

Special Issue

Advances in Biomaterials and Evaluation for Orthopaedic Implants

Message from the Guest Editors

This Special Issue aims to highlight recent advances in the design, fabrication, characterisation, and clinical assessment of biomaterials for orthopaedic applications. Topics of interest include novel metallic, ceramic, polymeric, and composite biomaterials; bioactive and antibacterial surface modifications; multifunctional and smart coatings; biodegradable and bioresorbable materials; and 3D-printed or patient-specific implants. We also welcome studies focusing on in vitro and in vivo evaluation, biomechanical and tribological testing, computational modelling, and translational or clinical investigations. In addition, contributions addressing implant performance under diverse clinical conditions—including imaging compatibility, sterilisation effects, and considerations related to radiotherapy or irradiated bone environments—are encouraged where relevant. By bringing together research across materials science, biomechanics, and clinical orthopaedics, this Special Issue aims to foster interdisciplinary collaboration and promote innovations that enhance the safety, longevity, and functional outcomes of orthopaedic implants.

Guest Editors

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Editor-in-Chief

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