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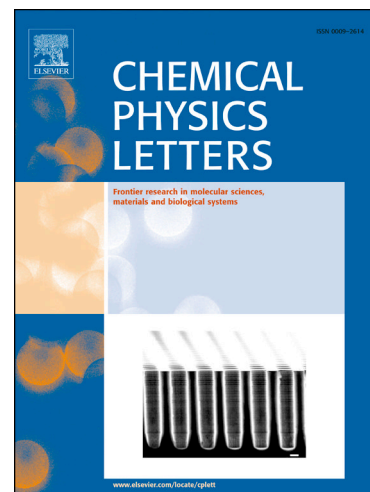
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Super High-rate Fabrication of High-purity Carbon Nanotube Aerogels from Floating Catalyst Method for Oil Spill Cleaning

Hamed Khoshnevis^{1,2}, Sandar Myo Mint¹, Emily Yedinak³, Thang Q. Tran¹, Ali Zadhoush², Mostafa Youssefi², Matteo Pasquali³, Hai M. Duong^{1*}

¹Department of Mechanical Engineering, National University of Singapore, 9 Engineering Drive 1, EA-07-05, Singapore 117575, Singapore

²Department of Textile Engineering, Isfahan University of Technology, 84156-83111, Isfahan, Iran

³Department of Chemistry, Department of Chemical & Biomolecular Engineering, Department of Materials Science & NanoEngineering, The Smalley Institute for Nanoscale Science & Technology, Rice University, Houston, Texas 77005, United States

Abstract

In this study, we apply an advanced floating catalyst method to fabricate carbon nanotube (CNT) aerogels at super high deposition rate for oil spill cleaning. The aerogels consist of 3D porous network of stacking double-walled CNT bundles with low catalyst impurity (9%) and high thermal stability (650 °C). With high porosity, surface areas, and water contact angles, the CNT aerogels exhibit a high oil adsorption of up to 107 g/g and good reusability of up to four adsorption-burning cycles. This work suggests that the lightweight, porous, and super hydrophobic CNT aerogels can be promising sorbent materials for environmental applications.

Keywords: carbon nanotube aerogel; floating catalyst method; oil spill cleaning; oil adsorption kinetics¹

*Corresponding author. Email: mpedhm@nus.edu.sg (Hai Minh Duong)

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