

Faculty Profile

Name : Santosh kumar
Designation : Assistant professor
Department : Industrial and Production engineering
Contact Details:
E-mail : santoshkumar.ip@nie.ac.in
Phone : 9986311533



About me: My primary research interests lie in composite materials, particularly focusing on green materials, biodegradable composites, and natural fiber-reinforced composites for sustainable engineering applications. My research aims to explore the use of natural fibers such as rice straw, coir, rice husk, and other eco-friendly reinforcements to develop lightweight, cost-effective, and environmentally sustainable composite materials that can serve as alternatives to conventional synthetic materials.

In addition to this core area, I have a strong interest in design and manufacturing, as many of my master's students undertake research and project work in these domains. I encourage the integration of natural fiber composites with innovative design concepts and modern manufacturing techniques to create practical and sustainable engineering solutions.

Along with my research activities, I actively engage in mentoring and supervising undergraduate and postgraduate students, guiding them in research projects, working models, and innovative product development.

Qualification:

B.E, in Industrial and Production Engineering (VTU)
M.Tech, in Machine Design (Kuvempu University)
Ph.D Pursuing (VTU, Belagavi)

Courses Taught: Mechanics of Materials, Finite Element Methods, Design of Machine Elements, Research Methodology, Elements of Mechanical Engineering, Introduction to Mechanical Engineering, Finite Element Analysis.

Publications:

Journal Publications

1. S. Basavarajappa, S. Manjunath Yadav, **Santosh Kumar**, K. V. Arun & Narendranath S. (2011) Abrasive Wear Behavior of Granite-Filled Glass-Epoxy Composites by SiC Particles Using Statistical Analysis, Polymer-Plastics Technology and Engineering, 50:5, 516-524, <https://doi.org/10.1080/03602559.2010.543734>
2. Yadav, S. M., Arun, K. V., Basavarajappa, S., S, N., & **Kumar, S.** (2011). Collapse mechanism of foam cored sandwich structures under compressive load. Polymer-

3. Basavarajappa, S., Yadav, S. M., Chandrakumar, C., Arun, K. V., & **Kumar, S.** (2011). THE EFFECT OF FILLER ON THE FRICTION PERFORMANCE OF AUTOMOTIVE BRAKE FRICTION MATERIALS. *Journal of Tribology and Surface Engineering*, 2(3/4), 229.
4. **Santoshkumar**, M S Shamprasad and Y S Varadarajan. "Mechanical properties of natural fiber reinforced polylactide composites: A review" In IOP Conference Series: Materials Science and Engineering, 1065 012001 (2021). doi:10.1088/1757-899X/1065/1/012001
5. **Santoshkumar**, M S Shamprasad, Y S Varadarajan, and M A Sangamesha. "Coconut coir fiber reinforced polypropylene composites: Investigation on fracture toughness and mechanical properties" Materials Today: Proceedings 26 February 2021. <https://doi.org/10.1016/j.matpr.2021.01.402>
6. **Santoshkumar**, M S Shamprasad and Y S Varadarajan "Experimental investigation of impact strength and hardness value of rice straw reinforced polylactide composites". Materials Today : Proceedings, <https://doi.org/10.1016/j.matpr.2021.10.038>
7. **Kumar, S.**, Mahadevaswamy, L., Hemaraju, H. R., & Varadarajan, Y. S. (2022). Experimental investigation of three-body abrasive wear behavior of rice husk filled polylactic acid (PLA) composites. *Materials Today: Proceedings*, 52, 599-603. <https://doi.org/10.1016/j.matpr.2021.10.037>
8. **Kumar, S.**, Varadarajan, Y. S., & Shamprasad, M. S. (2023). Three-body abrasive wear behavior of rice straw fibers reinforced PLA composites. *Materials Today: Proceedings*, 92, 322-326. <https://doi.org/10.1016/j.matpr.2023.05.009>
9. **Kumar, S.**, Varadarajan, Y. S., Shamprasad, M. S., Niluvase, N. P., & Madaiah, D. C. (2024). Characterization of Fracture Toughness Properties of Coir Fibre Reinforced Polypropylene Composites. *Journal of Mines, Metals & Fuels*, 72(5). <https://doi.org/10.18311/jmmf/2024/44583>
10. **Kumar, S.**, Varadarajan, Y. S., Shamprasad, M. S., & Niluvase, N. P. (2024). Characterization of Mechanical Properties of Coconut Coir Fibre Reinforced PLA Composites. *Journal of Mines, Metals & Fuels*, 72(5). <https://doi.org/10.18311/jmmf/2024/44563>
11. Chethan, S., Hemanth, B. R., Hemaraju, Jayashree, M., & **Kumar, S.** (2024). Experimental analysis on the impact behaviour of graphite-filled glass fibre reinforced epoxy composites subjected to sea water ageing and notch depth. *Journal of The Institution of Engineers (India): Series D*, 105(2), 969-974.
12. **Kumar, S.**, Divakar, H. N., Veerabhadraswamy, C. M., Nandini, T. S., Beeranur, R., Kumar, H. S., ... & Kallimani, A. K. S. (2025). Investigation of Slurry Erosion Wear Behaviour on Coir-Filled Polypropylene Composites. *Journal of Mines, Metals & Fuels*, 73(5).
13. **Kumar, S.**, Yadwad, A. M., Talikoti, B. S., Maiya, M., Shivaramakrishna, Beeranu, R., & Pujar, N. M. (2025). An experimental study on two-body dry sliding wear

