Department of Nano Science and Technology {

About:
The Department of Nano Science and Technology offers M.Tech. Nano Science and Technology & Ph.D. programs and was established in 2012 with state-of-the-art laboratories equipped with sophisticated analytical and fabrication instruments amounting to Rs. 3 Crores. The alumni of the Department have been awarded fellowships to pursue higher studies abroad. It is recognized as a Research Centre by Anna University - Chennai and houses full-time research scholars funded by various government agencies, including DST, CSIR – SRF, UGC-SJSGC, and SREC institutional fellowships. The dedicated faculty members of the department have received 4 patents and published 85 high-impact journal papers in the last 5 years through collaborations with renowned global institutions. To date, 7 full-time Ph.D. scholars have successfully completed their programs (in 2023), and currently, seven research scholars (5 full-time and 2 part-time) are actively pursuing their research in the Department. Notably, our alumni are pursuing Post-Doctoral Fellowship tenures at esteemed institutions like University of Pittsburgh, Pennsylvania, Penn State University, USA, University of Surry, United Kingdom and Jeju National University, Korea. Graduates who have completed their M.Tech are joining Ph.D. programs at prestigious universities, including the University of Western Australia, Australia and National Taipei University of Technology, Taiwan. The Department is actively involved in four centrally funded research projects, securing a total of Rs. 1.50 Crores from DST-INSPIRE, CSIR-EMR, DST-FIST, DST – WOS - A, DST-TDP, MSME, SERB-POWER. Additionally, we have research projects funded by Cameron - Schlumberger Pvt. Ltd. and Roots Industries. Furthermore, the establishment of the SLB-SREC Elastomer Lab has provided an excellent opportunity for conducting elastomer research, testing, and validation, further enhancing the department’s capabilities. The Department of Nano Science and Technology is making commendable strides in research and academic excellence, contributing significantly to the field of nano science and technology.

Head Of the Department of Nano Science and Technology: Dr.MOORTHI PICHUMANI
Dr. Moorthi Pichumani is currently working as Professor & Head in the Nano Science and Technology Department at Sri Ramakrishna Engineering College, Coimbatore, Tamilnadu. Formerly, he was the DST INSPIRE Faculty at the Department (B2014). He completed his Bachelor’s Degree (with distinction and University rank) in Physics from Periyar University (affiliated to), Salem, in the year 2006. He completed his Masters’ degree (with distinction and two gold medals) in Materials Science from PSG College of Technology, Coimbatore (Anna University, Chennai) in the year 2008. He completed his Ph.D. from University of Navarra (Doctoral fellowship by the AsociaciÃ³n de Amigos), Spain in the year 2012. He has been awarded Latin honor "Cum Laude" for the successful completion of doctoral studies. He has worked in various international projects from Government of Navarra (Spain), Government of Spain and Government of Canada as a researcher. He has ongoing international collaborations with leading Universities in Spain and Canada. He has around 15 years of teaching and 16 years of research experience. Four fulltime PhD scholars have been awarded PhD under his guidance in the field of soft matter, nanomaterials, materials science and plasma physics. He is currently mentoring one Postdoctoral fellow and seven PhD scholars. He has published several research papers in reputed high impact international journals of Springer, Elsevier, APS, ACS, etc. He has contributed to several international conferences (US, Canada, Spain, Italy, Germany, Austria and India), published a few national and international conference papers and received best paper awards. He has organized national conferences, seminars, internships and workshops. He is a life member of ISTE. Research interest includes soft matter, nanomaterials, materials science and nanofluids. He is a peer reviewer of SERB funding agency of Government of India. He is a peer reviewer in international journals like energy conversion and management, journal of colloid and interface science, journal of thermal analysis and calorimetry, multidiscipline modeling in materials and structures, colloids and surfaces A: physicochemical and engineering aspects, materials research express etc. His expertise leads to funding projects from DST INSPIRE (value Rs. 35 Lakhs), DST TDP Nano-Civil Multidisciplinary Project (value Rs. 26 Lakhs) and DST WOS(A) (value Rs. 23 Lakhs), CSIR-SRF (Value Rs. 16 Lakhs), UGC- SJPSGCF (Value Rs. 25 Lakhs) as mentor. He participated as an active researcher in the research projects funded by SREC seed grant for research and innovation and the outcomes have been converted to IPRs. He has acted as resource person for various FDPs, conferences, seminars, guest lectures and attended various

conferences, FDPs and workshops, in his area of expertise.

VISION

To attain global recognition as a Center of Excellence in advanced research. The Programme prepares the graduates to contribute in international Nanotechnology community as the best research talent, promoting entrepreneurship and providing general socioeconomic strength based on Nanotechnology.

MISSION

1. Nanoscience and Technology programme will provide quality interdisciplinary science and engineering education in such a way that, the graduates can advance the frontiers of knowledge in Nanotechnology by developing and transforming them through research and innovations.

2. The program will prepare qualified graduates for human capital development towards the discovery of alternative technologies, efficient knowledge transfer and for the creation of societal values and morals.

Program Educational Objectives

PEO I : Lead successful professional careers or engage in higher studies in the broad area of multidisciplinary Nanoscience & Technology and allied specializations at the regional, national and international levels

PEO II: Graduates will be equipped with the skills necessary to conduct independent research, explore new frontiers in nanotechnology, and contribute to cutting-edge advancements in the field, fostering a spirit of innovation and discovery.

PEO III: Consider societal, environmental and ethical issues in executing their work and fulfill their professional responsibilities by continuous updating of their knowledge, to themselves, to employers, to employees, to co-workers and to the local & global communities

Program Outcomes

PO1: An ability to independently carry out research/investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO4: Acquire in-depth knowledge of the various experimental and theoretical techniques used in nanoscience, including nanofabrication, characterization, and manipulation of nanomaterials.

PO5: Conduct independent research and demonstrate proficiency in analyzing and interpreting data related to nanoscale materials and devices.

Program Specific Outcomes
PSO1: Comprehend the properties and applications of Nanotechnology enabled systems using various analytical and modeling tools.

PSO2: Implement research oriented knowledge of Nanoscience and Technology in their respective domains.

PSO3: Independently resolve real time problems to address the societal requirements.

Laboratiories:
Characterization Lab
DST-FIST Sponsered Research Lab
Advanced Synthesis Lab
SLB-SREC Elastomer Lab

Faculties:
Dr. Moorthi Pichumani
Head of the Department

Dr. R. Pandeeswari
Assistant Professor(Sr.Grade)

Mrs. R. Sarojini
Technical / Supporting Staff

Mrs. R. Vidhya
Lab Assistant

Mrs. V. Revathi
Non Teaching Staff(s)