Poster Presentation

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Shape memory nanopores in a porous MOM

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Flexible porous metal-organic materials (MOMs) change their structure in response to environmental changes or molecular interactions at solid-gas or solid-liquid interfaces, light, pressure or temperature but recover their original configuration after the guest has been removed.1 Flexible MOMs are of special interest because their extra-large surface area and modular nature offers potential utility in gas storage, gas separations, drug release, molecular sensors and catalysis. However, the design of porous materials with empty shape-switchable pores remains a formidable challenge.2,3 Here we have prepared a X-pcu-3-Zn, primitive cubic (pcu) unit three-fold interpenetrated zinc paddle-wheel MOM, showing rare phenomena to undergoes from flexible to rigid framework and induces dynamic shape-memory nanopores. Which we attribute to the use of X-ligands, was gained by insight into in-situ coincidence XRPD for guests such as CO2, N2 and CO. Further in detail experimental work going to present in poster.

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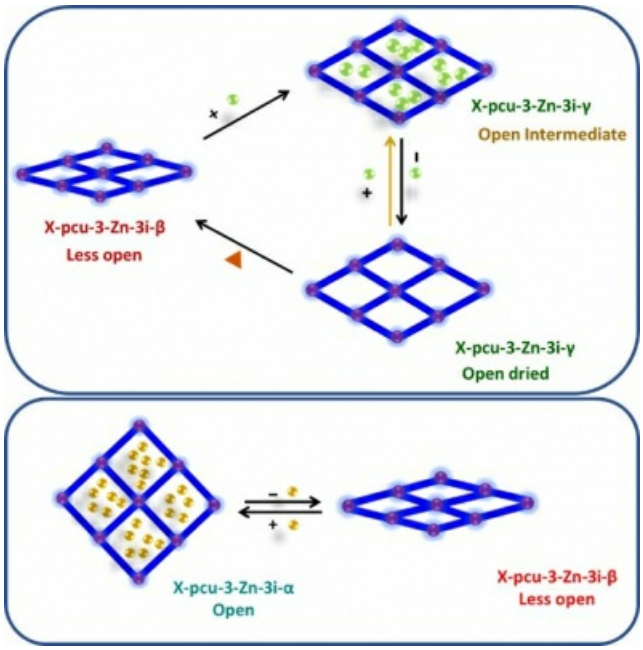

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