

MATERIALS SCIENCE AND TECHNOLOGY

Ateneo - Cement-based composite materials for structural, functional, and environmental applications

Funded By	Politecnico di TORINO [P.iva/CF:00518460019]
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Context of the research activity	The research focuses on the development of cement-based materials that will be modified to meet the requirements of structural, functional, and environmental applications, with an emphasis on sustainable processes. These modified materials aim to enhance the performance and durability of structures while minimizing environmental impacts
Objectives	The study involves the investigation and optimization of various modification techniques, such as the incorporation of additives, nanomaterials, or waste materials, to improve specific properties of the cement matrix. These properties may include mechanical strength, durability, resistance to chemical attack, thermal conductivity, electrical conductivity, and more. Furthermore, the research aims to explore innovative and eco-friendly approaches for the production, processing, and application of these modified cementitious materials. The ultimate goal is to contribute to the development of sustainable construction practices by utilizing modified cementitious materials that not only meet structural and functional requirements but also reduce environmental impacts and promote resource efficiency
Skills and competencies for the development of the activity	Candidates should have a solid chemical and engineering background with strong motivation to learn through advanced research. Expertise in materials science, chemistry, advanced processes and technologies, mechanical behavior and characterization of cement-based materials is a plus. Problem solving ability and practical attitude for laboratories activities is also appreciated