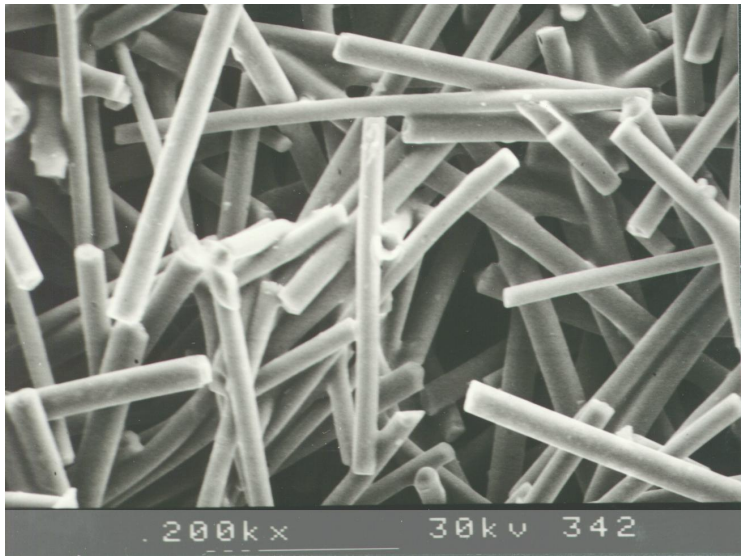
Carbon Fiber Based Monoliths for Natural Gas Storage

These unique activated carbons are being evaluated as storage media for natural gas powered vehicles. Our novel carbon monoliths have the potential to store natural gas at much lower pressures, in the physically adsorbed state, than is required for pressurized natural gas storage (500 psi cf. 3000 psi). The monoliths can attain large micropore volumes within the carbon fibers, and possess a continuous carbon skeleton, thus rendering them electrically conductive. Their large storage capacity, combined with electrical desorption, allows for a high delivered volume of gas. Moreover, the monoliths exhibit a thermal conductivity in excess of that of packed adsorbent carbon beds, reducing the temperature changes that occurs during tank charging and discharging.



Carbon Monolith Properties

Density =	0.4-0.7 g/cm^3
Comp. Strength =	>2 MPa
Electrical Resistivity =	130-300 mΩ•cm
Thermal Conductivity =	0.25 W/m•K
Micropore Volume =	0.4 - 0.8 cm^3/g
BET Surface Area =	800-1600 m^2/g
NG Storage Capacity =	> 100 v/v

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