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Multifunctional hollow mesoporous organic polymeric nanospheres (HMOPs) as effective heterogeneous catalysts with enhanced activity in green asymmetric organocatalysis

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Graphical Abstract



The first controllable fabrication of hollow mesoporous organic polymeric nanospheres (HMOPs) with pure intriguing mesopores using low-cost and commonly available materials is developed by metal ion-adsorbed, *in-situ* forming metal hydroxide or phosphate-expanded technique and removal of templates. After sulfonated and immobilized by organocatalyst, the functional HMOPs displays significantly enhanced catalytic performances in heterogeneous asymmetric organocatalysis.

Highlights

- 1. First fabrication of hollow mesoporous organic polymers.
- 2. High acid capacity and effective immobilization of organocatalyst.
- 3. Enhanced catalytic performances due to hollow interior and mesoporous shell.
- 4. Asymmetric aldol addition and double-Michael organocascade in green manner.
- 5. Good reusability without significant loss in catalytic performances.

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