SRM Institute of Science and Technology (formerly known as ‘SRM University’) is located in an extensive sylvan campus of 380 acres skirting the National Highways (NH145), in the outskirts of Chennai. SRMIST is one of the top-ranking Universities and most premier engineering destinations in India, which was established in 1985 by the Founder Chancellor, Dr. T. R. Paarivendhar. Now it is functioning in campuses located at Kattankulathur, Ramapuram, Ramapuram Part (Vadapalani) in Chennai, Tiruchirappalli and one in Modi Nagar, Ghaziabad with over 52000 students and 3200 faculty members, offering a wide range of undergraduate, postgraduate and doctoral programs in Engineering, Management, Medicine & Health Sciences, Agriculture, Law and Science & Humanities. The Institution has moved up through international alliances and collaborative initiatives to achieve global excellence. SRMIST also collaborates with various foreign Universities. Now the Institute enjoys an unsurpassed reputation in academic and corporate circles being the preferred manpower source for realizing the vision to be recognized as a world-class learning institution. SRMIST has been accorded Category I status by MHRD-UGC of Government of India and also accredited by NAAC with ‘A++’ Grade in the year 2018.

Vision of the Institute

To emerge as a World-Class University in creating and disseminating knowledge, and providing students a unique learning experience in Science, Technology, Medicine, Management and other areas of scholarship that will best serve the world and betterment of mankind.

Mission of the Institute

- MOVE UP through international alliances and collaborative initiatives to achieve global excellence.
- ACCOMPLISH A PROCESS to advance Knowledge in a rigorous academic and research environment.
- ATTRACT AND BUILD PEOPLE in a rewarding and inspiring environment by fostering freedom, empowerment, creativity and innovation.
The Department of Mechanical Engineering is one of the pioneering departments of SRMIST. The department is functionally divided into three broad areas of specialization: (i) Design (ii) Manufacturing and (iii) Thermal. B.Tech Mechanical Engineering program offered at Kattankulathur campus is accredited by Engineering Accreditation Commission (EAC) of ABET, USA, (www.abet.org). The department also offers M.Tech. and Doctoral programs in various specializations. The present faculty strength is 115.

**Vision of the department**

To impart knowledge to our students in an ambience of Humanity, Wisdom, Intellect, Creativity of Innovation, in order to nurture them culturally and Ethically rich professionals with bright future.

**Mission of the department**

- To impart quality education to produce mechanical engineers and enhance their skills to become world renowned professionals
- To establish Centers of Research Excellence to inculcate research acumen in faculty and students on the areas like; machining, biomechanics, bio-fuels, composites, and energy
- To provide state-of-the-art education and training programs to the faculty and student fellowship
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The science and technology of composite materials

When two or more materials with different physical and chemical properties are combined to create composites materials they become stronger and lighter. Composite materials are being used for thousands of years in the form of glued wood strips to make plywood, linen or papyrus soaked in plaster to make death masks, and composite bows used by Mongols. From the middle of the last century, the use of fiber reinforced composites started increasing fast. Now in the domain of engineering materials, composites are being used having matrices of polymers, ceramics or metals having fibers, whiskers or particulates as the reinforcing phase. Even reinforced concretes, engineered woods, plywood and sandwich panels are examples of composite materials. The applications of composite encompass both the domains of structural and functional materials.
About the Centre for Composites and Advanced Materials

To augment both experimental and computational research in the domain of composite and advanced materials, including advanced manufacturing processes, a Centre for Composites and Advanced Materials has been created within Department of Mechanical Engineering, SRM IST, Kattankulathur campus. The Centre has three different laboratories,

(i) Composite and Advanced Materials Manufacturing Lab
(ii) Materials Modelling and Simulation Lab
(iii) Functional and Biomaterials Engineering Lab.

Vision of the Centre

To become a globally recognised centre for stimulating innovative research, development, education, and leadership in the interdisciplinary field of composites and advanced materials to the students and for imparting professional and human values for the upliftment of the society.

Mission of the Centre

- To promote interdisciplinary research in the field of composite and advanced materials in collaboration with national and international research groups.
- To provide education and training on diverse fields of material engineering to the students, faculty and industry personnel.
- To create world class design, manufacturing and testing facilities to meet the requirements of the stake holders and to strengthen the interaction with industry.
Composite and Advanced Materials Manufacturing Lab

Dr. M. Kamaraj
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Research areas

- Fiber reinforced composites
- Nano and hybrid composites
- Biomaterials and bio-composites
- Friction materials
- Light alloys and composites
- Metallic foams
- High entropy alloys
### Manufacturing Facilities

**Microwave furnace**
- Internal dimension – 366 mm x 367 mm x 386 mm
- Maximum temperature - 1650 °C

**Compression moulding machine**
- Platen size – 500 mm x 500 mm,
- Temperature – 300 °C,
- Capacity – 150 ton,
- Maximum operating pressure – 200 bar/3000 psi.

**Planetary mono classic line**
- **PULVERISETTE 6**

**Tube furnace**
- Maximum operating temperature – 1200 °C,

**Hot press**
- Capacity of the press - 30 tons,
- Die heater temperature-500 °C

**Hot air oven**
- Maximum operating temperature – 1200 °C,
Functional and Biomaterials Engineering Lab

Research areas

- Electroactive polymers
- Self-healing materials
- Magnetic hydrogels
- Sensor materials
Dr. P. V. Jeyakarthikeyan
Associate Professor
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Research areas

- Design of composites and components
- Numerical simulations of microstructure
- Multi-scale materials modelling
- Integrated Computational Materials Engineering (ICME)
- Materials design using Artificial Intelligence and Machine Learning

Materials Modelling and Simulation Lab
Relevant Central Facilities

Hi-Resolution Transmission Electron Microscope (HRTEM)
X-Ray Photoelectron Spectroscopy (XPS)
X-Ray Diffractometer
Hi-Resolution Scanning Electron Microscope (HRSEM)
Field Emission Scanning Electron Microscope (FE-SEM)
Scanning Probe Microscope
UV-Visible Spectrophotometer
Fourier Transform Infrared Spectroscopy (FTIR)
DC/RF Sputtering
E-Beam evaporation
Pulsed Laser Deposition
Arc Melting Furnace
Stir Casting Furnace
Induction Furnace
We are open to collaborative research with all academic institutions, research laboratories and industries.

Thank You