

عنوان مقاله:

N-oxide Functionalization of UiO-66 via Solvent-Assisted Ligand Incorporation: Synthesis and Cr(VI) Adsorption Studies

محل انتشار:

بیستمین کنگره شیمی ایران (سال: 1397)

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خلاصه مقاله:

Porous metal–organic frameworks (MOFs) are hybrid solid-state compounds that have attracted voluminous research efforts for applications relevant to gas storage and separation, chemical catalysis, and optoelectronic and thermoelectric devices[1]. However, many of these applications require recyclability, which is intimately tied to the stability of the corresponding frameworks in ambient conditions as well as in the presence of water. It is worth noting that only a modest fraction of the total known MOFs are both thermally and chemically stable. Among the known MOF materials, Zr-based MOFs have been intensively studied, because of their superior stability against moist atmosphere, aqueous solutions, as well as basic or acidic media[2]. The robustness arising from the kinetic inertness of the Zr–carboxylate bonds enables advanced applications in MOF systems. Solvent-assisted ligand incorporation (SALI) is useful for functionalizing the channels of metal–organic framework (MOF) materials such as UiO-66 that offer substitutionally labile zirconium(IV) coordination sites for nonbridging ligands[3,4]. Utilizing SALI, we have efficiently attached the isonicotinate N-Oxide (INO) carboxylates on the Zr₆ nodes of UiO-66. This N-oxide-functionalized .mesoporous MOF, termed herein SALI-n, were studied experimentally as potential Cr(VI) adsorbent material

کلمات کلیدی:

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