**CHHATRAPATI SHIVAJI MAHARAJ INSTITUTE OF TECHNOLOGY**

**DEPARTMENT OF MECHANICAL ENGINEERING**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of the Faculty** | Dr. Baljit Singh | |  | | --- | | E:\Desktop\MY CV\New folder\Baljit_Associate Professor Mechanical Engineering.jpg | |
| **Designation** | Head of Department |
| **Aadhar ID** | 6330-8396-3292 |
| **No.of B.Tech Project Guided** | 17 |
| **No. of M. Tech Project Guided** | 5 |
| **Area of Specialization** | Mechanical Engineering (Design & Automation) | |
| **UG Degree** | B. Tech (Mechanical Engineering) from Uttar Pradesh Technical University | |
| **PG Degree** | M. Tech (Nano-Material) from Babasaheb Bhim Rao Ambedkar University | |
| **Ph.D** | Mechanical Engineering (Effect of Nanodiamonds on Mechanical and Thermal Properties of Epoxy Nanocomposites) Vellore Institute of Technology | |
| **Total Experience** | **Teaching: 5** | **Research: 4** |
| **No. of Journals (SCI & Scopus)** | 14 (4-SCI, 7-SCOPUS & 3-Under Review ) | |
| **No. of Patents Published** | 1 | |
| **Roles and Responsibilities** | R&D Coordinator (CSMIT) & NAAC Criteria-3 Incharge | |
| **Guest Lecture Delivered** | Guest Lecture Delivered on **Effective Research Writing** on 3rd March 2024 in Shree Dhanvantry College Engineering & Technology, Surat. | |
| **Post-doc Fellow** | Faculty Research Fellowship Program (IIT-Delhi)  Duration- 16 May 2023 to 15 July 2023 | |
| **AICTCE ATAL FDP** | 1. Artificial Intelligence for Science and Engineering 2. Recent Advances and Applications of Manufacturing in Industries 4.0 3. Advanced Materials: A Paradigm Shift in Modern Technologies 4. Nanomaterials and its applications 5. AI Evolution: "From Foundations to Generative AI” | |
| **Area of Interest:** | | |
| Surface Modification of Nanocomposite. Synthesis and characterization of Nanocomposite, Mechanical, Rheology, & Thermal analysis of Polymer Nanocomposite. | | |
| **About My Research work** | | |
| My research work continued to flourish in the field of synthesis of Nanomaterials for energy applications at Babasaheb Bhimrao Ambedkar University (A Central University) Lucknow where, I got associated with Master of Technology (M. Tech) in Nano-opto electronic (2014-2016). During M. Tech, I have started baby steps of research by synthesizing ceramic nanomaterials that was used to develop high-performance electrode for super-capacitor applications. To advance my research forward, I continued as Ph.D scholar (2016-2022) in the Vellore Institute of Technology in the department of Mechanical Engineering. Right since then, I have rich experience in Surface Modification of Nanomaterials (By Chemical and Physical route) and its characterization, fabrication of Nanocomposites at the appropriate nanoscale as per the application requirements. I carried out the surface modification of Nanomaterials through physical and chemical method (Nanodiamond, Graphene, Carbon nanotubes) to fabricate high-end structural Nanocomposites with high storing efficiency. Also, I have in-depth understanding about physical modification and its effect on crystal structure and hybridizations of Nanomaterials. I have performed various characterization techniques like, FE-SEM, TEM, XRD, FTIR, Raman spectroscopy and UV-visible spectroscopy for detailed studies of Nanomaterials and Nanocomposites. To scale up my research, I was associated with different labs (IIT Bombay, CLRI Chennai, CIPET Chennai & ) to develop Hybrid-Nanocomposites for commercial purpose. | | |