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Inelastic Incoherent Neutron Scattering Studies of the Ti-doped hydrogen-adsorbed SBA-15 ALICE I. ACATRINEI, LUKE L. DAEMEN, MONIKA A. HARTL, Los Alamos National Laboratory, LANSCE-LC — The discovery in 1998 of the hydrothermally stable SBA-15 by Zhao et al. [1] represents a great advance in the synthesis of ordered mesoporous materials. The high porosity, good thermal stability, and low specific weight of these materials makes them good candidates for hydrogen storage research, and metal doping shows an enhancement of their properties and gas storage capabilities. We used inelastic incoherent neutron scattering to look at both Ti-doped and undoped hydrogen adsorbed SBA-15. Powder XRD measurements confirmed the mesoporosity of the material. Adsorbtion isotherm showed that a significant amount of hydrogen was adsorbed in the compound. Our results indicate that hydrogen bonds to the Ti centers in the material.
[1]. D. Zhao, J. Feng, Q. Huo, N. Melosh, G.H. Fredrickson, B.F. Chmelka, G.D. Stucky, Science 279 (1998) 548.

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