse, and B. Wetzel, "The role of surface topography in the evolving microstructure and functionality of tribofilms of an epoxy-based nanocomposite," *Wear*, vol. 364, pp. 48-56, 2016.
- [154] M. Zalaznik, M. Kalin, S. Novak, and G. Jakša, "Effect of the type, size and concentration of solid lubricants on the tribological properties of the polymer PEEK," *Wear*, vol. 364, pp. 31-39, 2016.
- [155] A. S. Mohammed and M. I. Fareed, "Improving the friction and wear of poly-ether-etherketone (PEEK) by using thin nano-composite coatings," *Wear*, vol. 364, pp. 154-162, 2016.
- [156] W. Österle, A. Dmitriev, B. Wetzel, G. Zhang, I. Häusler, and B. Jim, "The role of carbon fibers and silica nanoparticles on friction and wear reduction of an advanced polymer matrix composite," *Materials & Design*, vol. 93, pp. 474-484, 2016.
- [157] F. Song, Q. Wang, and T. Wang, "Effects of glass fiber and molybdenum disulfide on tribological behaviors and PV limit of chopped carbon fiber reinforced Polytetrafluoroethylene composites," *Tribology International*, vol. 104, pp. 392-401, 2016.
- [158] Yang, Mingming, Junya Yuan, Fang Guo, Kun Wang, Zhaozhu Zhang, Xuehu Men, and Weimin Liu., "A biomimetic approach to improving tribological properties of hybrid PTFE/Nomex fabric/phenolic composites," *European Polymer Journal*, vol. 78, pp. 163-172, 2016.
- [159] Xu, L., Y. Zheng, Z. Yan, W. Zhang, J. Shi, F. Zhou, X. Zhang, J. Wang, J. Zhang, and B. Liu, "Preparation, tribological properties and biocompatibility of fluorinated graphene/ultrahigh molecular weight polyethylene composite materials," *Applied Surface Science*, vol. 370, pp. 201-208, 2016.
- [160] Z. Lin, J. Yang, X. Jia, Y. Li, and H. Song, "Polydopamine/FeOOH-modified interface in carbon cloth/polyimide composites for improved mechanical/tribological properties," *Materials Chemistry and Physics*, vol. 243, p. 122677, 2020.
- [161] N. Zhang, F. Yang, D. Guerra, C. Shen, J. Castro, and J. L. Lee, "Enhancing particle erosion resistance of glass-reinforced polymeric composites using carbon nanofiber-based nanopaper coatings," *Journal of applied polymer science*, vol. 129, no. 4, pp. 1875-1881, 2013.
- [162] S. H. Ibrahim and N. El-Tayeb, "Effect of nano-silica/alumina hybrid coating on erosion resistance of glass fibre-reinforced polymer for the application of wind turbine blades," *Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, vol. 236, no. 10, pp. 2013-2031, 2022.
- [163] M. S. Hasan, T. Wong, P. K. Rohatgi, and M. Nosonovsky, "Analysis of the friction and wear of graphene reinforced aluminum metal matrix composites using machine learning models," *Tribology International*, vol. 170, p. 107527, 2022.
- [164] T. Yu, Z. Li, and D. Wu, "Predictive modeling of material removal rate in chemical mechanical planarization with physics-informed machine learning," *Wear*, vol. 426, pp. 1430-1438, 2019.

