

Dr. Sachin Tejyan

Assistant Professor

Mechanical Engineering Department,
G B Pant Institute of Engineering and Technology,
Pauri, Uttarakhand- 246194
Contact No.: +91-9520660100
E-mail : tejyan86@gmail.com



Career Objective

I would like to devise captivating, fascinating, and unique practices of teaching that creates interest in the students & render my knowledge, experience, and expertise in all aspects to proper molding of students in terms of teaching and the values and principles of life.

Professional Qualification:

Degree	College / University	Year
Ph.D	National Institute of Technology, Hamirpur (HP)	2015
M. Tech	National Institute of Technology, Hamirpur (HP)	2009
B. Tech (Mechanical Engineering)	UPTU, Lucknow (UP)	2007

Research Interests

- Manufacturing and Production, Composite materials (MMC, PMC), Natural fiber reinforced composites, Friction and wear, Friction stir welding of alloys and composites, Modeling and simulation.

- **Research Area for Doctoral Thesis:**

“Thermo-Mechanical and Erosive Wear Behaviour of Needle-punched Nonwoven Fiber Reinforced Polymer Composites”

For the slurry pipe carrying application needle-punched nonwoven fabric mats were utilized for the fabrication of epoxy based polymer composites. The physical, mechanical, thermal conductivity, visco-elastic and solid particle erosion characteristics of the fabricated composites are reported. The effect of fabric mat loading on erosion rate has been reported also for the needle-punched nonwoven fabric mat reinforced composites. Erosion rate at the different impingement angle and impact velocity has also been reported through solid particle erosion experimental test rig. Taguchi analysis has also been carried out on the basis of Design of experiments (DOE) approach to establish inter-dependency within operating parameters.

Publications

(a) INTERNATIONAL JOURNALS:

1. Amar Patnaik, **Sachin Tejyan** and Amit Rawal, Solid Particle Erosion Behavior of Needle-punched Nonwoven Reinforced Composites, **Research Journal of Textile and Apparel**, Vol. 14, No. 3, pages 12-22, 2010. (**Best paper award 2010**).
2. **Sachin Tejyan**, Amar Patnaik, Amit Rawal, Bhabani K. Satapathy, Structural and Mechanical properties of Needle-Punched Nonwoven Reinforced Composites in Erosive Environment, **Journal of Applied Polymer Science**, Vol. 123, Issue 3, pages 1698-1707, 2012.
3. **Sachin Tejyan**, Amar Patnaik, Tej Singh, Effect of Fibre Weight Percentage on Thermo Mechanical Properties of Needle-punched Nonwoven Reinforced Polymer Composites, **International Journal of Research in Mechanical Engineering & Technology**, Vol. 3, Issue 2, pages 41-44, 2013.
4. **Sachin Tejyan**, Amar Patnaik, Mechanical and Visco-Elastic Analysis of Viscose Fiber based Needle-Punched Nonwoven Fabric Mat Reinforced Polymer Composites Part I, **Journal of Industrial Textile**, Sage, 43: 440-457, 2014.
5. **Sachin Tejyan**, Amar Patnaik, A Taguchi Approach for Investigation of Solid Particle Erosion Response of Needle-Punched Nonwoven Reinforced Polymer Composites Part II, **Journal of Industrial Textile**, Sage, 43: 458-480, 2014.
6. Tej Singh, Vipul Sharma, Ravinder Singh, **Sachin Tejyan**, Brijesh Gangil, Selection of Brake Friction Materials Using Compromise Ranking Method, **Engineering Sciences International Research Journal**, Volume 2 Issue 1, 15-18, 2014.
7. **Sachin Tejyan**, Amar Patnaik, Nonwoven Fabric Mat Reinforced Polymer Composites: A Review, **International Journal of Exploration in Engineering and Technology**, Vol. 1, Issue 1, 51-53, 2015.
8. Shivam Mishra, Abhishek Pandey, Amar Patnaik, **Sachin Tejyan**, Analysis of Tribological Behavior of Fly-Ash & Graphite Reinforced Al7075 Alloy Hybrid Composite by Using Taguchi Method, **International Journal of Exploration in Engineering and Technology**, Vol. 1, Issue 1, 07-13, 2015.
9. Vedant Singh, Sansar Chand Chauhan, **Sachin Tejyan**, Greenhouse Gas Emission Reduction Potentials in Air Transport: A Structural Equation Modelling based Multi-Group Analysis, **Technology Analysis & Strategic Management**, Vol. 29, No. 4, 442–461, 2016.
10. **Sachin Tejyan**, Amar Patnaik, Erosive Wear Behavior and Dynamic Mechanical Analysis of Textile Material Reinforced Polymer Composites, **Polymer Composites**, Vol. 38, Issue 10, Pages: 2201–2211, 2017.
11. **Sachin Tejyan**, Vedant Singh, Erosive Behavior of Polypropylene Fiber Based Needle-punched Nonwoven Reinforced Laminated Composites, **International Advanced Research Journal in Science, Engineering and Technology**, Vol. 4, Special Issue 3, 14-17, 2017.
12. Tej Singh, Ranchan Chauhan, **Sachin Tejyan**, Thermal Stability Analysis Correlation with Fade Performance of Phenolic Based Composite Friction Materials, **International Advanced Research Journal in Science, Engineering and Technology**, Vol. 4, Special Issue 3, 18-20, 2017.

