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标题: Recent advances in application of polypyrrole nanomaterial in water pollution control

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摘要: Faced with the complex and severe water pollution situation, various water treatment technologies are developing rapidly. Environmental functional materials, as the material foundation for technological development, have received increasing attention. Polypyrrole is a black conductive polymer, which can be easily obtained through the oxidation polymerization of pyrrole monomer. Polypyrrole has the characteristics of nontoxicity, low density, high purity, light absorption, electric conductivity, antibacterial, corrosion resistance, modifiability, and is therefore widely used in water treatment technologies. This work summarizes the research achievements of polypyrrole in water pollution control technologies such as separation and purification, oxidation and reduction, antibacterial and disinfection in the past decade. Specifically, the synthesis methods, modification strategies, and application scenarios of polypyrrole are introduced; the direct and indirect action mechanisms in corresponding water treatment technologies of polypyrrole are analysis, and the relationship between structural properties and application technology of polypyrrole is established. Moreover, a critical summary of the current research advances of polypyrrole was conducted, and potential future research and development direction are prospected.

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