

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

The effect of KOH:C and activation temperature on hydrogen storage capacities of activated carbons¹ TYLER RASH, MATT BECKNER, JIMMY ROMANOS, ERIC LEIMKUEHLER, ALI TAKEEI, GALEN SUPPES, CARLOS WEXLER, PETER PFEIFER, University of Missouri — The Alliance for Collaborative Research in Alternative Fuel Technologies (ALL-CRAFT²) has been producing high surface area activated carbons. Here we will investigate the effect of the ratio of activating agent to carbon and activation temperature on hydrogen sorption characteristics and sample structure. Results show that a ratio of 3:1 KOH:C and an activation temperature of 790 C are the ideal activation conditions for hydrogen storage applications. Hydrogen sorption measurements are completed using a volumetric instrument that operates at pressures up to 100 bar and at temperatures of 80 K, the sublimation temperature of dry ice (-78.5 C), and room temperature. Specific surface area and pore size distributions are measured using subcritical nitrogen isotherms.

¹This material is based on work supported by the US Department of Defense under Awards No. N00164-07-P-1306 and N00164-08-C-GS37, the US Department of Energy under Awards No. DE-FG02-07ER46411 and DE-FG36-08GO18142.

²See <http://all-craft.missouri.edu>

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Date submitted: 14 Dec 2010

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