

Special Issue

Innovations in Materials, Fabrication and Functionalization of Microfluidic Devices

Message from the Guest Editors

Microfluidics has become an attractive field of research, since it has a wide range of applications, such as in lab-on-a-chip devices, cell analysis, cosmetics, drug delivery, microfabrication, and chemical synthesis. Microfluidics is a subsection of fluidics usually in networks of channels with dimensions from tens to hundreds of micrometers and microliter volumes. Since the first approaches to miniaturizing the fluid flow devices in the 1990s, the discipline has grown enormously over the last three decades. Microfluidic devices are manufactured with a large variety of methods and materials. Typical materials are polymers, including silicon-based polymers, inorganic materials such as glass or silicon, and paper. Traditional methods for microfabrication are photolithography and wet or dry etching. However, the use of additive manufacturing is getting more and more important. So-called 3D printing can also handle multicomponent materials. The flow in microfluidic devices, especially for multiphase flow, strongly depends on the surface properties. This Special Issue will focus on the innovations in materials on microfluidic devices and their fabrication.

Guest Editors

Prof. Dr. Volker Paul Schulz

Department of Mechanical Engineering, Cooperative State University Mannheim, Coblenzallee 1-9, 68163 Mannheim, Germany; American Society of Mechanical Engineering (ASME); The Electrochemical Society (ECS); Deutsche Physikalische Gesellschaft (DPG); Verein Deutscher Ingenieure (VDI); International Society for Porous Media (Interpore)

Prof. Dr. Thorsten Röder

Hochschule Mannheim, Institut für chemische Verfahrenstechnik, Paul-Wittsack-Straße 10 68163 Mannheim, Germany

Deadline for manuscript submissions

closed (10 January 2022)



Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



mdpi.com/si/51404

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

[mdpi.com/journal/
materials](https://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](https://mdpi.com/journal/materials)



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