- [165] I. H. Sarker, "Machine learning: Algorithms, real-world applications and research directions," *SN computer science*, vol. 2, no. 3, p. 160, 2021.
- [166] A. Borjali, K. Monson, and B. Raeymaekers, "Predicting the polyethylene wear rate in pin-on-disc experiments in the context of prosthetic hip implants: Deriving a data-driven model using machine learning methods," *Tribology international*, vol. 133, pp. 101-110, 2019.
- [167] Z. Kong, O. Beyca, S. T. Bukkapatnam, and R. Komanduri, "Nonlinear sequential Bayesian analysis-based decision making for end-point detection of chemical mechanical planarization (CMP) processes," *IEEE transactions on semiconductor manufacturing*, vol. 24, no. 4, pp. 523-532, 2011.
- [168] D. Chicco, M. J. Warrens, and G. Jurman, "The coefficient of determination R-squared is more informative than SMAPE, MAE, MAPE, MSE and RMSE in regression analysis evaluation," *Peerj computer science*, vol. 7, p. e623, 2021.
- [169] M. Sharma, J. Bijwe, and P. Mitschang, "Abrasive wear studies on composites of PEEK and PES with modified surface of carbon fabric," *Tribology international*, vol. 44, no. 2, pp. 81-91, 2011.
- [170] M. S. Hasan, A. Kordijazi, P. K. Rohatgi, and M. Nosonovsky, "Triboinformatics approach for friction and wear prediction of Al-graphite composites using machine learning methods," *Journal of Tribology*, vol. 144, no. 1, p. 011701, 2022.
- [171] G. Ramesh, K. Subramanian, S. Sathiyamurthy, and M. Prakash, "Calotropis Gigantea fiber-epoxy composites: Influence of fiber orientation on mechanical properties and thermal behavior," *Journal of Natural Fibers*, vol. 19, no. 10, pp. 3668-3680, 2022.
- [172] Z. Razi, M. Islam, and M. Parimalam, "Mechanical, structural, thermal and morphological properties of a protein (fish scale)-based bisphenol-A composites," *Polymer Testing*, vol. 74, pp. 7-13, 2019.
- [173] Shubham and B. C. Ray, "Introduction to composite materials," in *Fiber reinforced polymer (FRP) composites in ballistic protection: microstructural and micromechanical perspectives*: Springer, 2024, pp. 1-20.
- [174] J. Zhang, G. Lin, U. Vaidya, and H. Wang, "Past, present and future prospective of global carbon fibre composite developments and applications," *Composites Part B: Engineering*, vol. 250, p. 110463, 2023.
- [175] B. Huang, "Carbon nanotubes and their polymeric composites: The applications in tissue engineering," *Biomanufacturing Reviews*, vol. 5, no. 1, p. 3, 2020.
- [176] S. Ray, *Applications of graphene and graphene-oxide based nanomaterials*. William Andrew, 2015.
- [177] C. Chia-Ying, "Probing Photosensitization by Functionalized Carbon Nanotubes," 2015.
- [178] E. Chatzi and J. Koenig, "Morphology and structure of Kevlar fibers: a review," *Polymer-Plastics Technology and Engineering*, vol. 26, no. 3-4, pp. 229-270, 1987.
- [179] I. O'Connor, H. Hayden, S. O'Connor, J. N. Coleman, and Y. K. Gun'ko, "Kevlar coated carbon nanotubes for reinforcement of polyvinylchloride," *Journal of Materials Chemistry*, vol. 18, no. 46, pp. 5585-5588, 2008.
- [180] G. Zhang, S. Sun, D. Yang, J.-P. Dodelet, and E. Sacher, "The surface analytical characterization of carbon fibers functionalized by H<sub>2</sub>SO<sub>4</sub>/HNO<sub>3</sub> treatment," *Carbon*, vol. 46, no. 2, pp. 196-205, 2008.
- [181] S. Rahmanian, A. Suraya, R. Zahari, and E. Zainudin, "Synthesis of vertically aligned carbon nanotubes on carbon fiber," *Applied Surface Science*, vol. 271, pp. 424-428, 2013.
- [182] A. Gani, M. Ibrahim, F. Ulmi, and A. Farhan, "The influence of different fiber sizes on the flexural strength of natural fiber-reinforced polymer composites," *Results in Materials*, vol. 21, p. 100534, 2024.
- [183] N. Sharma, S. Kumar, and K. Singh, "Taguchi's DOE and artificial neural network analysis for the prediction of tribological performance of graphene nano-platelets filled glass fiber

