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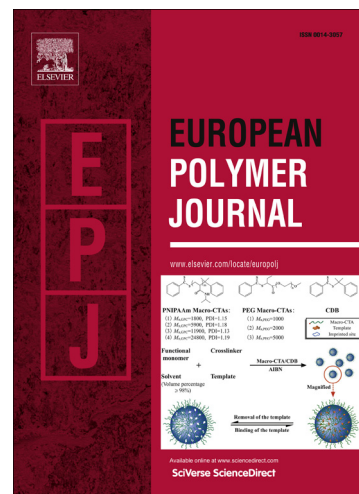
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Collagen and Collagen Mimetic Peptide Conjugates in Polymer Science

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Abstract:

Collagen, the most abundant protein in animal kingdom, has attracted scientists in supramolecular chemistry, biomedical and materials science. This review describes the recent developments and progress of collagen mimetic peptide based materials. Research on collagen mimetic peptides was initially developed by biochemists to elucidate the structure and stability of collagen, followed by biologists and polymer chemists to produce nanostructured fibrous scaffolds with collagen mimetic peptides as the building blocks. Modern synthesis methods have been developed and particular ligation chemistries basing on activated ester, click chemistry, carbodiimide chemistry or other ligation chemistries provide versatile methods to prepare collagen-polymer conjugates. These conjugates with collagen mimetic peptides as the building blocks show exciting stimuli responsive or spontaneously assembly behavior. The corresponding synthetic techniques of well-defined collagen architectures and assembly behaviors are discussed in detail in the present review.

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