

Faculty Profile

Name : Dr. Hemanth R	
Designation : Associate Professor	
Department : Mechanical Engineering	
Contact Details: AB315, Second Floor, Admin Block, NIE South campus.	
E-mail : hemanthr@nie.ac.in	
Phone : +919902988135, +919449622046	

About me: Have 6 years+ industrial experience in various capacities and established the process to manufacture tools (jigs, fixtures, moulds, sheet metal stamping tools) and precision components for aerospace and satellites with high performance alloys. Secured 1st Rank (Gold Medal) – M Tech in Tool Engineering for the academic year 2008 – 2010 (VTU). Awarded INSPIRE FELLOWSHIP from DST in the year 2011-2012 to pursue research. Have 21 years+ academic experience teaching diploma, UG and PG levels. Involved in the design of tailor-made training programs and impart training for industry professionals. My Research interests are in the development of novel polymer composites and their characterization for structural and bearing applications.

Qualification:

Dip. in Tool and Die Making (G T & T C, Karnataka)

B.E. (VTU, Belagavi)

MTech (VTU, Belagavi)

Ph.D. (Karunya University, Coimbatore)

Courses Taught:

UG: - Tribology and Bearing Design, Introduction to Artificial Intelligence and its applications, Computer Aided Machine Drawing, Fluid Power System, Elements of Mechanical Engineering, Computer Aided Engineering Drawing.

PG: - Automation in Manufacturing System, Hydraulics and Pneumatics Control System, Introduction to Industrial Internet of Things, Additive Manufacturing, Waste to Energy, Agile manufacturing.

Publications:

Journal Publications

International Journals

1. **R. Hemanth**, A. Tarun, B. Suresha, G. Mallesh, M. G. Dayanand, and S. K. Bhat, “Dual filler synergy in glass fiber-reinforced thermoplastic copolyester elastomer composites: A study on thermo-mechanical behaviour,” Journal of Reinforced Plastics and Composites, vol. 0, no. 0, pp. 1–23, 2026. <https://doi.org/10.1177/07316844261424670>

2. M. S. Vinu Kumar, E. Sakthivelmurugan, **R. Hemanth**, K. Sathish, N. Santhosh, and A. T. Ravichandran, “Experimental investigation on the mechanical behaviour of flax/aluminium

wire mesh reinforced polypropylene hybrid composites,” *Revista Matéria (Rio de Janeiro)*, vol. 30, 2025. <https://doi.org/10.1590/1517-7076-RMAT-2025-0689>

3. **R. Hemanth** et al., “Optimizing solid particle erosion wear behaviour of the flax fiber reinforced epoxy composites: Experimental study with RSM and ANFIS approach,” *Tribology in Industry*, 2026. <https://doi.org/10.24874/ti.2026.09.25.12>

4. S. Srinivas, **R. Hemanth** et al., “Dual nanofiller strategy for enhanced mechanical properties in carbon fiber reinforced polyamide blends,” *Nanotechnology Reviews*, vol. 15, no. 1, Art. no. 20250235, 2026. <https://doi.org/10.1515/ntrev-2025-0235>

5. S. Srinivas, **R. Hemanth**, B. Harshavardhan, G. S. Ananthapadmanabha, and B. Suresha, “Effect of surface treated nanofillers on abrasive wear of carbon fiber/polyamide blend composites,” *Tribology in Industry*, vol. 46, no. 4, pp. 664–676, 2024. <https://doi.org/10.24874/ti.1719.07.24.09>

6. **Punya S.** and **R. Hemanth**, “Development of electric control panel to control a CNC thread milling machine,” *International Journal of Scientific Research in Engineering and Management*, vol. 8, no. 8, pp. 1–5, Aug. 2024.

7. **Punith B. O.** and **R. Hemanth**, “Design and development of the multipurpose agricultural mobile bot,” *International Journal of Engineering Research in Mechanical and Civil Engineering*, vol. 10, no. 9, pp. 6–13, Sept. 2023.

8. B. Suresha, G. Hemanth, **R. Hemanth** and N. P. Lalla, “Role of graphene nanoplatelets and carbon fiber on mechanical properties of PA66 / thermoplastic copolyester elastomer composites,” *Materials Research Express*, vol. 7, no. 1, pp. 1–16, 2020. <https://doi.org/10.1088/2053-1591/ab648d>

9. B. Suresha, **R. Hemanth** et al., “Role of nano-fillers on tribological behaviour of ultra high molecular weight polyethylene composites,” *Materials Today: Proceedings*, vol. 27, pp. 2169–2173, 2020. <https://doi.org/10.1016/j.matpr.2019.09.089>

10. B. Suresha, **Sriraksha**, and **R. Hemanth**, “Mechanical performance of HDPE/UHMWPE hybrid composites and tribological characterization using Taguchi method,” *Materials Today: Proceedings*, vol. 24, pp. 1452–1461, 2020.

