## The Electrochemical Society

# Electrodeposition of Nanoengineered Materials and Alloys 2

at the 212th ECS Meeting

ECS Transactions Volume 11 No.28

October 7 – 12, 2007 Washington, DC, USA

 $\label{printed from e-media with permission by:} \\$ 

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 www.proceedings.com

ISBN: 978-1-60560-199-1

 $Some format issues inherent in the e-media version \, may \, also \, appear \, in \, this \, print \, version.$ 

# 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)

Printed in the United States of America.

ECS Transactions, Volume 11, Issue 28
Electrodeposition of Nanoengineered Materials and Alloys 2

### **Table of Contents**

T	١.		c.,	
$\boldsymbol{r}$	1	e	ta	$c\epsilon$

Electrochemical Formation of Ta and Ti Oxide Etch Masks from an Anodized Al Template for Formation of Quantum Semiconductor Wires  C. L. Arvin and A. Miller	1
Electrochemical Processing of Nanoscale Si Thin Film in a Hydrophobic Room- Temperature Molten Salt Y. Nishimura, Y. Fukunaka, T. Nohira and R. Hagiwara	13
Electrochemical Nucleation and Growth of Copper on Resistive Substrates  A. Radisic, P. Boelen, A. Rosenfeld, J. Hernandez, G. Beyer and P. Vereecken	25
Electroplating of Copper-Alumina Nanocomposite Films with an Impinging Jet Electrode  D. Thiemig, S. Osborne, W. Sweet and J. Talbot	35
Synthesis of Copper Nanostructures by Electrodeposition T. A. Arzhanova and V. G. Kuryavyi	45
Electrodeposition of Sm-Co Permanent Magnets From Aqueous Media J. Wei, M. Schwartz and K. Nobe	53
Interconnection of Multi-Pad Electrodes by "Controlled Anisotropic Extraneous (CAEx) Deposition" of Electroless NiB Film  T. Yokoshima, Y. Yamaji, N. Igawa, Y. Tamura, K. Kikuchi, H. Nakagawa and M. Aoyagi	65
CdS Films Dposited by the Pulse Plating Technique and Their Characteristics <i>K. R. Murali, K. Thilakavathy and R. Ooman</i>	75
Pulse Plated Cadmium Telluride Films and Their Characteristics <i>K. R. Murali, P. Thirumoorthy and V. Sengodan</i>	83
ZnS Flms Deposited by the Pulse Plating Technique and Their Characteristics K. R. Murali, S. Vasantha and K. Rajamma	91

Electrochemical Deposition of Copper Pentagonal Microcrystals G. I. Ostapenko, D. A. Denisova and A. A. Vikarchuk	97
Faster Growth of Cu-Sn Layers Through Reduction-Diffusion Method Using Ionic Liquid Bath at Medium-Low Temperatures  K. Murase, A. Ito and H. Sugimura	103
Characterization of ZnSe Thin Films Prepared by Electrodeposition V. C. Fernandes and L. H. Mascaro	111
Author Index	117