



## Hydrogels for Cartilage Tissue Engineering and Mechanobiology

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### Message from the Guest Editors

Dear Colleagues,

Hydrogels are increasingly recognized as a crucial material in the field of tissue engineering and mechanobiological studies. In cartilage tissue engineering and mechanobiological studies, hydrogels can be used to support the growth and proliferation of chondrocytes, thanks to their flexibility and suppleness, which closely emulate the mechanical properties of native cartilage. Furthermore, engineered hydrogels can be designed to degrade at a rate synchronized with the growth of new tissue, thereby supporting the fusion of the new tissue with the body.

The ability of hydrogels to mimic the natural extracellular matrix (ECM), positions them as desirable candidates for creating scaffolds aimed at supporting tissue regeneration. However, challenges persist, notably in matching hydrogel degradation rates with tissue growth and enhancing mechanical properties without compromising biocompatibility and bioactivity. Nevertheless, ongoing research and development endeavors hold promise for overcoming these hurdles and further enhancing the efficacy of hydrogels in cartilage mechanobiological research and skeletal tissue engineering applications.





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## Message from the Editor-in-Chief

*Gels* (ISSN 2310-2861) is recently established international, open access journal on physical and chemical gel-based materials. The journal aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. General topics include but not limited to synthesis, characterization and applications of new organogels, hydrogels and ionic gels made either from low molecular weight compounds or polymers, composite and hybrid materials where a metal is by some means incorporated into the gel network, and computational studies of these materials in order to provide a better understanding of gelation mechanism. We cordially invite you to consider publishing with us and contribute with your own grain of sand to the advance in this fascinating field.

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