11. **G. Hemanth**, B. Suresha, and **R. Hemanth**, “The effect of hexagonal boron nitride on wear resistance under two and three-body abrasion modes of polyetherketone composites,” *Surface Topography: Metrology and Properties*, vol. 7, no. 4, pp. 1–14, 2019. <https://doi.org/10.1088/2051-672X/ab500b>

12. **R. Hemanth**, B. Suresha, and M. Sekar, “Dry sliding wear performance of thermoplastic copolyester elastomer composites,” *Applied Mechanics and Materials*, vol. 895, pp. 38–44, 2019.

13. B. B. Pattanashetty, **R. Hemanth** et al., “Effect of nanofillers on abrasion resistance of carbon fiber reinforced phenolic friction composites,” *Materials Sciences and Applications*, vol. 10, pp. 65–77, 2019.
14. **R. Hemanth**, B. Suresha, and M. Sekar, “Role of fibers and filler on thermal behaviour of thermoplastic copolyester elastomer composites,” *AIP Conference Proceedings*, vol. 2128, Art. no. 020018, 2019.
15. B. Suresha, **R. Hemanth** et al., “Optimization of wear behaviour of boron nitride filled polyaryletherketone composites by Taguchi approach,” *Materials Research Express*, vol. 6, no. 8, 2019.
16. Krishna, B. Suresha, **R. Hemanth**, and Kamaraj, “Solid particle erosion behavior of short glass fiber and particulate reinforced polyoxymethylene/polytetrafluoroethylene composites,” *IJMPERD*, vol. 8, Special Issue 8, pp. 380–388, 2018.
17. P. A. Udaya Kumar, **R. Hemanth** et al., “Mechanical and tribological behavior of vinyl ester hybrid composites,” *Tribology in Industry*, vol. 40, no. 2, pp. 283–299, 2018.
18. P. B. Bharath, B. Suresha, and **R. Hemanth**, “Effect of filler-filler interactions on mechanical properties of phenol formaldehyde-based hybrid composites,” *International Journal of Engineering and Technologies*, vol. 13, pp. 24–38, 2017.
19. B. Suresha, S. M. Vinukumar, and **R. Hemanth**, “Friction and wear performance of cenospheres filled carbon epoxy composites under dry and water lubricated conditions: A comparative study,” *Journal of Manufacturing Technology Research*, vol. 9, no. 3–4, pp. 107–120, 2017.
20. **R. Hemanth**, B. Suresha, and M. Sekar, “Effect of short glass fiber and fillers on friction and wear performance of multi-phased thermoplastic copolyester elastomer composites,” *International Journal of Nanotechnology*, vol. 14, no. 9–11, pp. 893–906, 2017.
21. B. Suresha, **R. Hemanth** et al., “Optimization of testing parameters on two-body abrasive wear behaviour of nano-oMMT filled carbon-epoxy composites based on the Taguchi method,” *International Journal of Nanotechnology*, vol. 14, no. 9–11, pp. 915–929, 2017.
22. **R. Hemanth**, B. Suresha, S.-H. Yang, and M. Sekar, “Abrasive wear behaviour of thermoplastic copolyester elastomer composites: A statistical approach,” *International Journal of Precision Engineering and Manufacturing*, vol. 16, no. 6, pp. 755–763, 2016.
23. **R. Hemanth**, M. Sekar, and B. Suresha, “Abrasive wear behavior of thermoplastic copolyester elastomer composites,” *Emerging Materials Research*, vol. 4, no. 1, pp. 1–11, 2015.
24. **R. Hemanth**, B. Suresha, and M. Sekar, “Physico-Mechanical behaviour of thermoplastic co-polyester elastomer / polytetrafluoroethylene composite with short fibers and microfillers,” *Journal of Composite Materials*, vol. 49, no. 18, pp. 2217–2229, 2015.