13. **Sachin Tejyan**, Tej Singh, Amar Patnaik, Gusztáv Fekete, Brijesh Gangil, Physico-mechanical and erosive wear analysis of polyester fibre-based nonwoven fabric-reinforced polymer composites, **Journal of Industrial Textile**, Sage, 49 (4), 447-464, 2018.
14. Tej Singh, **Sachin Tejyan**, Amar Patnaik, Vedant Singh, Ibolya Zsoldos, Gusztáv Fekete, Fabrication of waste bagasse fiber reinforced epoxy composites: Study of physical, mechanical and erosion properties, **Polymer Composites**, 40 (9), 3777-3786, 2019.
15. T. Singh, **S. Tejyan**, A. Patnaik, R. Chauhan, G. Fekete, Optimal design of needle-punched nonwoven fiber reinforced epoxy composites using improved preference selection index approach, **Journal of Materials Research and Technology**, 9 (4), 7583-7591, 2020.
16. **S. Tejyan**, N.K. Baliyan, V.K. Patel, A. Patnaik, T. Singh, Polymer green composites reinforced with natural fibers: A comparative study, **Materials Today: Proceedings**, 44, 4767-4769, 2021.
17. A. Gupta, A. Joshi, **S. Tejyan**, B. Gangil, T. Singh, Comparative study of mechanical properties of orange peel filled epoxy composites joined by a mechanical fastener, **Materials Today: Proceedings**, 44, 4671-4676, 2021.
18. **S. Tejyan**, D. Sharma, B. Gangil, A. Patnaik, T. Singh, Thermo-mechanical characterization of nonwoven fabric reinforced polymer composites, **Materials Today: Proceedings**, 44, 4770-4774, 2021.
19. T. Singh, M. Puri, **S. Tejyan**, R.K. Ravi, Abrasive wear and dynamic-mechanical behavior of marble dust filled bagasse fiber reinforced hybrid polymer composites, **Polymer Composites**, 42(6), 2817-2828, 2021.
20. **S. Tejyan**, N. Kumar, T. Singh, Physico-mechanical characterizations of epoxy composites reinforced with lathe waste materials, **Materials Today: Proceedings**, 47, 4326-4329, 2021.
21. N. Kumar, S. Chamoli, **S. Tejyan**, P.K. Pant, A Discrete Linear Stability Analysis Framework for Two-Dimensional Laminar Flows, **WSEAS Transactions on Heat and Mass Transfer**, 16, 34-42, 2021.
22. N. Kumar, **S. Tejyan**, S. Chamoli, P.K. Pant, A discrete linear stability analysis of two-dimensional laminar flow past a square cylinder, **WSEAS Transactions on Fluid Mechanics**, 16, 109-19, 2021.
23. **S. Tejyan**, Effect of erosive parameters on solid particle erosion of cotton fiber-based nonwoven mat/wooden dust reinforced hybrid polymer composites, **Journal of Industrial Textiles**, 51(2), 2514-2532, 2021.
24. **S. Tejyan**, CK Ror, N. Kumar, Mechanical properties of SiC and neem leaf powder reinforced Al-6063 hybrid metal matrix composites, **Materials Today: Proceedings**, 60, 884-888, 2022.
25. C.K. Ror, **S. Tejyan**, N. Kumar, Effect of marble dust reinforcement in composites for different applications: A review, **Materials Today: Proceedings**, 60(2), 1120-1124, 2022.
26. S. Tejyan, S. Rana, A. Patnaik, Effect of HVOF Coatings on Abrasive Wear Behavior of Martensitic Stainless Steel, **International Journal of Material Engineering and Innovation**, 13(3), 238-256, 2022.

