

Abstract Submitted
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Analysis of hydrogen sorption characteristics of boron-doped activated carbons¹ M. BECKNER, J. ROMANOS, D. STALLA, E. DOHNKE, A. SINGH, M. LEE, G. SUPPES, M.F. HAWTHORNE, P. YU, C. WEXLER, P. PFEIFER, U of Missouri — There is significant interest in the properties of boron-doped activated carbons for their potential to improve hydrogen storage.² Boron-doped activated carbons have been produced using a novel process involving the pyrolysis of a boron containing compound and subsequent high-temperature annealing. In this talk we will present a systematic study of the effect of different boron doping processes on the samples' surface area, micropore structure, and hydrogen sorption. Experimental results include boron content from prompt gamma neutron activation analysis, boron-carbon chemistry from Fourier transform infrared spectroscopy (FTIR), nitrogen subcritical adsorption, and 80K and 90K hydrogen adsorption isotherms which allow us to evaluate the hydrogen binding energy for each sorptive material.

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²See <http://all-craft.missouri.edu>

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