25. **R. Hemanth** et al., “Dynamic mechanical analysis and three-body abrasive wear behaviour of thermoplastic copolyester elastomer composites,” *Advances in Tribology*, pp. 1–14, 2014.
26. **R. Hemanth** et al., “Effect of short glass fiber and fillers on dry sliding wear behaviour of thermoplastic copolyester elastomer composites,” *International Journal of Mechanical Engineering and Technology*, vol. 5, no. 9, pp. 71–80, 2014.
27. A. N. Akash and **R. Hemanth**, “Conceptual design of transfer mould tool for rubber bumper spring,” *International Journal of Research in Engineering and Technology*, vol. 3, no. 11, pp. 51–54, 2014.
28. A. N. Akash and **R. Hemanth**, “Design of ejection system in transfer mould tool and justifying material selection of rubber bumper spring component,” *International Journal of Emerging Trends in Science and Technology*, vol. 2, no. 7, pp. 2765–2770, 2015.
29. A. Sampath and **R. Hemanth**, “Conceptual design of injection mold tool for the chair hand rest component,” *International Journal of Research in Engineering and Technology*, vol. 3, no. 3, pp. 791–794, 2014.
30. R. S. Ashwaghosh and **R. Hemanth**, “Conceptual design of injection mould tool for inlet chamber of an air inflator,” *International Journal of Research in Engineering and Technology*, vol. 3, no. 3, pp. 694–698, 2014.

National Journals

31. Krishna, B. Suresha, S. S. Kallesha, and **R. Hemanth**, “Effect of fillers on erosive wear behaviour of polyoxymethylene / polytetrafluoroethylene blend and their composites: A statistical approach,” *Indian Journal of Advances in Chemical Science*, Special Issue S1, pp. 45–51, 2016.
32. **R. Hemanth**, M. Sekar, and B. Suresha, “Effects of fibers and fillers on mechanical properties of thermoplastic composites,” *Indian Journal of Advances in Chemical Science*, vol. 2, pp. 28–35, 2014.

Conference Proceedings

International Conference

1. **R. Hemanth**, B. Suresha, and A. Tarun, “Dynamic mechanical analysis of glass fiber reinforced thermoplastic copolyester elastomer hybrid composites,” *International Conference on Materials, Propulsion and Robotics (ICMPR 2025)*, Bengaluru, India, Jun. 2025.
2. Niharika, Kiran, Jayashankar, Praveen Yadav, Devappa, and **R. Hemanth**, “Advances in fabrication techniques and reinforcement strategies for nano metal matrix composites,” *International Conference on Advances in Mechanical Engineering and Material Sciences (ICAMEMS 2025)*, Mysore, India, Mar. 2025.
3. **R. Hemanth**, A. Tarun, and B. Suresha, “Effect of fiber and fillers on thermal and mechanical behaviour of thermoplastic copolyester elastomer composites,” *International*

Conference on Next Generation Technologies: Design and Manufacturing, IIT Madras, Chennai, India, Nov. 2024.

4. A. Anand, T. Raghavendra, **R. Hemanth**, B. Suresha, P. B. Bharath, and N. Govindaraju, "Two-body and three-body abrasive wear behavior of 3D printed carbon fiber reinforced PLA/ABS composites," International Conference on Eco-Friendly Fibers and Polymeric Materials (EFPM-24), King Mongkut's University of Technology North Bangkok, Thailand, Feb. 2024.

5. **R. Hemanth**, B. Suresha, and M. Sekar, "Role of fibers and fillers on density and wettability of thermoplastic copolyester elastomer composites," International Conference on Advanced Materials and Technology (ICMAT 2020), Mysuru, India, Jan. 2020.

6. B. Suresha, B. Harshavardhan, A. M. Rao, U. R. Koushik, and **R. Hemanth**, "Role of nano-fillers on tribological behaviour of ultra high molecular weight polyethylene composites," International Conference on Materials and Manufacturing Methods (IC3M 2019), NIT Trichy, India, Jul. 2019.

7. **R. Hemanth**, B. Suresha, and M. Sekar, "Role of fiber and fillers on thermal behaviour of thermoplastic copolyester elastomer composites," International Conference on Materials, Manufacturing and Machining (ICMMM 2019), Sathyamangalam, India, Mar. 2019.

8. B. Suresha, R. S. Shenoy, R. Bhat, P. K. Sohan, and **R. Hemanth**, "Optimization of wear behaviour of boron nitride filled polyaryletherketone composites by Taguchi approach," International Conference on Polymer Composites (ICPC 2018), NIT Surathkal, India, Dec. 2018.

9. **R. Hemanth**, B. Suresha, and M. Sekar, "Optimization of tribological parameters in dry sliding wear mode of thermoplastic copolyester elastomer composites," International Conference on Green Trends in Mechanical Engineering Sciences (GTMES 2018), Hassan, India, Oct. 2018.

10. P. J. Pavitra, T. Jayaraju, and **R. Hemanth**, "A review on rolling contact fatigue and shielding of locomotive wheels," International Conference on Innovations in Engineering Technology and Sciences (ICIETS 2018), Mysore, India, Sep. 2018.

