**CHHATRAPATI SHIVAJI MAHARAJ INSTITUTE OF TECHNOLOGY, PANVEL**

**DEPARTMENT OF MECHANICAL ENGINEERING**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of the Faculty** | Mr. Abhay Bendekar | |  | | --- | | C:\Users\lenovo\Desktop\Abahy BUTR\Abhay Photo.jpeg | |
| **Designation** | Assistant Professor |
| **Aadhar ID** | 7100-7953-8666 |
| **No.of B.Tech Project Guided** | 12 |
| **No.of M.Tech Project Guided** | 0 |
| **Area of Specialization** | Thermal Engineering | |
| **UG Degree** | BE (Mechanical Engineering) from RTM Nagpur University | |
| **PG Degree** | M. Tech (Mechanical Engineering) from Mumbai University | |
| **PhD** | Pursuing Topic: Design and Optimization of Magnesium based metal hydride reactor. | |
| **Total Experience** | **Teaching: 19** | **Industry: 2** |
| **No. of Journals (National & International)** | 15 | |
| **No. of Patents Published** | 6 | |
| **Roles and Responsibilities** | NAAC-Criteria 1 In-charge, NPTEL SPOC. | |
| **Guest Lecture Delivered** |  | |
| **FDP’s Conducted** |  | |
| **NPTEL** | 1. NPTEL Elite Certification in Operations Management 2. NPTEL Elite with Silver Certification in Research Methodology and IPR | |
| **Area of Interest:** | | |
| Heat Transfer, Hydrogen Energy, Refrigeration and Air Conditioning and Resarch Methodology | | |
| **About My Research work** | | |
| Hydrogen is a clean and renewable energy carrier with potential applications in various sectors, including transportation, grid storage, and industrial processes.  The research in Hydrogen Technology has five verticals which are Production,  Transportation, Storage, Compression, and Safety. Due to low density of hydrogen, there  are many challenges reported in its storage. I have taken the challenge to build an efficient  hydrogen storage system.  Conventional hydrogen storage methods are compressed gas, and liquid hydrogen are facing  challenges related to high operating conditions, safety, energy density, and efficiency. Hence  the solid state hydrogen storage systems could be the solution.  Metal hydrides provide a solid-state hydrogen storage alternative with high volumetric  density and improved safety features. Metal hydrides are capable of absorbing and desorbing hydrogen under moderate temperature and pressure conditions. But hydrogenation and dehydrogenation are exothermic and endothermic reactions which make difficult to absorb hydrogen or desorb hydrogen due to non-uniform temperature conditions. By identifying this research gap, I have chosen to design, develop and optimize Magnesium  based metal hydride system. | | |