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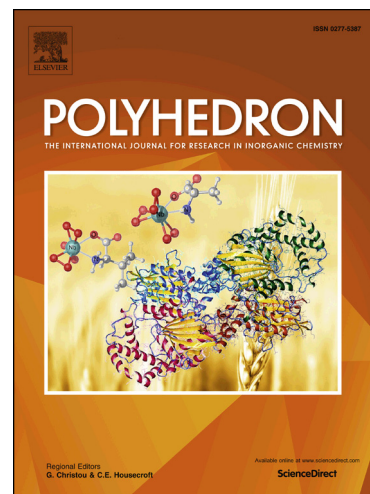
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Study about the highest connected twin Keggin POMs based hybrid compound: synthesis, PPy loading, physical absorption and visible-light photogradation for organic pollutant

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Abstract: A new high-connected twin Keggin polyoxometalates (POM) based metal organic complex (POM@MOC), $[\text{Ag}_{28}(\text{trz})_{18}][\text{HPW}_3^{\text{V}}\text{W}_9^{\text{VI}}\text{O}_{40}]_2 \cdot 2\text{H}_2\text{O}$ ($\text{Ag}_{28}\text{P}_2\text{W}_{24}$) ($\text{trz} = 1,2,3\text{-triazole}$), has been synthesized and structurally characterized. Single crystal X-ray analysis reveals that the new compound contains two unprecedented [10,10] connected Keggin POMs, which represents the highest connection number of POMs to any mixed-connected POM@MOCs to date. Another fascinating structural feature is that the twin Keggin POMs respectively dominates and fabricates two kinds of helices in the POM@MOCs. In addition, to improve the photocatalytic activity of the new compound $\text{Ag}_{28}\text{P}_2\text{W}_{24}$, its polypyrrole (PPy) composite (PPy/ $\text{Ag}_{28}\text{P}_2\text{W}_{24}$) has been prepared and exhibits good uptake capacities and photocatalytic degradation for Rhodamine B dye under the visible light.

Keywords: Polyoxometalate; Metal Organic Complexes; Helix; Polypyrrole; Photocatalyst

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