
Nanomaterials for Energy Conversion and Storage

Editors:

G. Amatucci

Rutgers, The State University of New Jersey
New Brunswick, New Jersey, USA

W. Van Schalkwijk

EnergyPlex Corporation
Redmond, Washington, USA

C. Bock

National Research Council of Canada
Ottawa, Ontario, Canada

A. Manthiram

The University of Texas at Austin
Austin, Texas, USA

R. Mantz

Army Research Office
Durham, North Carolina, USA

V. Ramani

Illinois Institute of Technology
Chicago, Illinois, USA

Sponsoring Divisions:

**Battery****Energy Technology****Physical and Analytical Electrochemistry****Fullerenes, Nanotubes, and Carbon Nanostructures**

Published by
The Electrochemical Society

65 South Main Street, Building D
Pennington, NJ 08534-2839, USA
tel 609 737 1902
fax 609 737 2743
www.electrochem.org

ecs transactions™

Vol. 11 No. 31

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 978-1-56677-645-5

Printed in the United States of America.

ECS Transactions, Volume 11, Issue 31
Nanomaterials for Energy Conversion and Storage

Table of Contents

<i>Preface</i>	<i>iii</i>
Synthesis of NiO Nanowires for Use in Lithium Batteries <i>T. Cohen-Hyams, Y. Bhargava, S. Thorne, J. Wilcox and T. Devine</i>	1
Nanocomposite Solid Electrolytes Based on Lithium Perchlorate <i>N. F. Uvarov, A. S. Ulihin, A. B. Slobodyuk, V. Y. Kavun and S. D. Kirik</i>	9
Synthesis and Electrochemical Properties of a Novel Silver Molybdenum Oxyfluoride Perovskite <i>W. Tong and G. G. Amatucci</i>	19
Platinum Coated Fuel Cell Electrodes by Atomic Layer Deposition <i>J. Shim and F. Prinz</i>	27
Effects of Heat Treatments on the Electrocatalytic Activity of Pt-Ru/C for Methanol Oxidation <i>D. Godoi, J. Perez and H. D. Villullas</i>	35
The Influence of Methanol on Oxygen Reduction on Pt Nanoparticles Supported within PAMAM - G4OH Dendrimers as a Cathode for DMFCs <i>I. L. Escalante, J. Ledesma-Garcia, T. W. Chapman and L. A. Godínez</i>	43
Synthesis of Pd-Sn Nanoparticles by Using Ultrasonic Irradiation and their Electrocatalytic Activity for Oxygen Reduction <i>J. Kim, J. Park, T. Momma and T. Osaka</i>	51
Preparation of CdS _x Se _{1-x} Films by Brush Plating Technique and their Characteristics <i>K. R. Murali and E. Elango</i>	61
Novel Non-Precious Metal Electrocatalysts for Oxygen Reduction Based on Nanostructured Cobalt Chalcogenide <i>Y. Feng, T. He and N. Alonso-Vante</i>	67
Stabilization and Characterization of Pt Nanoparticles on HOPG <i>H. C. Halvorsen, C. Bock, B. MacDougall and D. Wang</i>	75

Electroless Deposition of Metals and Alloys for Microelectronics, Nanoelectronics, Piezoengineering and Composites Fabrication	87
<i>T. N. Khoperia and T. I. Zedginidze</i>	
The Pseudocapacitance Behaviors of TiO ₂ (Anatase) Nanoparticles	101
<i>J. Wang, J. Polleux, T. Brezesinski, S. Tolbert and B. Dunn</i>	
Study of Underlying Electrochemical Mechanisms in Nanoscale Amorphous Carbon-Iodine Electrodes	113
<i>P. Barpanda, G. Fanchini and G. G. Amatucci</i>	
Author Index	119