Special Issue

Design and Micromechanical Behavior of Orthopaedic Devices for Bone Repair and Regeneration

Message from the Guest Editors

Although bone has the capacity of self-regenerating, there are a number of bone defects and fractures for which the support of an artificial device is required for complete bone regeneration. These orthopedic devices can be permanent, such as those for joint replacement, or temporary, such as some fixation plates and biodegradable bone scaffolds. The design and material of such devices must be carefully defined, in order to respond to their biomechanical demands. Therefore, the development of devices with controlled micromechanical behavior is essential to avoid device failure and lead to successful bone repair and regeneration. This Special Issue aims to collect the most recent developments on the design of bone implant devices with controlled structure and material, focusing on their design, fabrication, and physical and biomechanical characterization.

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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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