Transformable Single-Crystal Adsorbent Based on 1-D Coordination Polymer Skeletons

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Recently, we found a single crystal host, $[M(II)_2(bza)_4(pyz)]_n$ (bza and pyz = benzoate and pyrazine, M = Rh and Cu), which is suitable for the study of gas-containing structure through gas adsorption. They generated gas inclusion crystals by transition from a closed α to an open β phase through the process of smooth physisorption; guest gases are adsorbed into the generated narrow channels of the β lattice. I will present a new convenient procedure for crystallizing gas into a co-single crystal state by putting the crystal adsorbent in a gaseous guest atmosphere, which is efficient to ascertain the exact molecular/atom structures with high resolution for included light aggregates.[1]

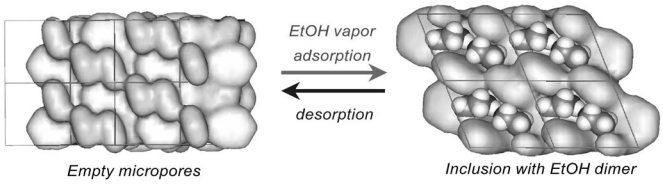

Fig. An exampple: ethanol dimer inclusion formation accompanying bulk phase transition.[2]

[1] a) Takamizawa S., et al., *Angew. Chem. Int. Ed.*, 2003, **42**, 4331.; b) Takamizawa S., et al., *Angew. Chem. Int. Ed.*, 2004, **43**, 1368-1371.; c) Takamizawa S., et al., *Inorg. Chem.*, 2005, **44**, 1362. [2] Takamizawa S., et al., *Inorg. Chem.*, 2005, **44**, 1421-1424.

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