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***Carbide Derived Carbon Production at MSU***

Carbide Derived Carbons (CDCs), are unique materials in that their porosity can be carefully tuned based upon the precursor carbide from which they are derived. CDCs have many potential applications in the fields of material science and engineering including, but not limited to: separations; fuel cells; supercapacitors; gas storage; and tribology. CDCs are commonly produced using halogenation (chlorine being the most commonly utilized halogen) at high temperature, in which the halogen reacts with non-carbon elements in the carbides to form volatile halide species. The reactive vaporization of non-carbon elements accounts for the regular porosity, which can be controlled by altering parameters such as initial carbide, reaction temperature, and halogen species. This poster reports efforts to synthesize and characterize CDCs using both conventional and novel synthesis approaches, with the aim of understanding relationships among CDC processing, structure, properties and performance, along with assessing commercial-scale production.

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