- reinforced epoxy composites under the dry sliding condition," *Tribology International*, vol. 172, p. 107580, 2022.
- [184] C. K. Ror, S. Tejyan, and N. Kumar, "Effect of marble dust reinforcement in composites for different applications: A review," *Materials Today: Proceedings*, vol. 60, pp. 1120-1124, 2022.
- [185] M. W. Hisam, A. A. Dar, M. O. Elrasheed, M. S. Khan, R. Gera, and I. Azad, "The versatility of the Taguchi method: Optimizing experiments across diverse disciplines," *Journal of Statistical Theory and Applications*, vol. 23, no. 4, pp. 365-389, 2024.
- [186] S. Mahapatra and A. Patnaik, "Study on mechanical and erosion wear behavior of hybrid composites using Taguchi experimental design," *Materials & Design*, vol. 30, no. 8, pp. 2791-2801, 2009.
- [187] F. Avilés, J. Cauich-Rodríguez, L. Moo-Tah, A. May-Pat, and R. Vargas-Coronado, "Evaluation of mild acid oxidation treatments for MWCNT functionalization," *Carbon*, vol. 47, no. 13, pp. 2970-2975, 2009.
- [188] S. R. Taklimi, A. Ghazinezami, and D. Askari, "Chemical functionalization of helical carbon nanotubes: influence of sonication time and concentrations of sulfuric and nitric acids with 3: 1 mixing ratio," *Journal of Nanomaterials*, vol. 2019, no. 1, p. 2836372, 2019.
- [189] R. Araujo, M. F. Marques, R. Jonas, I. Grafova, and A. Grafov, "Influence of chemical treatment on the morphology and functionalization of carbon nanotubes," *Journal of Nanoscience and Nanotechnology*, vol. 16, no. 1, pp. 1174-1180, 2016.
- [190] U. Tocoglu, M. Alaf, O. Cevher, M. Guler, and H. Akbulut, "The effect of oxidants on the formation of multi-walled carbon nanotube buckypaper," *Journal of nanoscience and nanotechnology*, vol. 12, no. 12, pp. 9169-9174, 2012.
- [191] Q. Guan *et al.*, "Sulfonated multi-walled carbon nanotubes for biodiesel production through triglycerides transesterification," *RSC Advances*, vol. 7, no. 12, pp. 7250-7258, 2017.
- [192] H. Yu, Y. Jin, Z. Li, F. Peng, and H. Wang, "Synthesis and characterization of sulfonated single-walled carbon nanotubes and their performance as solid acid catalyst," *Journal of Solid State Chemistry*, vol. 181, no. 3, pp. 432-438, 2008.
- [193] J. Maity, C. Jacob, C. Das, S. Alam, and R. Singh, "Direct fluorination of Twaron fiber and the mechanical, thermal and crystallization behaviour of short Twaron fiber reinforced polypropylene composites," *Composites Part A: applied science and manufacturing*, vol. 39, no. 5, pp. 825-833, 2008.
- [194] J. Zhao, "Effect of surface treatment on the structure and properties of para-aramid fibers by phosphoric acid," *Fibers and Polymers*, vol. 14, pp. 59-64, 2013.
- [195] G. Derombise, L. Vouyovitch Van Schoors, M. F. Messou, and P. Davies, "Influence of finish treatment on the durability of aramid fibers aged under an alkaline environment," *Journal of Applied Polymer Science*, vol. 117, no. 2, pp. 888-898, 2010.
- [196] F. Guo, Z.-Z. Zhang, W.-M. Liu, F.-H. Su, and H.-J. Zhang, "Effect of plasma treatment of Kevlar fabric on the tribological behavior of Kevlar fabric/phenolic composites," *Tribology International*, vol. 42, no. 2, pp. 243-249, 2009.
- [197] M. Su, A. Gu, G. Liang, and L. Yuan, "The effect of oxygen-plasma treatment on Kevlar fibers and the properties of Kevlar fibers/bismaleimide composites," *Applied Surface Science*, vol. 257, no. 8, pp. 3158-3167, 2011.
- [198] S. Behera, R. K. Gautam, and S. Mohan, "The effect of eco-friendly chemical treatment on sisal fiber and its epoxy composites: thermal, mechanical, tribological and morphological properties," *Cellulose*, vol. 29, no. 17, pp. 9055-9072, 2022.
- [199] T. Xu, J. Tian, L. An, Y. Jiao, Q. Yin, and Y. Tan, "Study on the construction of dopamine/poly (ethyleneimine)/aminoated carbon nanotube multilayer films on aramid fiber surfaces to improve the mechanical properties of aramid fibers/epoxy composites," *ACS omega*, vol. 7, no. 40, pp. 35610-35625, 2022.

- [200] N. Kumar, S. Kumar, J. S. Grewal, V. Mehta, and S. Ali, "Comparative study of Abaca fiber and Kevlar fibers based brake friction composites," *Polymer Composites*, vol. 43, no. 2, pp. 730-740, 2022.
- [201] N. A. Buang, F. Fadil, Z. A. Majid, and S. Shahir, "Characteristic of mild acid functionalized multiwalled carbon nanotubes towards high dispersion with low structural defects," *Digest Journal of Nanomaterials and Biostructures*, vol. 7, no. 1, pp. 33-39, 2012.
- [202] P. J. Harris, *Carbon nanotubes and related structures: new materials for the twenty-first century*. Cambridge university press, 2001.
- [203] Fatin, M. F., A. Rahim Ruslinda, S. Norhafizah, M. A. Farehanim, MK Md Arshad, R. M. Ayub, and U. Hashim, "Oxidation functionalization of multiwalled carbon nanotube by mild acid sonication," in *2014 IEEE Conference on Biomedical Engineering and Sciences (IECBES)*, 2014, pp. 686-689: IEEE.
- [204] B. Suresha, N. Indushekhara, C. Varun, D. Sachin, and K. Pranao, "Effect of carbon nanotubes reinforcement on mechanical properties of aramid/epoxy hybrid composites," *Materials Today: Proceedings*, vol. 43, pp. 1478-1484, 2021.
- [205] Xia, Z., L. Riester, W. A. Curtin, H. Li, B. W. Sheldon, J. Liang, B. Chang, and J. M. Xu, "Direct observation of toughening mechanisms in carbon nanotube ceramic matrix composites," *Acta Materialia*, vol. 52, no. 4, pp. 931-944, 2004.
- [206] M. R. Zakaria, H. M. Akil, M. H. A. Kudus, and S. S. M. Saleh, "Enhancement of tensile and thermal properties of epoxy nanocomposites through chemical hybridization of carbon nanotubes and alumina," *Composites Part A: Applied Science and Manufacturing*, vol. 66, pp. 109-116, 2014.
- [207] C. Xiao, Y. Tan, X. Wang, L. Gao, L. Wang, and Z. Qi, "Study on interfacial and mechanical improvement of carbon fiber/epoxy composites by depositing multi-walled carbon nanotubes on fibers," *Chemical Physics Letters*, vol. 703, pp. 8-16, 2018.
- [208] M. R. Zakaria *et al.*, "Comparative study of single-layer graphene and single-walled carbon nanotube-filled epoxy nanocomposites based on mechanical and thermal properties," *Polymer Composites*, vol. 40, no. S2, pp. E1840-E1849, 2019.
- [209] I. Taraghi, A. Fereidoon, and A. Mohyeddin, "The effect of MWCNTs on the mechanical properties of woven Kevlar/epoxy composites," *Steel Compos. Struct*, vol. 17, no. 6, pp. 825-834, 2014.
- [210] K. J. Kim, J. Kim, W.-R. Yu, J. H. Youk, and J. Lee, "Improved tensile strength of carbon fibers undergoing catalytic growth of carbon nanotubes on their surface," *Carbon*, vol. 54, pp. 258-267, 2013.
- [211] E. Moaseri, M. Karimi, M. Maghrebi, and M. Baniadam, "Two-fold enhancement in tensile strength of carbon nanotube-carbon fiber hybrid epoxy composites through combination of electrophoretic deposition and alternating electric field," *International Journal of Solids and Structures*, vol. 51, no. 3-4, pp. 774-785, 2014.
- [212] V. Srivastava, P. Kumar, T. Quadflieg, and C. Greb, "Friction and wear behavior of GNPs functionalized carbon fiber reinforced polymer matrix composites under high-frequency reciprocating conditions," *Materials Research Express*, vol. 6, no. 12, p. 125357, 2020.
- [213] C. O. Ujah, D. V. V. Kallon, and V. S. Aigbodion, "Tribological properties of CNTs-reinforced nano composite materials," *Lubricants*, vol. 11, no. 3, p. 95, 2023.
- [214] A. Bhosale, M. Walame, and M. Lathesh, "Influence of Different Parameters on the Specific Wear Rate of PTFE Composites in the Steam Environment," in *IOP Conference Series: Materials Science and Engineering*, 2022, vol. 1272, no. 1, p. 012019: IOP Publishing.
- [215] B. Wang, Q. Fu, H. Li, L. Qi, and Y. Lu, "Synergistic effect of surface modification of carbon fabrics and multiwall carbon nanotube incorporation for improving tribological properties of carbon fabrics/resin composites," *Polymer Composites*, vol. 41, no. 1, pp. 102-111, 2020.

