Special Issue

Application, Potential and Challenges of Nanotechnologies in Technical Textiles

Message from the Guest Editor

This Special Issue explores recent advancements and sustainable developments in nanotechnologies and nanoengineering for the technical textiles sector. This includes topics such as nanofibres, nanocoatings, nanoemulsions, nanostructures, and nanotubes that enhance textile performance. Specific subtopics include, but are not limited to, the following: - Research on the development of novel nanofibres, nanomaterials, and approaches for material characterisation in technical textiles and high-performance applications. - Technical reports on advancements in innovative methods to improve physical durability (strength, repeated usage, longevity), functionality (hydrophobicity, antibacterial properties, sensors, wearable electronics, drug release), and comfort (wicking and thermal regulation). - Studies focusing on environmentally friendly approaches and processes utilising nanotechnologies, along with lifecycle assessment methods to monitor the benefits and impacts of nanoparticles on the environment. - Investigations into innovative applications and the challenges of implementing nanotechnologies in the fashion and technical textile sectors, such as health concerns, safety, and scalability.

Guest Editor

Dr. Prabhuraj Venkatraman
Manchester Fashion Institute, Manchester Metropolitan University, Manchester M15 6BH, UK

Deadline for manuscript submissions

31 July 2026

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 10.3
Indexed in PubMed

mdpi.com/si/268099

Nanomaterials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
nanomaterials@mdpi.com

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones
School of Geography, Earth and Environmental Science, University of Birmingham, Birmingham B15 2TT, UK

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