

عنوان مقاله:

Synthesis and Application of Silica Aerogel-MWCNT Nanocomposites for Adsorption of Organic Pollutants

محل انتشار:

سومین کنفرانس نانوساختارها (سال: 1388)

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خلاصه مقاله:

Silica aerogel– Multi wall carbon nanotube composite are synthesized successfully with water glass precursor and ambient pressure drying method. Pure silica aerogels are so fragile that cannot be used practically. Carbon nanotube (MWCNT) is used as reinforcement for strengthen mechanical properties of pure silica aerogels. Different percentages of MWCNT at different stages of synthesis were added to reach best quality of reinforced aerogels. Results showed that inserting small amount of MWCNT caused to reach monolith silica aerogels. In best amount of added MWCNT, monolith nanocomposite was produced with 800 m²/g surface area and 140° contact angle. Results show that silica aerogels and reinforced composites have excellent adsorption property for organic pollutants removal from water. Adsorption capacity of about 5 times of composite weight for adsorption of benzene, toluene, n-Hexane, kerosene, gasoline and petroleum was observed.

کلمات کلیدی:

Silica aerogel; MWCNT; Nanocomposite; Adsorption; Organic pollutants

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