- [216] N. Mikhin and K. Lyapin, "Hardness dependence of the coefficient of friction," *Soviet Physics Journal*, vol. 13, pp. 317-321, 1970.
- [217] S. Behera, R. K. Gautam, S. Mohan, and A. Chattopadhyay, "Hemp fiber surface modification: Its effect on mechanical and tribological properties of hemp fiber reinforced epoxy composites," *Polymer Composites*, vol. 42, no. 10, pp. 5223-5236, 2021.
- [218] F. Guo, Z. Z. Zhang, W. m. Liu, F. h. Su, and H. j. Zhang, "Influence of solid lubricant reinforcement on wear behavior of Kevlar fabric composites," *Journal of Applied Polymer Science*, vol. 110, no. 3, pp. 1771-1777, 2008.
- [219] Wulandari, Retno, Fitri Ayu Radini, Muhammad Yunus, Dewi Kusuma Arti, Harianingsih, Dasep Rusmana, and Ade Pratama, "Comparative Study of Commercial Glass Fiber-Reinforced Polyester Composite Beams: Thermal Behavior and Durability to QUV Exposure," *Journal of The Institution of Engineers (India): Series D*, vol. 105, no. 3, pp. 1331-1340, 2024.
- [220] M. Bahgat, A. Farghali, W. El Rouby, and M. Khedr, "Synthesis and modification of multi-walled carbon nano-tubes (MWCNTs) for water treatment applications," *Journal of Analytical and Applied Pyrolysis*, vol. 92, no. 2, pp. 307-313, 2011.
- [221] S. Sabagh, A. A. Azar, and A. R. Bahramian, "High temperature ablation and thermo-physical properties improvement of carbon fiber reinforced composite using graphene oxide nanopowder," *Composites Part A: Applied Science and Manufacturing*, vol. 101, pp. 326-333, 2017.
- [222] P. Jojibabu, G. J. Ram, A. P. Deshpande, and S. R. Bakshi, "Effect of carbon nano-filler addition on the degradation of epoxy adhesive joints subjected to hygrothermal aging," *Polymer Degradation and Stability*, vol. 140, pp. 84-94, 2017.
- [223] J. Cui, Y. Yan, J. Liu, and Q. Wu, "Phenolic resin-MWNT nanocomposites prepared through an in situ polymerization method," *Polymer journal*, vol. 40, no. 11, pp. 1067-1073, 2008.
- [224] Park, Joung-Man, Dong-Jun Kwon, Zuo-Jia Wang, Jeong-U. Roh, Woo-Il Lee, Jong-Kyoo Park, and K. Lawrence DeVries, "Effects of carbon nanotubes and carbon fiber reinforcements on thermal conductivity and ablation properties of carbon/phenolic composites," *Composites Part B: Engineering*, vol. 67, pp. 22-29, 2014.
- [225] W. Qin, C. Chen, J. Zhou, and J. Meng, "Synergistic effects of graphene/carbon nanotubes hybrid coating on the interfacial and mechanical properties of fiber composites," *Materials*, vol. 13, no. 6, p. 1457, 2020.
- [226] B. Kamesh, L. K. Singh, M. K. Kassa, and A. B. Arumugam, "Synergetic effect of incorporating graphene, CNT and hybrid nanoparticles on the mechanical properties of glass fiber reinforced epoxy laminated composites," *Cogent Engineering*, vol. 10, no. 1, p. 2232604, 2023.
- [227] J. Llorente, B. Román-Manso, P. Miranzo, and M. Belmonte, "Tribological performance under dry sliding conditions of graphene/silicon carbide composites," *Journal of the European Ceramic Society*, vol. 36, no. 3, pp. 429-435, 2016.
- [228] F. Azimpour-Shishevan, H. Akbulut, and M. Mohtadi-Bonab, "Synergetic effects of carbon nanotube and graphene addition on thermo-mechanical properties and vibrational behavior of twill carbon fiber reinforced polymer composites," *Polymer Testing*, vol. 90, p. 106745, 2020.
- [229] X. Yao, J. Jiang, C. Xu, L. Zhou, C. Deng, and J. Wang, "Improved interfacial properties of carbon fiber/epoxy composites through graphene oxide-assisted deposition of carbon nanotubes on carbon fiber surface," *Fibers and Polymers*, vol. 18, pp. 1323-1329, 2017.
- [230] B. Park, S. C. Kim, and B. Jung, "Interlaminar Fracture Toughness of Carbon Fiber/Epoxy Composites using Short Kevlar Fiber and/or Nylon-6 Powder Reinforcement," *Polymers for Advanced Technologies*, vol. 8, no. 6, pp. 371-377, 1997.

