



*polymers*



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## Natural-Based Biodegradable Polymeric Materials

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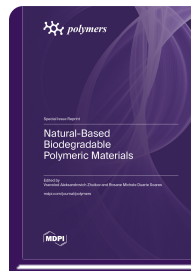
Edited by

Vsevolod Aleksandrovich Zhuikov

Rosane Michele Duarte Soares

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Biodegradable polymers are polymeric materials that self-destruct as a result of natural microbiological and chemical processes. Such materials have widespread applications.

First of all, biodegradable materials are used in the field of biomedicine, including for the controlled delivery of drugs and the creation of implants for tissue engineering. The range of scaffolds used for in situ tissue engineering includes hydrogels, aerogels, films, nanoparticles, monolithic, fibrous, microporous, and 3D-printed scaffolds. Biodegradable materials may function at the time of implantation or perform the intended function and be integrated with the host after implantation.

Other applications, such as those for environmental protection (packaging materials with controlled degradation rates) and agriculture, are also relevant. Edible and/or biodegradable packages formed from multiple compounds (composite materials) are being developed to exploit the functional properties of constituent materials and overcome their respective disadvantages.



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