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Review

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Adsorptive and photocatalytic removal of Persistent Organic
Pollutants (POPs) in water by metal-organic frameworks
(MOFs)

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Abstract:

Adsorptive removal and photocatalytic degradation of Persistent Organic Pollutants (POPs) in water have been emerged as energy- and cost- effective technologies. Both have attracted considerable attention to treat the world's wastewater. As a class of recently developed versatile porous materials, MOFs have shown huge potential and bright perspective in adsorptive removal and photocatalytic degradation of POPs for water remediation. This mini-review introduces the classification of POPs, and summarizes the current research progress on adsorptive and photocatalytic removal for each group of POPs using the emerging MOFs and functional MOFs. Possible interactions between the POPs and active sites on the MOFs are discussed to understand the adsorption/photocatalysis mechanism. The outlooks on adsorptive removal and photocatalytic degradation of POPs using MOFs are given, albeit often with barriers as addressed. The integration of adsorption and photocatalysis using MOFs is discussed.

Keywords: POPs; MOFs; water decontamination; photocatalysis;

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