Multifunctional carbon foams

Krisztian Kordas,¹ Olli Pitkänen,¹ Geza Toth,¹ Tung Ngoc Pham² and Jyri-Pekka Mikkola²

¹Microelectronics Research Unit, University of Oulu, FI-90570, Oulu, Finland
²Technical Chemistry, Department of Chemistry, Chemical-Biological Center, Umeå University, SE-90187, Umeå, Sweden

Abstract

Melamine foams pyrolyzed at temperatures above 600 °C offer a versatile light weight, flexible, porous and electrically conductive platform to be used in a broad field from environmental and chemical engineering to electrical applications. In our work, we demonstrate selective liquid absorption and water purification, monolith-type catalyst support, mechanical damping, piezoresistive strain sensing as well as flexible supercapacitor devices that are based on such graphitized scaffolds.¹³

References