27. S. Tejyan, N. Kumar, R.C. Gariya, A.K. Singh, Abrasive Wear Study of Marble Dust Reinforced Al7075 Alloy Surface Composites: Developed by Friction Stir Processing, **International Journal of Material Engineering and Innovation**, 13(3), 222-237, 2022.

(b) INTERNATIONAL/NATIONAL CONFERENCES:

1. **Sachin Tejyan**, Amit Rawal, Amar Patnaik, Erosion wear behavior of needle-punched nonwoven polymer composites: Effect of impingement angle and impact velocity, International conference, 39th Textile Research Symposium at IIT Delhi, December 16-18 2010.
2. **Sachin Tejyan**, Amar Patnaik, Amit Rawal, Solid particle erosion and mechanical properties of nonwoven polypropylene fiber mat reinforced epoxy composites, National Conference on Advances in Polymer Science and Technology (APST) at NIT Hamirpur, 22-24 October, 2010.
3. **Sachin Tejyan**, Amar Patnaik, Tej Singh, Effect of Fibre Weight Percentage on Thermo Mechanical Properties of Needle punched Nonwoven Reinforced Polymer Composites, pp-140-144, 3rd International Conference on Advances in Materials and Manufacturing Technology, Chitkara University, Punjab, India, September 20 – 21st, pp-140-144, 2013.
4. Tej Singh, **Sachin Tejyan**, Brijesh Gangil, Amar Patnaik. A decision making structure for friction material selection problem using a preference selection index method, pp-41-45, 3rd International Conference on Advances in Materials and Manufacturing Technology (AMMT), Chitkara University, Punjab, India, September 20 – 21st, pp- 41-35, 2013.
5. Tej Singh, Amar Patnaik, **Sachin Tejyan**, Brijesh Gangil. Effect of different nano fillers on the tribo-performance of brake friction composite materials. International Conference on nanotechnology in the service of health, environment and society (NanoSciTech) at Panjab University Chandigarh, February 13-15, 2014.
6. **Sachin Tejyan**, Tej Singh, Mechanical characterization of nonwoven reinforced laminated composites by FEM, National conference on interdisciplinary approaches for engineering innovations and scientific developments - impact on society & environment, Manav Bharti University, Solan (H.P.), September 12-13, 2014.
7. Tej Singh, **Sachin Tejyan**, Thermal stability analysis of cement kiln dust (CKD) based composite friction materials, National conference on interdisciplinary approaches for engineering innovations and scientific developments - impact on society & environment, Manav Bharti University, Solan (H.P.), September 12-13, 2014.
8. Tej Singh, Ravinder Singh, Vipul Sharma, **Sachin Tejyan**, Brijesh Gangil. Compatibility of cement kiln dust (CKD) with different phenolic resin for friction braking applications. International conference on advances in engineering and technology (ICAET) at Chandigarh, February 07-08, pp-163-166, 2014.
9. Tej Singh, Kumari Jyoti, Chirag, **Sachin Tejyan**, Synthesis and Characterization of Silver Nanoparticles Using Aqueous Leaf Extract of Raphanus Sativus, International Conference on Emerging and Futuristic Trends in Engineering & Technology, Maharaja Agrasen University, Baddi (H.P.), May 08-09, 2015.
10. **Sachin Tejyan**, Amar Patnaik, Nonwoven Fabric Mat Reinforced Polymer Composites: A Review, International Conference on Emerging and Futuristic Trends in Engineering & Technology, Maharaja Agrasen University, Baddi (H.P.), May 08-09, 2015.

