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Recent Advances in the Synthesis of Catechol-Derived (Bio)Polymers for Applications in Energy Storage and Environment

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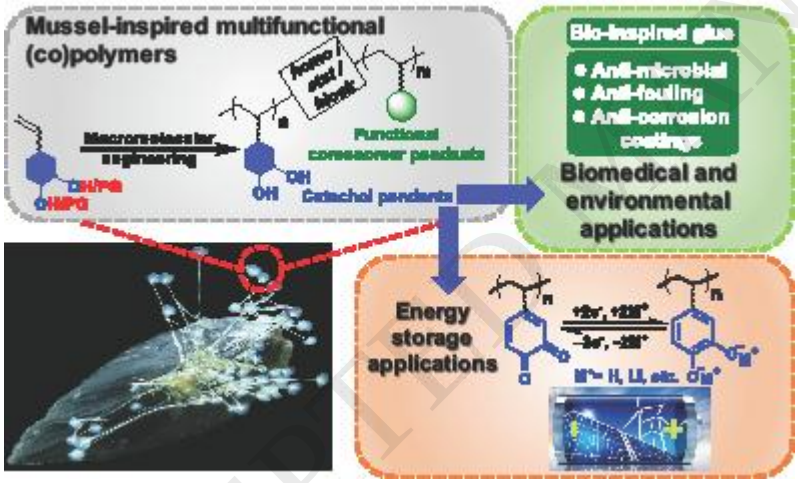
Graphical abstract



ABSTRACT

This review reports the recent advances in the most important and straightforward synthetic protocols for incorporating catechols into (bio)polymers, and discusses the emerging applications of these innovative multifunctional materials in biomedical, energy storage and environmental applications. In the last five years, new well-defined polymer structures with tuneable composition and functionality were introduced by the careful combination of catechol protection/deprotection chemistry with controlled polymerization techniques. These new synthetic pathways have facilitated the optimal design of the material that perfectly fits the target application. Although most current researches exploit