



## Advances in Phosphorus-Based Polymers

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### Message from the Guest Editor

Phosphorus-based polymers derive their distinct and appealing properties from the chemistry of the phosphorus atom, which make them attractive for a broad range of materials. The most prominent naturally occurring phosphorus-based polymers are DNA and RNA, which are high molecular weight polyphosphonates. Synthetic phosphorus-based polymers feature phosphorus either in the pendant groups of the macromolecule, or in the main chain of the polymer, making it an integral part of the backbone. For the latter, specifically designed chemistry is required for the polymerization, unlike for organic polymers, where the polymerization techniques can be simply adapted. The most prominent synthetic phosphorus main chain polymers are polyphosphoesters and polyphosphazenes, which find a broad range of applications, such as non-halogenated alternatives for flame retardants, fuel cell membranes, and catalyst agents. Phosphorus main chain polymers are of sizable interest for biomedical applications, such as drug and vaccine delivery, or tissue engineering.

I hereby invite you to join me in highlighting some of the most interesting advances in the field of phosphorus-based polymers.





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