

Chief Patrons

Dr. T. R. Paarivendhar, Chancellor, SRMIST
Dr. Ravi Pachamoothoo, Pro - Chancellor (Administration), SRMIST
Dr. P. Sathyanaarayanan, Pro - Chancellor (Academics), SRMIST
Dr. R. Shivakumar, Vice President, SRMIST
Dr. C. Muthamizhchelvan, Vice Chancellor, SRMIST
Dr. S. Ponnusamy, Registrar, SRMIST

Patron

Dr. M. Leenus Jesu Martin, Dean-CET, SRMIST
Dr. Prabhakar Subrahmanyam, Senior Staff Scientist / Distinguished Engineer, Dell Technologies, CA, U.S.A. Visiting Professor, SRMIST.
Dr. Parani Madasamy, Chairperson, School of Bio Engineering
Dr. Revathi Venkataraman, Chairperson, School of Computing
Dr. Vijayakumar K., Chairperson, School of Electrical and Electronics Engineering
Dr. Cheralathan M., Chairperson, School of Mechanical Engineering
Dr. Arthanareeswari M., Chairperson, School of Basic Sciences
Dr. M. Pushpalatha, Associate Chair Persons, School of Computing
Dr. C. Lakshmi, Associate Chair Persons, School of Computing
Dr. S. Sahabudeen, Head of Department, Biotechnology
Dr. Vishali S., Head of Department, Chemical Engineering
Dr. U. Snehalatha, Head of Department, Biomedical Engineering
Dr. S. Kirankumar, Head of Department, Genetic Engineering
Dr. Periyar Selvam S., Head of Department, Food Process Engineering

Dr. Niranjana G., Head of Department, Computing Technologies
Dr. M. Lakshmi, Head of Department, Networking and Communications
Dr. Annie Uthra R., Head of Department, Computational Intelligence
Dr. Kavitha V., Head of Department, Data Science and Business Systems
Dr. Sridhar R., Head of Department, Electrical and Electronics Engineering
Dr. Sangeetha M., Head of Department, Electronics and Communication Engineering
Dr. Joselin Retna Kumar G., Head of Department, Electronics & Instrumentation Engineering
Dr. Suresh Kumar K., Head of Department, Mechanical Engineering
Dr. Kamalakkannan K., Head of Department, Automobile Engineering
Dr. Ganapathy Subramanian L R., Head of Department, Aerospace Engineering
Dr. T. Muthuramalingam, Head of Department, Mechatronics Engineering
Dr. Geetha K., Head of Department, Architecture
Dr. Ravichandran P T., Head of Department, Civil Engineering
Dr. Prakash Muthuramalingam, Head of Department, Chemistry
Dr. Ritesh Kumar Dubey, Head of Department, Mathematics
Dr. E. Senthil Kumar, Head of Department, Physics
Dr. Kavitha Nair L., Head of Department, English and Foreign Languages
Dr. Karthik Lakshmanan, Senior Staff Engineer, Google, USA.

Convenor

Dr. B. K. Gnanavel, Prof. & Head, Center of Excellence for Electronic Cooling and CFD Sim Lab

Co-Convenors

Dr. R. Senthil Kumar, Research Assistant Professor Dept. of Mechanical Engineering

Dr. S. Manikandan, Assistant Professor Dept. of Mechanical Engineering
Dr. P. Sudhakar, Assistant Professor Dept. of Mechanical Engineering
Dr. D. Premnath, Assistant Professor Dept. of Mechanical Engineering
Dr. V. Praveena, Assistant Professor Dept. of Mechanical Engineering
Dr. Santhosh Kumar Singh, Assistant Professor Dept. of Mechanical Engineering
Dr. Anusuya K., Assistant Professor Dept. of Mechanical Engineering