- [231] N. C. Adak, S. Chhetri, T. Kuila, N. C. Murmu, P. Samanta, and J. H. Lee, "Effects of hydrazine reduced graphene oxide on the inter-laminar fracture toughness of woven carbon fiber/epoxy composite," *Composites Part B: Engineering*, vol. 149, pp. 22-30, 2018.
- [232] A. Sarwar, Z. Mahboob, R. Zdero, and H. Bougherara, "Mechanical characterization of a new Kevlar/Flax/epoxy hybrid composite in a sandwich structure," *Polymer testing*, vol. 90, p. 106680, 2020.
- [233] Z. Gao and L. Zhao, "Effect of nano-fillers on the thermal conductivity of epoxy composites with micro-Al<sub>2</sub>O<sub>3</sub> particles," *Materials & Design (1980-2015)*, vol. 66, pp. 176-182, 2015.
- [234] B. Li, S. Dong, X. Wu, C. Wang, X. Wang, and J. Fang, "Anisotropic thermal property of magnetically oriented carbon nanotube/graphene polymer composites," *Composites Science and Technology*, vol. 147, pp. 52-61, 2017.
- [235] S. Song and Y. Zhang, "Carbon nanotube/reduced graphene oxide hybrid for simultaneously enhancing the thermal conductivity and mechanical properties of styrene-butadiene rubber," *Carbon*, vol. 123, pp. 158-167, 2017.
- [236] Chen, Beibei, Xiang Li, Yuhua Jia, Lin Xu, Hongyu Liang, Xiaofang Li, Jin Yang, Changsheng Li, and Fengyuan Yan, "Fabrication of ternary hybrid of carbon nanotubes/graphene oxide/MoS<sub>2</sub> and its enhancement on the tribological properties of epoxy composite coatings," *Composites Part A: Applied Science and Manufacturing*, vol. 115, pp. 157-165, 2018.
- [237] Min, Chunying, Dengdeng Liu, Chen Shen, Qiaqia Zhang, Haojie Song, Songjun Li, Xiaojuan Shen, Maiyong Zhu, and Kan Zhang, "Unique synergistic effects of graphene oxide and carbon nanotube hybrids on the tribological properties of polyimide nanocomposites," *Tribology International*, vol. 117, pp. 217-224, 2018.
- [238] M. R. Zakaria, M. H. A. Kudus, H. M. Akil, and M. Z. M. Thirmizir, "Comparative study of graphene nanoparticle and multiwall carbon nanotube filled epoxy nanocomposites based on mechanical, thermal and dielectric properties," *Composites Part B: Engineering*, vol. 119, pp. 57-66, 2017.
- [239] X.-J. Shen, X.-Q. Pei, Y. Liu, and S.-Y. Fu, "Tribological performance of carbon nanotube-graphene oxide hybrid/epoxy composites," *Composites Part B: Engineering*, vol. 57, pp. 120-125, 2014.
- [240] A. Namdev, A. Telang, and R. Purohit, "Experimental investigation on mechanical and wear properties of GNP/Carbon fiber/epoxy hybrid composites," *Materials Research Express*, vol. 9, no. 2, p. 025303, 2022.
- [241] L. Yue, G. Pircheraghi, S. A. Monemian, and I. Manas-Zloczower, "Epoxy composites with carbon nanotubes and graphene nanoplatelets—Dispersion and synergy effects," *Carbon*, vol. 78, pp. 268-278, 2014.
- [242] S. H. Yetgin, "Impact of multi-walled carbon nanotube and graphene oxide on abrasive wear performance of polypropylene," *Res Eng Struct Mater*, vol. 7, pp. 157-171, 2021.
- [243] M. Lai, L. Jiang, X. Wang, H. Zhou, Z. Huang, and H. Zhou, "Effects of multi-walled carbon nanotube/graphene oxide-based sizing on interfacial and tribological properties of continuous carbon fiber/poly (ether ether ketone) composites," *Materials Chemistry and Physics*, vol. 276, p. 125344, 2022.
- [244] Chen, Yirong, Jingjing Zhang, Lerong Wang, Qinru Tian, Jiajie Wu, Pengcheng Li, Anfu Chen, Shijun Huang, and Caihong Lei, "Tribological behavior of carbon-fiber-reinforced polymer with highly oriented graphite nanoplatelets," *Tribology International*, vol. 186, p. 108577, 2023.
- [245] M. Sharma, J. Bijwe, E. Mäder, and K. Kunze, "Strengthening of CF/PEEK interface to improve the tribological performance in low amplitude oscillating wear mode," *Wear*, vol. 301, no. 1-2, pp. 735-739, 2013.