11. **Sachin Tejyan**, Vedant Singh, Erosive Behavior of Polypropylene Fiber Based Needle-punched Nonwoven Reinforced Laminated Composites, DST sponsored International Conference on Cutting Edge and Technological Challenges in Mechanical Engineering, NIET Greater Noida (U.P.), February 18-19, pp- 35-38, 2017.
12. Tej Singh, Ranchan Chauhan, **Sachin Tejyan**, Thermal Stability Analysis Correlation with Fade Performance of Phenolic Based Composite Friction Materials, DST sponsored International Conference on Cutting Edge and Technological Challenges in Mechanical Engineering, NIET Greater Noida (U.P.), February 18-19, pp- 39-41, 2017.
13. **Sachin Tejyan**, Erosion Efficiency and Scanning Electron Microscopy (SEM) of Textile Material Reinforced Polymer Composites, DST sponsored International Conference on Cutting Edge and Technological Challenges in Mechanical Engineering, NIET Greater Noida (U.P.), February 18-19, pp- 58-64, 2017.
14. **Sachin Tejyan**, Mechanical Characterization by Finite Element Analysis of Nonwoven Reinforced Laminated Composites, DST sponsored International Conference on Cutting Edge and Technological Challenges in Mechanical Engineering, NIET Greater Noida (U.P.), February 18-19, pp- 65-69, 2017.
15. Pawan, **Sachin Tejyan**, Design of Retractable three pin plug, DST sponsored International Conference on Cutting Edge and Technological Challenges in Mechanical Engineering, NIET Greater Noida (U.P.), February 18-19, pp- 158-161, 2017.
16. **Sachin Tejyan**, Tej Singh, Ashutosh Gupta, Comparative Analysis on Mechanical Behavior of Jute and Bagasse Fiber Reinforced Polymer Composites, 15th World Conference on Applied Science, Engineering and Technology, Goa, 30th & 31st December 2018.

M.Tech/Ph.D Guidance

1. Guided 05 M.Tech students.
2. Guiding 02 Ph.D Students.

Co-Curricular Activities

1. Attended **Short Term Course** on “**National symposium on – Nano material and Design**” at NIT Hamirpur, 17th Nov. 2007.
2. Attended **one-week Short Term Course** on “**Nanoscale and Technology (NANO)**” at NIT Hamirpur, 31st May 2010 to 4th June 2010.
3. Attended **Short Term Course** on “**Micro and Nano Composites Materials**” organized by Department of Mechanical Engineering, NIT Hamirpur, 30th Dec. 2010 to 01 Jan. 2011.
4. Attended workshop on “**Exploring Science of Transportation Systems**” organized by Department of Mechanical Engineering, NIT Hamirpur, 11th -12th April 2013.
5. Attended **Faculty Training Program** at NIT Hamirpur, 10th -11th August 2013.
6. Attended **Faculty Development Program** at MAU, Baddi, 06th – 07th September 2014.
7. Attended **one-week Short Term Course** on “**Advance Manufacturing**” organized by Department of Mechanical Engineering, NIT Hamirpur, 06th -10th July 2015.