CFD Engineers / CAD Engineers

Mr. K. Sasikumar, CAD Engineer
Dr. Unnikrishnan K S, CFD Engineer

Department Faculty Coordinators

Dr. K. K. Bharadwaj, Assistant Professor, Dept. of Aerospace Engineering
Mr. G. Naresh, Assistant Professor, Dept. of Automobile Engineering
Dr. Rohit Gupta, Assistant Professor, Dept. of Biomedical Engineering
Dr. M. Venkatesh Prabhu, Assistant Professor, Dept. of Biotechnology
Dr. K. Anbalagan, Assistant Professor, Dept. of Chemical Engineering
Dr. C. Arun Kumar, Assistant Professor, Dept. of Civil Engineering
Dr. R. Brindha, Assistant Professor, Dept. of Computational Intelligence.
Dept. Computing Technologies. Dept. Data Science and Business Systems.
Dept. Networking and Communications.
Dr. C. Naveen, Assistant Professor, Dept. of Electrical & Electronics Engineering.
Dr. Rajesh Agarwal, Associate Professor, Dept. of Electronics & Communication Engineering.
Dr. K. Vibha, Assistant Professor, Dept. of Electronics & Instrumentation Engineering.
Dr. S. K. M. Habeeb, Associate Professor, Dept. of Genetic Engineering
Dr. S. Manikandan, Assistant Professor, Dept. of Mechanical Engineering

Dr. S. Senthil Raja, Assistant Professor, Dept. of Mechatronics Engineering
Dr. Elangovan Elamurugu, Assistant Professor, Dept. of Physics and Nanotechnology
Ar. Raja Muthaiah, Associate Professor, School of Architecture and Interior Design.

Trained Faculty Members at the Center

Dr. B. K. Gnanavel, Professor of Mechanical Engineering
Dr. R. Senthil, Associate Professor, Dept. of Mechanical Engineering
Dr. P. Balakrishnan, Assistant Professor, Dept. of Mechanical Engineering
Dr. D. Siva Krishna Reddy, Research Assistant Professor, Dept. of Mechanical Engineering
Dr. R. Pankaj Kumar, Assistant Professor, Dept. of Mechanical Engineering
Dr. S. Manikandan, Assistant Professor, Dept. of Mechanical Engineering
Dr. Santhosh Kumar Singh, Research Assistant Professor, Dept. of Mechanical Engineering
Dr. R. Senthil Kumar, Research Assistant Professor, Dept. of Mechanical Engineering
Dr. P. Sudhakar, Assistant Professor, Dept. of Mechanical Engineering
Dr. D. Premnath, Assistant Professor, Dept. of Mechanical Engineering
Dr. M. Sivashankar, Assistant Professor, Dept. of Mechanical Engineering
Dr. V. Praveena, Assistant Professor, Dept. of Mechanical Engineering
Dr. M. Gunasekaran, Assistant Professor, Dept. of Mechanical Engineering
Dr. Joji Johnson, Assistant Professor, Dept. of Mechanical Engineering
Dr. V. Magesh, Associate Professor, Dept. of Mechanical Engineering
Dr. P. Susai Manickam, Assistant Professor, Dept. of Mechanical Engineering
Dr. Sandipan Roy, Research Assistant Professor, Dept. of Mechanical Engineering
Mr. D. Kathirkaman, Assistant Professor, Dept. of Mechanical Engineering
Dr. A. Sathishkumar, Assistant Professor, Dept. of Mechanical Engineering
Mr. N. Vijay Krishna, Assistant Professor, Dept. of Mechanical Engineering
Dr. Rajesh Agarwal, Associate Professor, Dept. of Electronics & Communication Engineering
Mr. G. Naresh, Assistant Professor, Dept. of Automobile Engineering
Dr. C. Naveen, Assistant Professor, Dept. of Electrical & Electronics Engineering
Dr. K. Mohanraj, Assistant Professor, Dept. of Electrical & Electronics Engineering
Dr. S. Senthilkumar, Professor, Dept. of Aerospace Engineering
Dr. G. Saravanan, Assistant Professor, Dept. of Aerospace Engineering
Dr. K. Vibha, Assistant Professor, Dept. of Electronics & Instrumentation Engineering
Dr. S. Indrani, Assistant Professor, Dept. of Electronics & Instrumentation Engineering
Mr. V. Ganesh, Assistant Professor, Dept. of Chemical Engineering



SRM
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

Center of Excellence for Electronic Cooling and CFD Simulation

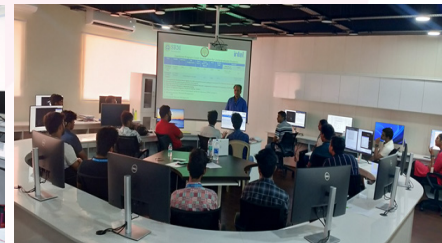
Department of Mechanical Engineering
College of Engineering and Technology
SRM Institute of Science and Technology
SRM Nagar, Kattankulathur-603203