11. Chethan. R., **R. Hemanth**, and S. B. Mallur, "A review on substitution of automotive parts from metal to polymer composites," International Conference on Innovations in Engineering Technology and Sciences (ICIETS 2018), Mysore, India, Sep. 2018.

12. B. Suresha and **R. Hemanth**, "Mechanical performance of HDPE/UHMWPE hybrid composites and tribological characterization using Taguchi method," International Conference on Advances in Materials and Manufacturing Applications (IConAMMA 2018), Bengaluru, India, Aug. 2018.

13. Krishna, B. Suresha, **R. Hemanth**, and M. Kamaraj, "Solid particle erosion behavior of short glass fiber and particulate reinforced polyoxymethylene/polytetrafluoroethylene composites," International Conference on Automobile, Marine and Mechanical Engineering (ICAMME 2018), Sriperumbudur, India, May 2018.

14. B. Suresha, K. Shivakumar, and **R. Hemanth**, "Study of the effects of polymer nanofiber on wear behavior of fiber reinforced epoxy nanocomposites in abrasion and fretting wear modes," 26th International Conference on Processing and Fabrication of Advanced Materials (PFAM-XXVI), Chonbuk National University, Jeonju, South Korea, Oct. 2017.
15. A. Ganapathi, **R. Hemanth**, B. Suresha, and R. Roshan, "Effect of short carbon fibers on the friction and wear behavior of polyphenylene sulfide composites," Indo-Brazil Bilateral International Conference on Advanced Materials and Processing, Kalasalingam University, India, Mar. 2017.
16. D. Rani, Sriraksha, **R. Hemanth**, and B. Suresha, "Role of silicon carbide nanoparticles on dry sliding wear behaviour of epoxy composites," International Symposium on Advanced Materials for Engineering Applications (ISAMEA 2017), Mysore, India, Mar. 2017.
17. A. Ganapathi, **R. Hemanth**, B. Suresha, and R. Roshan, "Tribological performance of polyphenylene sulfide composite," International Symposium on Advanced Materials for Engineering Applications (ISAMEA 2017), Mysore, India, Mar. 2017.
18. B. Suresha, K. Shivakumar, and **R. Hemanth**, "Friction and wear behaviour of polymer nanofiber interleaved composite laminates," International Symposium on Advanced Materials for Engineering Applications (ISAMEA 2017), Mysore, India, Mar. 2017.
19. Krishna, B. Suresha, S. S. Kalleth, and **R. Hemanth**, "Effect of fillers on erosive wear behaviour of polyoxymethylene/polytetrafluoroethylene blend and their composites: A statistical approach," International Conference on Advanced Materials and Technology (ICMAT 2016), Mysore, India, May 2016.
20. B. Suresha, R. M. Devarajaiah, M. Singh, and **R. Hemanth**, "Optimization of testing parameters on two-body abrasive wear behaviour of nano-oMMT filled carbon-epoxy composites based on the Taguchi method," Indo-Canadian Symposium on Nano-Science and Technology (ICSNST 2016), Mysore, India, Feb. 2016.
21. **R. Hemanth**, B. Suresha, and M. Sekar, "Effect of short glass fiber and fillers on friction and wear performance of multi-phased thermoplastic copolyester elastomer composites," Indo-Canadian Symposium on Nano-Science and Technology (ICSNST 2016), Mysore, India, Feb. 2016.
22. **R. Hemanth**, M. Sekar, and B. Suresha, "Role of fillers on mechanical properties of selected thermoplastic composites," International Conference on Advancements in Polymeric Materials (APM 2015), IISc Bengaluru, India, Feb. 2015.
23. **R. Hemanth**, B. Suresha, and M. Sekar, "Abrasive wear behaviour of thermoplastic copolyester elastomer composites," International Conference on Advances in Materials and Materials Processing (AMMP 2015), Coimbatore, India, Jan. 2015.
24. **R. Hemanth**, P. S. Thomas, B. Suresha, and M. Sekar, "Effect of short glass fiber and fillers on dry sliding wear behaviour of thermoplastic copolyester elastomer composites," International Conference on Current Trends in Engineering and Management (ICCTEM 2014), Mysore, India, Jul. 2014.

25. **R. Hemanth**, B. Suresha, M. Sekar, and P. Ajagol, "Role of short fibers and micron sized ceramic fillers on three-body abrasive wear behavior of thermoplastic copolyester elastomer/polytetrafluoroethylene blend composites," International Conference on Advances in Tribology (ICAT 2014), NIT Calicut, India, Feb. 2014.

