Special Issue

Advances in Bone Material Characterization

Message from the Guest Editor

The mechanical properties of bone vary significantly within the bone body, since it is considered a heterogeneous material. Bone material properties are continually changing because of ageing, illness, nutrition, applied loads, and other factors. The characterization can be carried out at three levels, namely the macro-, micro-, and nanostructural levels, and considering several loading effects (static, dynamic, ...). The characterization can also be carried out considering several types of strategies—numerical and experimental or hybrid strategies. In addition, optimization strategies can be utilized to find the best models for characterizing the bone material properties. Furthermore, uncertainty analysis can be performed on the resulting developed models to determine their confidence levels. In all these stages, sensitivity analysis can help to determine the effect of each input parameter on the studied output responses. There is a strong need to provide new models, formulations, or strategies to improve these vital engineering applications for human healthcare objectives.

Guest Editor

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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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