- [246] S. Kumar, K. K. Singh, and J. Ramkumar, "Comparative study of the influence of graphene nanoplatelets filler on the mechanical and tribological behavior of glass fabric-reinforced epoxy composites," *Polymer Composites*, vol. 41, no. 12, pp. 5403-5417, 2020.
- [247] E. F. Sukur and G. Onal, "Graphene nanoplatelet modified basalt/epoxy multi-scale composites with improved tribological performance," *Wear*, vol. 460, p. 203481, 2020.
- [248] J. N. Panda, J. Bijwe, and R. K. Pandey, "Variation in size of graphite particles and its cascading effect on the performance properties of PAEK composites," *Composites Part B: Engineering*, vol. 182, p. 107641, 2020.
- [249] S. Jeyaguru, S. M. K. Thiagamani, A. G. Rajkumar, S. M. Rangappa, and S. Siengchin, "Solid particle erosion, water absorption and thickness swelling behavior of intra ply Kevlar/PALF fiber epoxy hybrid composites," *Polymer Composites*, vol. 43, no. 6, pp. 3929-3943, 2022.
- [250] R. Sridhar, H. N. Murthy, G. Angadi, N. Raghavendra, S. Firdosh, and M. Krishna, "Effect of Nanoclay Addition on the Erosion Wear of Glass/vinylester Composites Using Taguchi's Orthogonal Array Technique," *Procedia Materials Science*, vol. 5, pp. 1174-1181, 2014.
- [251] S. Mahapatra, A. Patnaik, and A. Satapathy, "Taguchi method applied to parametric appraisal of erosion behavior of GF-reinforced polyester composites," *Wear*, vol. 265, no. 1-2, pp. 214-222, 2008.
- [252] R. Yadav, H.-H. Lee, A. Meena, and Y. K. Sharma, "Effect of alumina particulate and E-glass fiber reinforced epoxy composite on erosion wear behavior using Taguchi orthogonal array," *Tribology International*, vol. 175, p. 107860, 2022.
- [253] R. Kaundal, A. Patnaik, and A. Satapathy, "Mechanical characterizations and development of erosive wear model for Al<sub>2</sub>O<sub>3</sub>-filled short glass fiber-reinforced polymer composites," *Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications*, vol. 232, no. 11, pp. 893-908, 2018.
- [254] A. B. Rashid, M. Haque, S. M. Islam, and K. R. U. Labib, "Nanotechnology-enhanced fiber-reinforced polymer composites: Recent advancements on processing techniques and applications," *Heliyon*, vol. 10, no. 2, 2024.
- [255] N. Prashanth, "Influence of erodent size, impingement angle and fillers on solid particle erosion wear behaviour of carbon fiber reinforced epoxy composite," in *AIP Conference Proceedings*, 2020, vol. 2204, no. 1: AIP Publishing.
- [256] S. Hiremath, V. Konnur, P. Goggal, and V. Honnutagi, "Effect of nano filler addition on carbon reinforced polymer composite," *Materials Today: Proceedings*, vol. 59, pp. 699-704, 2022.
- [257] S. Rajendran, G. Palani, N. Karthik Babu, A. P. Veerasimman, Y.-L. Yang, and V. Shanmugam, "Solid particle erosion in fibre composites: A review," *Journal of Reinforced Plastics and Composites*, p. 07316844241255007, 2024.
- [258] Feng, Peifeng, Guojun Song, Xu Zhu, Diandong Lv, Yu Zhao, Xiaoping Yang, Nan Li, Luyan Zhang, and Lichun Ma, "Enhanced interfacial adhesion of carbon fiber/epoxy composites by synergistic reinforcement with multiscale "rigid-flexible" structure at interphase," *Composites Part B: Engineering*, vol. 225, p. 109315, 2021.
- [259] Rong, Yujie, Pengyan Zhao, Tong Shen, Jingjing Gao, Shaofeng Zhou, Jin Huang, Guizhe Zhao, and Yaqing Liu, "Mechanical and tribological properties of basalt fiber fabric reinforced polyamide 6 composite laminates with interfacial enhancement by electrostatic self-assembly of graphene oxide," *Journal of Materials Research and Technology*, vol. 27, pp. 7795-7806, 2023.
- [260] Kim, Jae-Woo, John M. Gardner, Godfrey Sauti, Russell A. Wincheski, Benjamin D. Jensen, Kristopher E. Wise, and Emilie J. Siochi, "Multi-scale hierarchical carbon nanotube fiber reinforced composites towards enhancement of axial/transverse strength and fracture toughness," *Composites Part A: Applied Science and Manufacturing*, vol. 167, p. 107449, 2023.

