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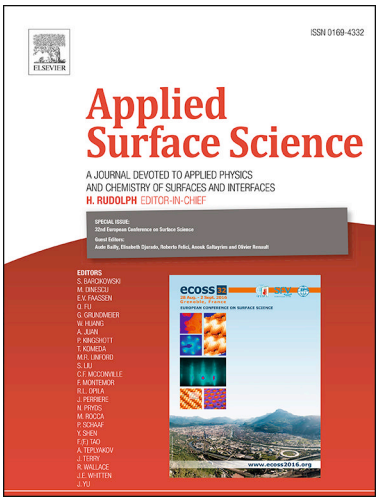

Full Length Article

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Selective dye adsorption by highly water stable metal-organic framework: long term stability analysis in aqueous media

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Abstract

A highly water stable metal-organic framework (MOF) based on zirconium, i.e. UiO-66, was synthesized and then employed to adsorptive removal of an anionic dye, methyl orange (MO), and a cationic dye, methylene blue (MB), from aqueous solution. In this work, for the first time, the long term stability of UiO-66 in water was investigated for 12 months. X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM) and N_2 adsorption/desorption analysis were employed to monitor the textural alteration of UiO-66 during water aging. The results indicated that the structure of UiO-66 was mostly retained and its adsorption capacity toward dyes exhibited minor loss after long term water aging. Experimental data showed that adsorption capacity of UiO-66 toward MO was higher than

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