Special Issue

Advancements in Durability and Mechanical Performance of Hybrid Fiber Reinforced Polymers in Harsh Environments

Message from the Guest Editors

Hybrid fiber-reinforced polymers (HFRPs) have garnered significant attention in various industries due to their superior mechanical properties, lightweight nature, and enhanced durability compared to conventional composite materials. The combination of multiple fiber types, such as carbon, glass, aramid, and basalt fibers, offers a tailored balance of strength, stiffness, impact resistance, and environmental stability, making them ideal for applications in aerospace, automotive, civil infrastructure, marine, and energy sectors. Examples of HFRPs include carbon/glass fiber-reinforced polymers (C/GFRPs), carbon/aramid fiber-reinforced polymers (C/AFRPs), glass/basalt fiber-reinforced polymers (G/BFRPs), and carbon/basalt fiber-reinforced polymers (C/BFRPs). This Special Issue will explore advancements in the development, characterization, and performance enhancement of HFRPs under extreme environmental conditions. Articles will focus on innovative material formulations, processing techniques, testing methodologies, and applications that enhance durability and mechanical performance in harsh environments.

Guest Editors

Dr. Ahmed Bahgat Radwan
Center for Advanced Materials, Qatar University, Doha 2713, Qatar

Dr. Noora Al-Qahtani
Center for Advanced Materials, Qatar University, Doha 2713, Qatar

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

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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