



St. Xavier's College (Autonomous)

(Recognized as "College with Potential for Excellence" by UGC & Accredited at A⁺⁺ grade with CGPA of 3.66/4 in IV Cycle by NAAC)

Palayamkottai – 627 002

ANNUAL REPORT 2023-2024

MATERIALS RESEARCH CENTRE

The Materials Research Centre, Department of Physics, is actively doing research in various domains of materials science. Projects have ranged from the development of novel nanomaterials for energy applications to the characterization of advanced nanomaterials. The achievements include the synthesis of graphene-based composites with exceptional mechanical properties and the discovery of new catalysts for sustainable chemical processes. Three of our research scholars, Mr. P. Ajith, Mr. M. Sappani Muthu, and Sr. Agnes CIC, have received their doctoral degrees after the successful completion of the public viva voce examination. At present, Mr. A. Carroll Xavier is doing research under the guidance of Dr. D. Prem Anand. Dr. P. Ramasamy, Research Director of SSN College of Engineering, Chennai, visited our research centre and had a fruitful discussion about the irradiation of solids and the SR Method. Many project proposals were submitted to various agencies, such as DST, CSIR, DRDO, MOES, SERB, BRNS-DAE, and BARC-Mumbai. We have published seven research articles this academic year in leading National and International journals. Throughout the year, the Materials Research Centre has been engaged in cutting-edge research across various domains of materials science. Projects have ranged from the development of novel nanomaterials for energy applications to the characterization of advanced materials for aerospace engineering. Notable achievements include the synthesis of graphene-based composites with advanced mechanical properties and the discovery of new catalysts for sustainable chemical processes. The Materials Research Centre has published numerous papers in High-Impact Journals, contributing to the global body of knowledge in materials science. Looking ahead, the MRC is poised for continued growth and success. Plans for the upcoming year include expanding research initiatives in emerging areas such as Quantum Materials, Biomaterials, and Additive Manufacturing. The centre will also focus on strengthening existing collaborations and forging new partnerships to tackle complex material challenges and drive innovation in diverse sectors. The Materials

Research Centre has had a productive and impactful year, advancing knowledge, fostering collaboration, and driving innovation in materials science and engineering. With a strong foundation and a clear vision for the future, the centre is well-positioned to make even greater contributions to the field in the years to come.