

Special Issue

Advances in Polymeric Materials: Synthesis, Characterization, and Biomedical Applications

Message from the Guest Editors

The synthesis and characterization of new polymeric materials for biomedical applications are increasingly necessary due to the various tissue damages and pathologies that require medical devices and advanced polymeric materials functioning as cellular scaffolds or therapeutic agent delivery systems. These advanced polymeric materials must effectively promote cellular regeneration in cases such as the regeneration of nerves, skin, tendons, cartilage, and bone, or provide controlled therapy for various pathological and infectious diseases. Techniques employed include spectroscopic, surface, mechanical, and thermal characterization, as well as tests for loading-release, stimulus-response, swelling, cell adhesion, cell differentiation, cell infiltration and tissue formation, and protein-surface interactions, among others. Despite the availability of these tools, the synthesis, manufacturing, and characterization of polymeric materials for biomedical applications remain significant challenge for science.

Keywords

- scaffolds
- tissue engineering
- medical applications
- scaffold characterization
- drug delivery
- smart polymers
- hydrogels

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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