8. Attended **one-week Short Term Training program** on “**Modeling and Simulation of Mechanical Engineering Systems**” organized by Department of Mechanical Engineering, NIET Greater Noida and sponsored by ISTE, delhi, 6th – 10th June, 2016.
9. Attended **one-week Faculty Development Programme** on “**Mechatronics**” organized by Department of Mechanical Engineering, IIMT College of Engineering, Greater Noida (UP), May 30th to June 4th, 2016.
10. Attended **one-week Faculty Development Programme** on “**Developments and Challenges in Materials and Manufacturing processes**” organized by Department of Mechanical Engineering, ITS Engineering College, Greater Noida (UP), 09th to 13th January 2017.
11. Attended **one-week Technical Workshop** on “**Advances in Manufacturing Processes**” sponsored by IEI, India and organized by Department of Mechanical Engineering, NIET Greater Noida (UP), 27th December to 1st January 2017.
12. Attended **one week TEQIP III** sponsored “**Special Summer Workshop**” on “**Active Learning, Autonomy, Academic Governance and R & D**” at IIT Roorkee, 2nd - 6th July 2018.
13. Attended One-week **TEQIP-III** sponsored STC on “**Emerging technologies and soft computing techniques for combating climate change and sustainable development**” organized by Department of Civil Engineering, GBPIET Pauri, 11th -15th November, 2019.
14. Attended One-week online International Faculty Development Programme on “**Block chain and Applications**” organized by Department of Computer Engineer, GBPIET, Pauri, Sponsored by **TEQIP-III**, 20th -24th July, 2020.
15. Attended, Two-week online International Faculty Development Program on “**Experimental and Numerical Methods for Mechanical Engineers**” organized by Department of Mechanical Engineering, GBPIET Pauri, sponsored by **TEQIP-III**, 17th -28th August, 2020.
16. Attended, One-week online Short Term Course on “**Recent Developments in Mechanical Systems**” organized by Department of Mechanical Engineering, GBPIET Pauri, sponsored by **TEQIP-III**, 07th -11th September, 2020.
17. Attended Two-weeks online FDP on “**Recent Advances and Innovations and Design of Structures**” organized by Department of Civil Engineering, GBPIET Pauri, sponsored by **TEQIP-III**, 07th -18th December, 2020.
18. Attended Five Days Faculty Development Program (Online-mode) on “**Experimental and Computational Methods in Fluid Flow and Heat Transfer in Engineering Applications**” sponsored by **AICTE, New Delhi** and organized by **NIT Manipur**, 15th -19th February, 2021.
19. Attended two-week Online Faculty Development Programme on “**ICT Tools for Teaching, Learning Process and Institute**” jointly organized by Electronics and ICT Academies held from **10th – 21st August, 2020** under the “Scheme of financial assistance for setting up of Electronics and ICT Academies” of the Ministry of Electronics and Information Technology (MeitY), Government of India.
20. Attended One-week Online Short Term Course on “**Reliability, Maintainability, and Quality Issues in Process Industries**” Organized by Department of Industrial and Production Engineering, Dr. B. R. Ambedkar NIT Jalandhar from 04th -08th August 2020 under **TEQIP-III**.

21. Attended One-week Online Short Term Course on “**Industry 4.0 and Smart Manufacturing: Opportunities and Challenges**” Organized by Department of Industrial and Production Engineering, Dr. B. R. Ambedkar NIT Jalandhar from 20th -24th July 2020 under TEQIP-III.

Conference/ STC/FDP Organized

1. Organizing Secretary, “**International Conference on Emerging and Futuristic Trends in Engineering and Technology**” at Maharaja Agrasen University, Baddi (H.P.), 08th - 09th May, 2015.
2. Organizing Committee Member, **National Conference on “Management's Next Frontier-The Bharatiya Scriptures Applied**” at Maharaja Agrasen University, Baddi (H.P.), 13th-14th June, 2015.
3. Coordinator, “**Short Term Training Programme on “Modeling and Simulation of Mechanical Engineering Systems**” at NIET, Greater Noida (U.P.) sponsored by ISTE, New Delhi, 06th – 10th June, 2016.
4. Organizing Secretary, “**International Conference on Cutting Edge Technological Challenges in Mechanical Engineering**” at NIET, Greater Noida (U.P.) sponsored by **Department of Science and Technology (DST)**, New Delhi, 18th-19th February, 2017.
5. Coordinator, one-week **Technical Workshop on “Advances in Manufacturing Processes**” at NIET, Greater Noida (UP) sponsored by IEL, India, 27th November to 1st December, 2017.
6. Coordinator, **Smart India Hackathon, 2018** organized by MHRD and AICTE New Delhi, 30th – 31th March, 2018.
7. Organizing Secretary, One-week online Short Term Course on “**Recent Developments in Mechanical Systems**” organized by Department of Mechanical Engineering, GBPIET Pauri, sponsored by **TEQIP-III**, 07th -11th September, 2020.
8. Coordinator, One-week Online Faculty Development Program (FDP) on “**Tools and Scientific communications for research article and proposal writing**” organized by Department of Mechanical Engineering, GBPIET Pauri, sponsored by **TEQIP-III**, 19th -23th September, 2020.

