Special Issue

Novel Research about Biomechanics and Biomaterials Used in Hip, Knee and Related Joints

Message from the Guest Editors

Joint replacement is a very successful medical treatment. However, the survivorship of hip, knee, shoulder, and other implants is limited. The degradation of materials, but also the immune response against degradation products or an altered tissue loading condition as well as infections remain key factors of their failure. Current research in biomechanics and biomaterials is trying to overcome the existing limitations. This includes new implant designs and materials, bearings concepts and tribology, kinematical concepts, surgical techniques, and anti-inflammatory and infection prevention strategies. A careful evaluation of new materials and concepts is required in order to fully assess strengths and weaknesses and improve the quality and outcomes of joint replacements. Therefore, extensive research and clinical trials are essential. This Special Issue gives an overview of the ongoing research in that field. Contributions are solicited from researchers working in the fields of biomechanics, biomaterials, and bio- and tissue-engineering.

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Message from the Editorial Board

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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