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Microstructural and Mechanical Characterization of Materials for Biomedical Applications

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Message from the Guest Editors

With the recent developments of 3D printing, it is possible to make biomedical devices and constructs at a much higher resolution to mimic natural structures with greater detail and accuracy, leading to personalised treatments and changing medical practice. As a result, stronger materials have been developed, allowing ceramics to be used with more confidence in orthopaedics and dentistry. Polymer microstructures have led to the development of new drug release devices and tissue engineering substrates. New medical metal alloys have been developed with bioresorbable microstructures. All these new possibilities have led to materials that are stronger with better mechanical performance and with a stiffness that is now closer than ever to the tissues that are replaced or repaired. This is an important development that minimises stress shielding in orthopaedic implants and promises longevity of the modern metal and ceramic implants.

The aim of this issue is to showcase all these new developments by bringing this knowledge together and covering a large number of biomedical applications to raise their scientific and commercial value in the field of biomedical materials.



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Special Issue



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Message from the Editor-in-Chief

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