- [261] R. Namdeo, S. Tiwari, and S. Manepatil, "Optimization of high stress abrasive wear of polymer blend ethylene and vinyl acetate copolymer/HDPE/MA-g-PE/OMMT nanocomposites," *Journal of Tribology*, vol. 139, no. 2, p. 021610, 2017.
- [262] B. Muralidhara, S. K. Babu, G. Hemanth, and B. Suresha, "Optimization of abrasive wear behaviour of halloysite nanotubes filled carbon fabric reinforced epoxy hybrid composites," *Surface Topography: Metrology and Properties*, vol. 8, no. 4, p. 045028, 2020.
- [263] M. Cui, S. Ren, S. Qin, Q. Xue, H. Zhao, and L. Wang, "Non-covalent functionalized hexagonal boron nitride nanoplatelets to improve corrosion and wear resistance of epoxy coatings," *RSC advances*, vol. 7, no. 70, pp. 44043-44053, 2017.
- [264] Z. Pawlak, T. Kaldonski, R. Pai, E. Bayraktar, and A. Oloyede, "A comparative study on the tribological behaviour of hexagonal boron nitride (h-BN) as lubricating micro-particles—An additive in porous sliding bearings for a car clutch," *Wear*, vol. 267, no. 5-8, pp. 1198-1202, 2009.
- [265] J. K. Singh and A. K. Rout, "Experimental investigation on tribo-performance of rice husk nanoparticles blend epoxy composites reinforced by *Borassus flabellifer* L. fibre using neural network approach," *Materials Today Communications*, vol. 38, p. 107971, 2024.
- [266] G. Tilly, "A two stage mechanism of ductile erosion," *Wear*, vol. 23, no. 1, pp. 87-96, 1973.
- [267] K. Pool, C. Dharan, and I. Finnie, "Erosive wear of composite materials," *Wear*, vol. 107, no. 1, pp. 1-12, 1986.
- [268] A. Patnaik, A. Satapathy, N. Chand, N. Barkoula, and S. Biswas, "Solid particle erosion wear characteristics of fiber and particulate filled polymer composites: A review," *Wear*, vol. 268, no. 1-2, pp. 249-263, 2010.
- [269] V. Jothiprakash and A. S. Kote, "Improving the performance of data-driven techniques through data pre-processing for modelling daily reservoir inflow," *Hydrological sciences journal*, vol. 56, no. 1, pp. 168-186, 2011.
- [270] B. G. Marcot and A. M. Hanea, "What is an optimal value of k in k-fold cross-validation in discrete Bayesian network analysis?," *Computational Statistics*, vol. 36, no. 3, pp. 2009-2031, 2021.
- [271] A. Agrawal, J. Gans, and A. Goldfarb, *Prediction machines, updated and expanded: The simple economics of artificial intelligence*. Harvard Business Press, 2022.
- [272] J. Schmidt, M. R. Marques, S. Botti, and M. A. Marques, "Recent advances and applications of machine learning in solid-state materials science," *npj computational materials*, vol. 5, no. 1, p. 83, 2019.
- [273] O. I. Abiodun *et al.*, "Comprehensive review of artificial neural network applications to pattern recognition," *IEEE access*, vol. 7, pp. 158820-158846, 2019.
- [274] M. Fratello and R. Tagliaferri, "Decision trees and random forests," *Encyclopedia of bioinformatics and computational biology: ABC of bioinformatics*, vol. 1, no. S3, p. 374, 2018.
- [275] N. Syam and R. Kaul, "Random forest, bagging, and boosting of decision trees," in *Machine Learning and Artificial Intelligence in Marketing and Sales: Essential Reference for Practitioners and Data Scientists*: Emerald Publishing Limited, 2021, pp. 139-182.
- [276] S. Kumar, K. S. K. Singh, and K. Singh, "Data-driven modeling for predicting tribo-performance of graphene-incorporated glass-fabric reinforced epoxy composites using machine learning algorithms," *Polymer Composites*, vol. 43, no. 9, pp. 6599-6610, 2022.
- [277] A. Ziegler and I. R. König, "Mining data with random forests: current options for real-world applications," *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, vol. 4, no. 1, pp. 55-63, 2014.
- [278] J. H. Friedman, "Greedy function approximation: a gradient boosting machine," *Annals of statistics*, pp. 1189-1232, 2001.

