

Synthesis, structure and adsorption study on a Cu-succinic metal organic framework

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Metal Organic Frameworks (MOFs) have obtained great consideration as carbon dioxide adsorbents, due to their particularly high pore volume and the possibility to shape their pore structures [1-3]. Even though, MOFs can be unstable [4]; hence, the purpose of the reported research was the synthesis of a relatively thermally stable Cu-succinic metal organic framework (Cu-Su-MOF), their

structural characterization and the investigation of their adsorption properties. The questions to be answered were the elucidation of their structure, thermal stability, and the relation between framework expansion during high pressure adsorption and the structure of the degassed material. The as-synthesized and degassed materials were studied with scanning electron microscopy, energy dispersive X-ray analysis, diffuse reflectance infrared and Raman spectrometry, thermo-gravimetric analysis, X-ray diffraction, magnetic measurements and low and high pressure carbon dioxide adsorption.

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