

Materials Research Science and Engineering Center
(MRSEC)
Summer 2000 Participant



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Adsorption Experiments Using Macroporous Sieves

Hybrid inorganic –organic mesoporous molecular sieves will be applied to the adsorption of perfume chemicals and chlorinated pollutants in aqueous environments. UOFMN (unified organically functionalized mesoporous networks) and PMO (periodic mesoporous organosilicas) materials will be synthesized and tested in organic adsorption studies. These materials have a porous organosilicate framework in which Si atoms are bridged by ethane or ethylene groups. Like their pure inorganic analogues, such as MCM-41, they have uniform pore size and high surface area. The organic components of the hybrid frameworks make them better suited for adsorbing organic solvents than inorganic molecular sieves. Adsorption studies will be monitored using UV/visible spectroscopy and gas chromatography.