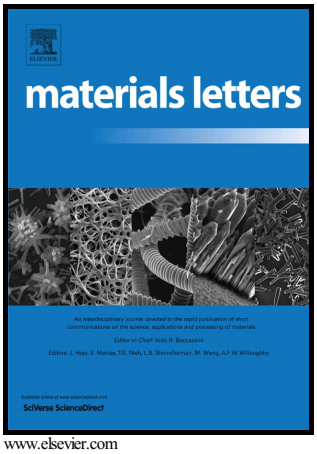

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Synthesis of Zn-BTC metal organic framework assisted by a home microwave and their unusual morphologies

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Abstract

A metal organic framework with a unique form was prepared using the conventional microwave and changing the ratio between metal (zinc) and ligand (1,3,5 tricarboxylic acid). The powder X-ray diffraction (PXRD) shows that the increase of metal content in the synthesis give materials more crystallinity as seen in the scanning electron microscope (SEM). Moreover, by SEM the ratio 1:4 (ligand:metal) exhibited a unique cauliflower like sctruture with average size of 16.9 $\pm$ 4.7 µm.

Key Word: Microstructure, crystal grown; porous materials.

1. Introduction

The metal organic frameworks (MOFs) are a materials class of coordination polymers [1-3]. These are crystalline hybrid materials, where the crystal structure is consisting of extended 3D networks of metals clusters connected through organic spacers[4]. The synthesis of MOFs has gained much space in the last decades due to the large applicability of these promising materials