Projects and Consultancy

1. Completed **TEQIP-III, UTU Dehradun** sponsored project entitled “**Mechanical and Wear Behavior of Coated Martensitic Stainless Steel for Hydro Turbine Applications**” (Amount: Rs. 1 Lakh).

Awards

1. Got **Excellent Paper Award 2010** for “Solid particle erosion behavior of the needle-punched nonwoven reinforced composites” from **Research Journal of Textile and Apparel**, Hong Kong.

Expert Speaker/Session Chaired

1. Delivered Expert Lecture on “**Advanced Materials**” in National Workshop on Technological Developments in Engineering Systems and Industries at Career Point University, Hamirpur (H.P.), 26th -27th April, 2013.
2. Delivered Expert Talk on “**Advances and Research Innovations in Engineering & Technology**” at A. P. Goyal Shimla University, Shimla (HP), 17th - 18th November, 2017.
3. Delivered Expert Lecture on “**Modern Manufacturing Processes**” at Manav Bharti University, Solan (HP), 11th March 2017.
4. Session Chair in the National Conference on “**Modern trends in Science and Engineering for Future Technology**” Organized by RIT Roorkee, Sponsored by TEQIP-III, 06th -07th September, 2019.
5. Delivered Expert Talk on “**Nano Composites and Applications**” during one week online international workshop on “**Advancement in Nano-materials and Futuristic Engineering**” Organized by Career Point University, Hamirpur (HP), 18th -22th January, 2021.

Administrative Responsibilities

1. **Officer-In-Charge**, Vehicle Section, GBPIET, Pauri, from 12/09/2018 to till date.
2. **Warden Trishul Hostel**, GBPIET, Pauri, from 02/08/2018 to 22/06/2020.
3. **Warden Kailash Hostel**, GBPIET, Pauri, 22/06/2022 to 18/11/2021.
4. **Officer-In-Charge**, Tribology Lab., Mechanical Engineering Department, GBPIET, Pauri, from 12/10/2020 to till date.
5. **Coordinator**, Unnat Bharat Abhiyan, GBPIET, Pauri, from September 2020 to till date.
6. **Coordinator**, Departmental Audit Committee, GBPIET, Pauri, from 12/07/2019 to till date.
7. **Dy. Coordinator (Academics)**, DAAC, Mechanical Engineering Department, GBPIET, Pauri, from 14/10/2020 to till date.

Professional Membership

1. Senior Member of **IRED** (Institute of Research Engineers and Doctors).
2. Member of **IAENG** (International Association of Engineers).
3. Life Member of **ISTE** (Indian Society of Technical Education), New Delhi.
4. Associate Member of **ImechE**.

Professional Activities

1. Reviewer, **Journal of Industrial Textile**, Publisher Sage.
2. Reviewer, **Silicon Journal**, Publisher Springer.
3. Reviewer, **Polymer Composites**, Publisher Wiley.
4. Reviewer, **Advance in Mechanical Engineering**, Publisher Sage.
5. Reviewer, **International Journal of Sustainable Engineering**, Publisher T & F.
6. Reviewer, **Materials Today: Proceedings**, Publisher Elsevier.

7. Reviewer, **Material Science and Engineering Technology**, Publisher T & F.

(Sachin Tejyan)