Special Issue

Bone Regeneration Materials

Message from the Guest Editors

In a constantly aging population, the need for bone regeneration materials is rising, and alternatives to autologous bone graft materials need to be developed. Depending on the localization of the trauma, the requirements of the material must be addressed, e.g., an implant into loadbearing bones has to be more resilient than a bone replacement material in non-load-bearing regions. There is a wide range of approaches, which address different strategies and materials for bone tissue replacement or regeneration. In this Special Issue, we would like to draw attention to materials which either induce bone regeneration or support bone tissue growth due to their chemical composition, release of drugs, growth factors or transfecting agents, as well as by surface modifications like coatings or structure designs. These materials may be degradable or durable for a longer time and belong to different material classes such as polymers, hydrogels, ceramics, and metals, as well as to composite materials thereof.

Keywords

- Bone regeneration
- Osteoinduction
- Osteoconduction
- Bone implants
- Coatings
- Growth factors
- Bone morphogenic proteins
- Ceramics; Polymers; Hydrogels; Metals

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Deadline for manuscript submissions

closed (30 September 2021)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/44723

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Indexed in PubMed

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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.

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