CO_2 adsorption and catalytic property of the mesoporous metal organic framework MIL-101

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The mesoporous chromium terephthalate MIL-101 was hydrothermally synthesized and its adsorption and catalytic properties were investigated. High pressure CO2 adsorption properties were measured and found to be higher than those of inorganic mesoporous materials made of silica, carbon, or aluminophosphate. Catalytic performance of MII-101 was evaluated in liquid phase oxidation of tetralin and compared with those of other Cr-containing mesoporous materials, demonstrating high activity and selectivity to 1-tetralone.