

عنوان مقاله:

Study of characteristics of metal-organic frameworks for gas adsorption

محل انتشار:

هفدهمین کنگره ملی مهندسی شیمی ایران (سال: 1400)

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خلاصه مقاله:

Metal organic frameworks (MOFs) represent a new class of nanoporous materials that have many potential advantages over traditional nanoporous materials for various chemical technologies such as gas adsorption, catalysis and membrane-based gas separation. Knowledge of the interaction of host molecules with the MOF surface is essential for the design and development of these MOF-based processes. Loading host molecules is a critical step for most porous material applications. In the case of organic frameworks structures, which are one of the most studied categories of porous materials. In this article, Liquid phase adsorption of mercaptan compounds over Ag³⁺-loaded Cu-BTC metal organic frameworks and Ag/Cu- loaded activated carbon has been studied to realize the efficacy of adsorbents the adsorption process. A magnificent mercaptan removal capacity was observed for Ag@Cu-BTC MOFs. This favorable adsorption capacity seems to be due to three different types of Cu-BTC pores and π -complexation .between Cu (in the MOFs structure) and Ag (impregnated on adsorbent) with mercaptan compounds

کلمات کلیدی:

adsorption characteristics, Metal-organic framework, complexation

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