

## Special Issue

# Biomedical Applications of Biodegradable Composites

### Message from the Guest Editor

The use of biodegradable composites is increasing in the biomedical space. Composites, by their nature, impart the beneficial properties of the individual components while overcoming their limitations through the synergistic combination of distinctly different materials. However, the potential of biodegradable composites can only be achieved if there is intimate, uninterrupted contact between the reinforcement and matrix phases of the composite and in the case of nanocomposites exfoliation of the nanoparticles. This can, in itself, be difficult to achieve while retaining the biocompatibility of the final construct, as the matrix and reinforcement agent are generally not compatible. Approaches for this can include the following:

- Surface treatment
- Reactive extrusion
- Process optimisation

These composites can be used to overcome shortfalls of traditional materials in a variety of applications such as:

- Tissue engineering
- Bone repair
- Cardiovascular, urinary, and other stents
- In-situ controlled release of active pharmaceutical ingredients

---

### Guest Editor

Dr. Declan Devine  
Material Research Institute, Athlone Institute of Technology, Dublin  
Road, Athlone, Co. Westmeath, Ireland

---

### Deadline for manuscript submissions

closed (30 April 2021)



## Materials

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.2  
CiteScore 6.4  
Indexed in PubMed



[mdpi.com/si/20500](https://mdpi.com/si/20500)

*Materials*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[materials@mdpi.com](mailto: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)