- [279] M. Marian and S. Tremmel, "Current trends and applications of machine learning in tribology—A review," *Lubricants*, vol. 9, no. 9, p. 86, 2021.
- [280] N. Nguyen, Z. W. Zhong, and Y. Tian, "An analytical investigation of pad wear caused by the conditioner in fixed abrasive chemical–mechanical polishing," *The International Journal of Advanced Manufacturing Technology*, vol. 77, pp. 897-905, 2015.
- [281] H. Unal, A. Mimaroglu, U. Kadioglu, and H. Ekiz, "Sliding friction and wear behaviour of polytetrafluoroethylene and its composites under dry conditions," *Materials & Design*, vol. 25, no. 3, pp. 239-245, 2004.
- [282] J. Bijwe, C. Logani, and U. Tewari, "Influence of fillers and fibre reinforcement on abrasive wear resistance of some polymeric composites," *Wear*, vol. 138, no. 1-2, pp. 77-92, 1990.
- [283] U. Tewari, J. Bijwe, J. Mathur, and I. Sharma, "Studies on abrasive wear of carbon fibre (short) reinforced polyamide composites," *Tribology International*, vol. 25, no. 1, pp. 53-60, 1992.
- [284] J. Bijwe and R. Rattan, "Influence of weave of carbon fabric in polyetherimide composites in various wear situations," *Wear*, vol. 263, no. 7-12, pp. 984-991, 2007.

## LIST OF PUBLICATIONS

---

### Journal Publication

1. **Mayank Singh**, S Dodla, RK Gautam “Effect of GO, CNTs, and hybrid nanoparticles coated carbon fiber reinforced epoxy composite on erosive wear properties using Taguchi orthogonal array”. **Diamond and Related Materials**: (2025), <https://doi.org/10.1016/j.diamond.2025.112284>
2. **Mayank Singh**, S Dodla, RK Gautam, “Analysis of the Frictional Properties of Carbon nanotubes-coated aramid Fiber-Reinforced Epoxy Composites Using Machine Learning Techniques”. **Journal of Tribology (ASME Journal)**: (2025), <https://doi.org/10.1115/1.4067808>
3. **Mayank Singh**, S Dodla, RK Gautam, “Mechanical and tribological properties of CNTs coated aramid fiber-reinforced epoxy composites”. **Composites Part A: Applied Science and Manufacturing** 179 (2024): 108061. <https://doi.org/10.1016/j.compositesa.2024.108061>
4. **Mayank Singh**, Srihari Dodla, R. K. Gautam, and Vishal Chauhan. "Enhancement of mechanical and tribological properties in glass fiber-reinforced polymer composites with multi-walled carbon nanotubes and ANN-based COF prediction." **Composite Interfaces** (2024): 1-21. <https://doi.org/10.1080/09276440.2024.2417164>
5. **Mayank Singh**, Ritendra Yadav, Rupesh Kumar, Srihari Dodla and Rakesh K. Gautam, “Development and characterization of hybrid polymer composite materials with reinforcement of glass/carbon fibers for enhanced mechanical

properties: an experimental and numerical approach”. **The journal of the Textile Institute**: (2024), <https://doi.org/10.1080/00405000.2024.2386740>

6. **Mayank Singh**, S Dodla, RK Gautam, VK Srivastava, "Effect of load, sliding frequency, and temperature on tribological properties of graphene nanoplatelets coated carbon fiber reinforced polymer composites." **Journal of Composite Materials** 57.1 (2023): 121-132. <https://doi.org/10.1177/00219983221140205>

### **Conferences (Presentation)**

1. **Mayank Singh**, S Dodla, RK Gautam, “Erosion Wear Behavior of Polymer Composites Reinforced with CNTs, GO, and Hybrid Nanoparticle-Coated Carbon Fiber using Taguchi Orthogonal Array”, **12th International Conference on Industrial Tribology, December 19-21, 2024| Fairfield by Marriott, Kolkata, India.**
2. **Mayank Singh**, S Dodla, RK Gautam, “Enhancing Tribological and Mechanical Properties of Glass Fiber-Reinforced Epoxy Composites with CNTs and GNPs using Taguchi DOE”, **12th International Conference on Sustainable Development through Tribology, 5 - 7 October 2023 | NIT Srinagar, Jammu and Kashmir, India.**