Fabrication Procedures and Material Properties of Activated Carbon for Hydrogen and Methane Storage\textsuperscript{1} JEFFREY POBST, JACOB BURRESS, MIKAEL WOOD, MATTHEW BECKNER, PARAG SHAH, MICHAEL GORDON, Univ. of Missouri-Columbia, PHILLIP PARILLA, NREL, SARAH BARKER, SARA CARTER, LAUREN ASTON, GALEN SUPPES, PETER PFEIFER, Univ. of Missouri-Columbia — The Alliance for Collaborative Research in Alternative Fuel Technology (http://all-craft.missouri.edu) has developed nanoporous biocarbons with interesting pore characteristics. These carbons are being optimized for hydrogen and methane vehicular storage. Our current best performer stores 73-91 g H\textsubscript{2}/kg carbon at 77 K and 47 bar, and 1.0-1.6 g H\textsubscript{2}/kg carbon at 293 K and 47 bar. The validity of using methane storage as a predictor for hydrogen storage will be presented. Recent carbons have achieved porosities as high as of 0.8 and BET surface areas of 3,500 m\textsuperscript{2}/g. Optimal pore sizes and volumes will be presented for hydrogen storage nanoporous carbon.

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