Gallery | Inauguration



Professional Development Program Photos



Reach Us

The Head of the Center, B.E.L.- 407, Third Floor, Basic Engineering Lab,
SRM IST, K.T.R. Campus, Chengalpattu, Tamilnadu, India-603203

Email: head.ceec.ktr@srmist.edu.in | Ph: 9677059138

<https://www.srmist.edu.in/department/center-of-excelence-for-electronic-cooling-and-cfd-simulation/>



A++



Category 1
with 12B Status



(2024)
12th Ranked University



(2025) World Ranking
one among 46 Indian Universities



(2024) World Ranking
one among 91 Indian Universities



VERY GOOD
QS 4 Star Rated Globally



(2024) World Ranking
Ranked 5-7 in Indian Universities

ABOUT THE INSTITUTE

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, Vadapalani, Modi Nagar (Ghaziabad), and Tiruchirappalli with over 52000 students and 3200 faculty members, offering 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 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 accredited by NAAC with 'A+ +' Grade in the year 2018.

ABOUT THE DEPARTMENT

The Department of Mechanical Engineering, established in 1985, is one of the pioneering departments of SRM IST. The present faculty strength is 108, of which around 50% are with PhD, and the rest are on the verge of completion. More than 1200+ research papers have been published in leading international journals with high impact factor and more than 1000 papers have been presented in international conferences. The department is functionally divided into three broad areas of specialization: (i) Design (ii) Manufacturing and (iii) Thermal. The department also offers Doctoral programs in these three areas of specializations. The National Board of Accreditation has accredited the Mechanical Engineering program for six years, from the year 2021 to 2027. The B.Tech. – Mechanical Engineering program at the Kattankulathur campus is accredited by the Engineering Accreditation Commission of ABET, USA (<https://www.abet.org>). The department offers Semester Abroad Program for our UG students to spend one semester at some of the best universities in the world, such as – Carnegie Mellon, Northeastern University, University of Wisconsin, UC Berkeley, University of Western Queen’s University and many others.

CENTER OF EXCELLENCE FOR ELECTRONIC COOLING AND CFD SIMULATION

The Department of Mechanical Engineering at SRM. Institute of Science and Technology in Kattankulathur inaugurated the Center of Excellence for Electronic Cooling and CFD Simulation in April 2023. The facility, dedicated to enhancing student skill set, research and development, Capstone Program, Minor Program was inaugurated by Dr. P. Sathyanarayanan, Pro-Chancellor (Academics). This Center was established with a budget of ₹2.5 crore to provide cutting-edge computational capabilities similar to those found in leading industries. The establishment of this facility was made possible with the support of Intel Corporation, USA.

The Center is equipped with 30 workstations featuring 128GB RAM, Dual Processors, 8 GB graphics cards, built-in WiFi, and 27-inch full HD monitors. Faculty members and students from various science, engineering, and technology disciplines are welcome to utilize this state-of-the-art resources.

VISION:

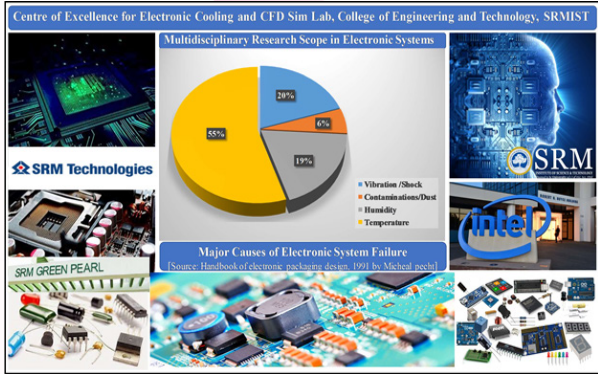
To excel in the field of electronic cooling technology by focusing the global needs

MISSION:

- Investments** on training and development of human resources at academic premises on electronic cooling technology in industrial perspective.
- Facilitate** the young leaping talents with state-of-the-art infrastructure to empower their career in electronic cooling sectors.
- Lead** the centre with multidisciplinary exposure to innovate sustainable cooling techniques/products to facilitate the society with economic viabilities.
- OBJECTIVES:**

- To develop a curriculum in the field of electronic cooling from an industrial perspective.
- To conduct regular/elective/value added courses and minor programs in e-cooling.
- To guide the students for their minor and major projects with multidisciplinary exposure.
- To establish state-of-the-art infrastructure for both software and hardware Laboratories.
- To arrange industrial visits/internship for the registered students accessing the centre regularly.
- To conduct hands-on training in computational fluid dynamic software available and applicable for e-cooling.
- To arrange Internal/Expert lectures in the field of e-cooling for the registered students accessing the centre regularly.
- To conduct summer and winter internships within the centre for the registered students accessing the centre regularly.
- To arrange placements for performing students at the centre.
- To motivate the interested students to do their research activities at the centre.
- To guide and support the students to pursue their higher studies at top ranked institutes with reputed journal publications and letter of recommendations.
- To establish a memorandum of understanding with leading industries / R&D organizations.
- To submit the project proposals for funding agencies with National/International collaborations.

