

Functionalization induced breathing control in flexible MOFs

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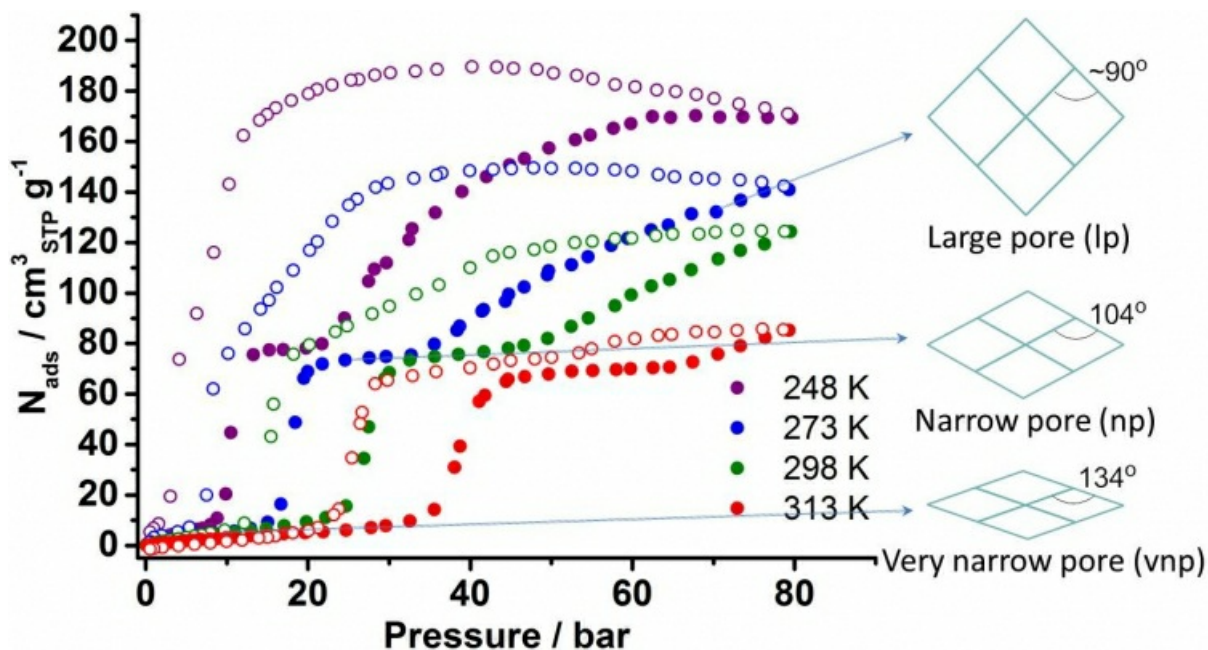
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Flexible metal-organic frameworks stand at a commendable position in crystalline porous materials due to its peculiar switching of porosity upon certain stimuli (gas pressure, temperature, polarity of gas etc.) that is advantageous for certain applications. Such materials has been very rare in number and til date it is very difficult to predict this behavior a priori. In this work, we focus on design and synthesis of a particular family of flexible MOFs viz. MIL-53 family that is proven to show certain flexibility in presence of different solvent/gas. We synthesized hydrophobic and hydrophilic group functionalized MILs to comprehend the polarity and activity relationship towards gas sorption.

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