Special Issue

Future Perspectives on Carbon Fibers and Their Composites

Message from the Guest Editor

Lightweight materials are essential for all types of mobility and engineering constructions. During use, they significantly enable the reduction of CO2 emissions. However, the use of carbon fibers as reinforcement materials requires intense energy for their generation. This Special Issue will, therefore, focus especially on future raw materials, technologies, and markets contributing to overall significant CO2 reductions. The present Special Issue, focuses on alternative, renewable raw materials as precursor materials for carbon fiber processing. The latest scientific directions prescribe the use of alternative raw materials, i.e., lignin/cellulose compositions. Energy efficient process technologies such as low pressure stabilization for the conversion to carbon fibers. Additionally, the use of hydrogen as a future energy source for electric cars and energy generation, as well as for storage potential in aviation and cars, requires the application of carbon fibers with unique properties in composites. Furthermore, the reinforcement of concrete finally demonstrates the unique potential for a reduction of CO2 by replacing steel already in use.

Guest Editor

Prof. Dr. Hubert Jäger
Institute of Lightweight Engineering and Polymer Technology, Technische Universität Dresden, D-01307 Dresden, Germany

Deadline for manuscript submissions

closed (20 May 2023)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/139380

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

mdpi.com/journal/materials

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

About the Journal

Message from the Editorial Board

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.

Editors-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

Prof. Dr. Yuguang Ma
State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, China

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (Condensed Matter Physics)

MDPI