Special Issue

Manufacturing Simulation for Composites and Composite Structures

Message from the Guest Editor

Although composite materials have numerous advantages, they have some relevant disadvantages, including high manufacturing costs. Manufacturing process simulation can help to shift from an experimental trial and error approach towards a knowledge-based development of the manufacturing process. The objective of this Special Issue is to present elements of a coherent virtual process chain for a composite structure manufacturing process which represents all physical effects leading to critical quality aspects such as process-induced deformations and stresses, filling/injection and curing, as well as draping errors. Virtual process models and their connection to online process monitoring methods can enable feedback loops to enable “as-built” analysis and the comparison to “as planned” conditions. Uncertainty analysis, sensitivity analysis, and evaluation of the effects of defects are the focus of this Special Issue.

Guest Editor

Prof. Dr. Christian Brauner

Institute for Polymer Engineering, Lightweight Design & Composite Technologies, FHNW University of Applied Sciences and Arts Northwestern Switzerland, 5210 Windisch, Switzerland

Deadline for manuscript submissions

closed (20 June 2022)

Materials

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 5.8
Indexed in PubMed

mdpi.com/si/94638

Materials
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 3.1
CiteScore 5.8
Indexed in PubMed

mdpi.com/journal/materials

MDPI

About the Journal

Message from the Editor-in-Chief

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

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