
Fullerenes, Nanotubes, and Carbon Nanostructures – 213th ECS Meeting

Editor:**F. D'Souza**Wichita State University
Wichita, Kansas, USA**Sponsoring Division:****Fullerenes, Nanotubes, and Carbon Nanostructures**Published by
The Electrochemical Society65 South Main Street, Building D
Pennington, NJ 08534-2839, USA

tel 609 737 1902

fax 609 737 2743

www.electrochem.org**ecstransactions™****Vol. 13 No. 14**

Copyright 2008 by The Electrochemical Society.
All rights reserved.

This book has been registered with Copyright Clearance Center.
For further information, please contact the Copyright Clearance Center,
Salem, Massachusetts.

Published by:

The Electrochemical Society
65 South Main Street
Pennington, New Jersey 08534-2839, USA

Telephone 609.737.1902
Fax 609.737.2743
e-mail: ecs@electrochem.org
Web: www.electrochem.org

ISSN 1938-6737 (online)
ISSN 1938-5862 (print)

ISBN 978-1-56677-671-4 (PDF)
ISBN 978-1-60768-023-9 (Softcover)

Printed in the United States of America.

Table of Contents

<i>Preface</i>	<i>iii</i>
----------------	------------

Chapter 1 Electron Transfer and Applications of Fullerene and Nanostructured Materials

Recent Developments in the Thermally Activated Delayed Fluorescence of Fullerenes	3
---	---

C. Baleizão and M. N. Berberan-Santos

Carbon Nanotube Yarn Actuators: An Electrochemical Impedance Model <i>T. Mirfakhrai, J. Oh, M. Kozlov, S. Fang, M. Zhang, R. Baughman and J. Madden</i>	13
--	----

Chapter 2 Molecular and Supramolecular Chemistry of Fullerenes and Carbon Nanotubes

Selective Dispersion of Single-Walled Carbon Nanotubes with Phenylene Based π -Conjugated Polymers	31
--	----

Y. Zhao, N. Rice, N. Zhou and I. Mahmud

Chapter 3 Carbon Nanotubes and Nanostructures: Fundamental Properties and Processes

Preparation of the Capsule-like Carbon Tubes via a Facile Solvothermal Route <i>D. S. Yuan, Y. Liu and L. Chen</i>	43
---	----

Morphology, Acoustic Phonon Confinement, Phonon-induced Strain and Dielectric Permittivity of Nominally Undoped Nano- and Micro-Crystalline Diamond <i>V. Ligatchev</i>	49
--	----

Chapter 4

Carbon Nanotubes and Nanostructures: Applications and Devices

Aligned Carbon Nanotube Structures <i>S. Mirza and H. Grebel</i>	57
Mass-Production of Passivated CNTFETs: Statistics and Gate-Field Dependence of Hysteresis Effect <i>L. Rispal, T. Tschischke, H. Yang and U. Schwalke</i>	65
Electrochemical Capacitance from Carbon Nanotubes Decorated with Cobalt Oxide Nanoparticles in Alkali Electrolyte <i>C. Heish and J. Lin</i>	73

Chapter 5

Energetics and Structure and Solid-State Physics

Extra-Inversion Charge Enhancing Substrate Current During Increased Substrate Bias in 90 nm Process <i>M. Wang, Z. Hsieh, C. Tu, S. Chen, H. Chen, A. Chuang, H. Huang and S. Chou</i>	93
Cage-Like Based Materials with Carbon and Silicon <i>P. Melinon and B. Maserelli</i>	101

Chapter 6

Carbon Nanotubes and Nanostructures: Medicine and Biology

Effects of Dendrimer-Functionalized Multi-Walled Carbon Nanotubes on Murine Embryonic Stem Cells <i>D. Cui, H. Zhang, Z. Wang, T. Asahi and T. Osaka</i>	111
Trimetasphere Metallofullerene MRI Contrast Agents with High Molecular Relaxivity <i>D. R. MacFarland</i>	117

Chapter 7

Porphyrins and Supramolecular Assemblies

Oxoporphyrinogens: From Redox and Spectroscopic Probe for Anion Sensing to a Platform for Construction of Supramolecular Donor-Acceptor Conjugates 127

*F. D'Souza, A. Schumacher, J. Hill, P. Karr, Y. Xie, K. Ariga, A. Sandanayaka,
Y. Araki and O. Ito*

Author Index 137