# Special Issue

# 3D and 4D Printing of Polymers: Modeling and Experimental Approaches

## Message from the Guest Editors

In the past decade, additive manufacturing via Fused Deposition Modeling (FDM) has become a popular 3D printing techniques. Various materials have been introduced into FDM. However, polymers such as PLA, ABS, or TPU remain a core part of this technique. Recent efforts using these polymers have demonstrated the potential to expand 3D capabilities by introducing a 4th dimension via electrical, heat treatment, or mechanical stimuli. These novel techniques are dubbed 4D printing. This Special Issue is focused on gathering the most recent scientific efforts in the modeling and experimentation of 3D printing using polymers, with a focus on 4D printing. This Special Issue invites contributions that address advances in 4D printing techniques, the heat transfer modeling of FDM printing, the mechanical characterization of 3D-printed parts, the enhancement of 3D printing conditions, high-speed 3D printing, and the optimization of FDM 3D printers. This list is only indicative and by no means exhaustive. Any original research or review articles on the simulation and experimentation of FDM 3D and 4D printing are welcome.

## Guest Editors

Dr. Babak Eslami

Dr. Kamran Fouladi

Dr. Michèle Kanhonou

Dr. Hamid Reza Vanaei

## Deadline for manuscript submissions

15 January 2025

**Polymers**

**an Open Access Journal by MDPI**

**Impact Factor 4.7**
**CiteScore 8.0**
**Indexed in PubMed**

mdpi.com/si/177892

*Polymers*
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
polymers@mdpi.com

mdpi.com/journal/polymers

# Polymers

an Open Access Journal by MDPI

Impact Factor 4.7
CiteScore 8.0
Indexed in PubMed

mdpi.com/journal/polymers

# About the Journal

## Message from the Editor-in-Chief

Since its foundation in 2009, *Polymers* has developed into an internationally renowned, extremely successful open access journal. The editorial team and the editorial board dedicatedly combine open-access publishing and high-quality rigorous peer reviewing. The performance of the journal has proven this strategy to be well-suited and highly successful. This is reflected in the increasing impact factor of *Polymers*, the most recent one being 4.7.

I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

## Editor-in-Chief

Prof. Dr. Alexander Böker
Lehrstuhl für Polymermaterialien und Polymertechnologie, University of Potsdam, 14476 Potsdam-Golm, Germany

## 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), Ei Compendex, PubMed, PMC, FSTA, CAPlus / SciFinder, Inspec, and other databases.

**Journal Rank:**

JCR - Q1 (Polymer Science) / CiteScore - Q1 (General Chemistry )

MDPI