

Temperature Effects on CO₂ Intake of MIL-101 and ZIF-301

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Abstract : Metal-organic frameworks (MOFs) are promising materials for CO₂ capture and they have high adsorption capacity towards CO₂. In this study, two different metal organic frameworks (i.e. MIL-101 and ZIF-301) were tested for different flue gases that have different CO₂ fractions. In addition, the effect of temperature was investigated for MIL-101 and ZIF-301. The results show that MIL-101 performs well for pure CO₂ stream while its intake decreases dramatically for other flue gases that have variable CO₂ fraction ranging from 5 to 15 %. The second material (ZIF-301) showed a better result in all flue gases and higher CO₂ intake compared to MIL-101 even at high temperature.

Keywords : CO₂ capture, Metal Organic Frameworks (MOFs), MIL-101, ZIF-301

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