Multidisciplinary Research Scope in Electronic System



Dr. Prabhakar Subrahmanyam is a Senior Staff Scientist / Distinguished Engineer at Dell Technologies, where he leads advancements in server and rack-level thermal management and AI-and ML-driven thermal optimization for data center ecosystems. Previously, he served as a Staff Scientist at Intel, focusing on thermal research and cooling techniques for microprocessors and GPUs - spanning client devices, desktops, Xeon servers, HPC, and graphics ecosystems. As Chief Thermal Architect for Intel's advanced node processors, he played a pivotal role in delivering the first exascale computing chip, Ponte Vecchio, for Argonne National Lab and the private sector. He spearheaded research and innovation in cooling and packaging, driving advancements in photolithography processes for Intel's processors and GPU roadmap. Dr. Prabhakar holds a degree in Aerospace Engineering from Stanford University, specializing in Hypersonic Aerothermodynamics & atmospheric entry heat transfer for planetary entry probes and vehicles. With over 65 publications and over 50 patents, and several pending at the patent office, he is a pioneering technologist renowned for his expertise in jet impingement cooling techniques for high-power density electronics and innovations in heat exchangers. At Intel Labs, he invented, developed, and deployed numerous innovative cooling solutions that shaped the industry. Prior to Intel, he worked at NASA Ames Research Center on thermal protection systems heat shields for planetary entry probes. Dr. Prabhakar has delivered over 150 invited talks across universities and industries in several countries. He was instrumental in starting the Center of Excellence for Electronic Cooling lab at SRMIST and SRMAP. He is an active contributor to technical conferences, serving as a session chair, track chair and reviewer for IEEE Transactions on Components, Packaging, and Manufacturing Technology, as well as ASME Transactions on the Journal of Electronic Packaging. His expertise extends from semiconductor thermal management to embedded systems, thermal management in data centers, and emerging technologies such as quantum computing, where advanced cooling solutions are essential for the next-generation computing infrastructure.

Infrastructure Hardware

30 High-End Workstations
128GB RAM, Dual Processor, 8 G.B. Graphics card,
built-in WiFi, 27-inch full H.D. monitor



Software

Ansys Icepak, Ansys Fluent, and other Ansys Suite of Software, COMSOL Multiphysics, nTopology.

Research Areas

These research areas are critical for improving electronic device performance, reliability, and longevity while addressing the challenges associated with heat management.

- Nanomaterials for Thermal Management: Exploring nanomaterials like graphene and carbon nanotubes to enhance heat dissipation in electronic components.
- Microfluidic Cooling: Investigating the design and implementation of microchannels and microfluidic systems for efficient cooling of electronic devices.
- Lattice Structures: Research in advanced heat sinks.
- Thermal Modeling and Simulation: Developing accurate and efficient computational models for predicting and optimizing temperature distributions in electronic systems.
- Two-Phase Cooling Systems: To manage heat in high-performance electronics, two-phase cooling methods, such as phase-change materials and heat pipes.
- Thermal Management in Power Electronics: Investigating techniques to dissipate heat generated in power electronic devices.

Courses Offered

Course Code		Course Title	Credits		Remark/Prerequisite
Regulation 2018	Regulation 2021		2018 Regulation	2021 Regulation	
18ME0122J	21ME0113J	Electronics Thermal Management	3	3	Pre-requisite/Co-requisite. It is sufficient to do one prerequisite
18MEE451J	21MEE217J	Microelectronics Thermal Management			
18IPE401J	21IPE401J	Capstone Program in Electronic Cooling	6	6	18ME0122J or 18MEE451J
18IPP401L	21IPP401L	Capstone Program Project	10	15	18IPE401J or 21IPE401J
Total Credits for Capstone Program			19	24	

Workshops Conducted

5-Day Professional Development Program on

Electronic Cooling using Ansys ICEPAK, (For Faculty & Students)