

Special Issue

Biomedical Applications of Cerium-Doped Materials and Nanoceria

Message from the Guest Editors

The development of new biomaterial-based strategies to accelerate the repair and regeneration processes of human tissues is of utmost importance in tissue engineering approaches. In this regard, cerium-based biomaterials and nanomaterials have recently attracted great attention due to their suitable and highly interesting biological properties, including their anti-oxidant, anti-inflammatory, and antibacterial activities. As a result, there is evidence that the incorporation of cerium oxide nanoparticles (nanoceria) into implantable biomaterials and scaffolds can contribute to improving the healing processes of different hard and soft tissues. This Special Issue will cover the latest advances related to the production, characterization, and potential clinical use of cerium-based biomaterials, including new synthesis methods, tissue-engineering scaffolds and nanoparticles, drug delivery systems, diagnostic labelling and probing, cell-material and tissue-material interactions, advanced therapies (e.g., cancer treatment), and toxicological issues.

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Deadline for manuscript submissions

closed (30 September 2020)



Molecules

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Impact Factor 4.6
CiteScore 8.6
Indexed in PubMed



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