- characteristics of rice straw particle filled polylactic acid composites. *Materials Research Express*, 12(11), 115306. <https://doi.org/10.1088/2053-1591/ae1889>
14. Angadi, S. B., **Kumar, S.**, Nagaral, M., Auradi, V., & Valukula, B. (2025). Effect of ceramic boron carbide particles addition on the mechanical and microstructural characteristics of Al7020 alloy composites. *Mechanics of Advanced Composite Structures*, 12(1), 169-180.
 15. Prashanth, N., Swamy, L. R., & **Kumar, S.** (2025). Tribological Behaviour of Jute/Vinyl Ester Composites Impregnated with Alumina Filler. *Journal of Mines, Metals & Fuels*, 73(2).
 16. ShivaPrakash, S., **Kumar, S.**, Naveen, K. B. K., Madeva, N., Marakal, N., Auardi, V., & Manjunatha, T. H. (2025). Mechanical characterization of alumina and graphite dual particulates reinforced hybrid aluminum alloy (Al2219) matrix composites.
 17. Pujar, N. M., **Kumar, S.**, Rajashekhara, K., Yadav, M., Madaiah, D. C., Dharanish, J., & Chandra, N. S. (2025). An Experimental Investigation on Mechanical and Two Body Abrasive Wear Characteristics of Lignocellulosic Fiber Reinforced Polylactic Acid Sustainable Composites. *Journal of Mines, Metals & Fuels*, 73(8).
 18. Pavan Kumar, B. K., Kumar, N. K., Divya, S. N., Lokesh, M., Shekar, K., **Kumar, S.**, & Yadav, S. M. (2025). Fault Diagnosis of Shaft Misalignment for Rotating Machinery using Artificial Neural Network. *Journal of Mines, Metals & Fuels*, 73(6).
 19. **Santosh kumar**, Aravindrao M. Yadwad, Basavaraj. S. Talikoti, Nagaraj Pujar “Investigation of Fracture Toughness and Mechanical Properties of Rice Husk Fibre Filled Polylactic Acid Composites” Manuscript Id: YTUJENS-2025-1418 Sigma Journal of Engineering and Natural Sciences Accepted
 20. Nagaraj Malleshappa Pujar, **santosh kumar**, Ravikumar Beeranur, Shiva shankara “Low-Velocity Impact Characterization of Wood Particle Filled Jute and Glass Hybrid Epoxy Composites” Manuscript Id: YTUJENS-2025-1419 Sigma Journal of Engineering and Natural Sciences Accepted

Book Chapters

1. Kumar, S., Varadarajan, Y. S., Shamprasad, M. S., Nidarsha, P., & Kalyan, C. M. (2023, December). Coir Fiber-Filled Polylactic Acid Composites: Study of Fracture Toughness and Biodegradable Property. In *International Conference on Smart and Sustainable Developments in Materials, Manufacturing and Energy Engineering* (pp. 265-270). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-63909-8_36

