

## Name of the Technology: Carbon foam



## Summary:

Carbon foams are sponge-like high performance engineering materials in which carbon ligaments are interconnected to each other. Carbon foams can be graphitic or non-graphitic, depending on the way they have been prepared: precursor and thermal treatment. The precursors of non graphitic foams are mainly phenol or resorcinol crosslinked with formaldehyde, polyurethane, furfural resin, polyvinylidene chloride, etc. In contrast, graphitic foams can be prepared from coal, pitch and similar graphitizable materials. The properties of the foam is depends upon ligaments and pore size. Carbon foams are expected to give certain contributions to modern technology. NPL has developed light weight carbon foam by simple low cost technique and Figure shows the optical and SEM images of carbon foam. The carbon foam possesses the following properties;

Bulk Density (g/cc)	0.40-0.50		
Porosity (%)	>70		
Compressive Strength (MPa)	4.0-6.0		
Electrical Conductivity (S/cm)	75-100		
Thermal Cond. (W/m.K)	40-60		



**Applications:** As containers for active materials for thermal energy storage, electrodes of electrochemical devices (Lithium ion and Lead acid batteries) and electric energy storage, adsorbents for large molecules, EMI shielding material for microwave absorption and high temperature insulation, filters, demisters etc. **Advantages:** Low cost and indigenously developed

## Choose the Readiness level of the Technology:

Idea	Concept Definition	Proof of Concept	Prototype	Lab Validation	Technology Development	Technology Demonstration	Technology Integrated	Market Launch





Related Patents: Patent No: US20150305211A1/ 3615 DEL2012 Country: USA and India Publication Date: 2014/5/30 Grant Date: not available Year of Introduction: 2012 Broad Area/Category: Chemical Engineering / Energy User Industries: battery, strategic, thermal managements etc