26. **R. Hemanth**, B. Suresha, and M. Sekar, "Characterization of thermoplastic copolyester elastomer/polytetrafluoroethylene blend and their composites," International Conference on Advanced Polymeric Materials (ICAPM 2013), Mahatma Gandhi University, Kottayam, India, Oct. 2013.

27. **R. Hemanth**, M. Sekar, B. Suresha, and P. Ajagol, "Effect of micro-filler additions on the flexure and impact properties of short glass fiber reinforced thermoplastic copolyester elastomer/polytetrafluoroethylene blend composites," International Conference on Advanced Manufacturing, Materials, Management and Thermal Science (AMMMT 2013), Tumkur, India, May 2013.

28. **R. Hemanth**, S. Bhat, and N. Ramesha, "A comparative study of single point and progressive cutting tool during turning operations," International Conference on Advanced Manufacturing, Materials, Management and Thermal Science (AMMMT 2010), Tumkur, India, Nov. 2010.

National Conferences

29. R. Hemanth, **B. Suresha**, T. A. Ragavendra, "Performance of additively manufactured glass fabric reinforced polylactic acid composite laminates," All India Research Scholar Summit (AIRSS-2024), IIT Madras, India, Mar. 2024.

30. P. B. O. Punith and **R. Hemanth**, "Design and development of the multipurpose agricultural mobile bot," National Conference on Mechanical and Automobile Engineering (NCMAE 2023), Bengaluru, India, Jul. 2023.

31. **R. Hemanth**, B. Suresha, and M. Sekar, "Processing and study of mechanical, thermal and tribological behaviour of particulate filled polymer composites," National Conference on Research Advances in Science and Technology (NCRASST 2017), Ooty, India, May 2017.

32. A. N. Akash and **R. Hemanth**, "Conceptual design of transfer mould tool for rubber bumper spring," National Conference on Advancements in Mechanical, Environment, Safety and Health Engineering (NCAMESHE 2014), Salem, India, May 2014.

33. A. N. Akash and **R. Hemanth**, "Design of gate location in transfer mould tool for rubber bumper spring," National Conference on Advances in Mechanical Engineering (NCAME 2014), Bengaluru, India, May 2014.

34. **R. Hemanth**, B. Suresha, and M. Sekar, "Role of fiber, micro and nano-fillers on physico-mechanical behaviour of thermoplastic copolyester elastomer composites," National Conference on Nano Structured Materials (NCNSM 2014), Kottayam, India, Aug. 2014.

35. **R. Hemanth**, B. Suresha, and M. Sekar, "Influence of fillers on mechanical, morphological and thermal properties of glass fiber reinforced thermoplastic copolyester elastomer hybrid

composites,” National Conference on Advances in Polymeric Materials (NCAPM 2014), Mysore, India, Apr. 2014.

Book Chapters

1. R. Hemanth, B. Suresha, “What are microfibrillar and nanofibrillar composites? Basic concept, characterization and application,” in *Micro and Nano Fibrillar Composites (MFCs and NFCs) from Polymer Blends*, Woodhead Publishing (Elsevier), UK, 2017, pp. 57–72.
2. R. Hemanth et al., “Fabrication and tribological behavior of epoxy hybrid composites,” in *Synthesis and Tribological Applications of Hybrid Materials*, Wiley Publications, 2018, pp. 163–196.
3. R. Hemanth et al. “Automotive applications: Reinforced material components,” in *Encyclopedia of Polymer Applications*, 1st ed., Taylor & Francis, 2018. doi: 10.1201/9781351019422-140000314.
4. R. Hemanth et al. “Characterization of mechanical and tribological properties of vinyl ester-based hybrid green composites,” in *Hybrid Fiber Composites: Materials, Manufacturing, Process Engineering*, A. Khan et al., Eds., Wiley Publications, 2020, pp. 217–248, ISBN: 978-3-527-34672-1.
5. R. Hemanth et al. “Synergism of fillers on adhesive and abrasive wear of thermoplastic copolyester elastomer composites,” in *Tribology of Polymer Composites: Characterization, Properties and Applications*, Sanjay et al., Eds., Elsevier Publications, 2020, pp. 321–354, ISBN: 978-0-12-819767-7.
6. R. Hemanth et al. “Thermal properties of the pineapple leaf fiber-based hybrid composites,” in *Natural Fibre-Reinforced Hybrid Polymer Composites: Thermal Properties and Applications*, K. Senthilkumar et al., Eds., Wiley Publications, Germany, 2021. doi: 10.1002/9783527831562.ch7.

Other achievements/information:

- Life member for INDIAN PLASTICS INSTITUTE – MYS-0313-LIFE
- Life member for THE INSTITUTION OF ENGINEERS (INDIA) – G-545222-9
