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**Activated carbon monoliths for methane storage** NAGARAJU CHADA, JIMMY ROMANOS, RAMSEY HILTON, GALEN SUPPES, JACOB BURRESS, PETER PFEIFER, University of Missouri — The use of adsorbent storage media for natural gas (methane) vehicles allows for the use of non-cylindrical tanks due to the decreased pressure at which the natural gas is stored. The use of carbon powder as a storage material allows for a high mass of methane stored for mass of sample, but at the cost of the tank volume. Densified carbon monoliths, however, allow for the mass of methane for volume of tank to be optimized. In this work, different activated carbon monoliths have been produced using a polymeric binder, with various synthesis parameters. The methane storage was studied using a home-built, dosing-type instrument. A monolith with optimal parameters has been fabricated. The gravimetric excess adsorption for the optimized monolith was found to be 161 g methane for kg carbon.

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