

Nanostructured Materials and Nanotechnology

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Nanostructured Materials and Nanotechnology

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CONTENTS

Preface	ix
Materials Research Society Symposium Proceedings	xi
Size and Shape Dependencies of Nanomaterial Properties: Thermodynamic Considerations	1
Grégory Guisbiers	
Synthesis of Silver Nanostructures by the Polyol Method and their Statistical Analysis Using Design of Experiments	7
Jaime E. Pérez, Adriana B. Arauz, Luis A. García, and José L. Rodríguez	
Characterization of Electron-Beam-Induced Silver Deposition from Liquid Phase	13
Jonathan J. Park, Alexandra Joshi-Imre, Leonidas E. Ocola, and Ralu Divan	
Synthesis of Soluble Carcerands	19
I. Eddy Jiménez-Gutiérrez, K. Erika Sánchez-Montes, Sandra Cortez-Maya, Gabriel Flores-Rojas, and Marcos Martínez-García	
Near-Equilibrium Solubility of Nanocrystalline Alloys	27
Alexander Kirchner, Thomas Riedl, Konrad Eymann, Michael Noethe, and Bernd Kieback	
VLS Synthesis and Characterization of SnO₂ Nanowires	33
Dulce N. Castillo, Tomás D. Becerril, Enrique R. Andrés, Héctor J. Santiesteban, and Godofredo G. Salgado	
ZrO₂ Nanopowders Doped with Eu: SEM, XRD and UV Spectroscopy Studies	39
Gerardo Villa Sánchez, Demetrio Mendoza Anaya, Emmanuel Palma Palma, Claudia E. Gutiérrez Wing, Raúl Pérez Hernández, Oscar F. Olea Mejía, and Federico García Santibañez	

Raman Spectrum Modification of CdSe/ZnS Quantum Dots at the Bio-conjugation to IgG Antibodies.	45
A.I. Diaz Cano, J. Douda, C.R. Gonzalez Vargas, and K. Gazarian	
Effect of Titania Grafting on Behavior of NiMo HDS Catalysts Supported on Nanostructured Silica Materials.	51
A. Mendoza-Nieto, I. Puente-Lee, C. Salcedo-Luna, and T. Klimova	
Integrating Carbon Nanotubes into Microfluidic Chips for Separating Biochemical Compounds	57
Miaoxiang Chen, Klaus B. Mogensen, Peter Boggild, and Jörg P. Kutter	
Characterization of Dispersion of Carbon Nanotubes in Polymer Matrices.	63
Laura Peña-Parás, Hubert Phillips III, and Enrique V. Barrera	
Polymer Nanohybrids with High Electrical Conductivities	69
R. Yañez-Macías, P. González-Morones, C. Ávila-Orta, S. Torres-Rincón, J. Valdéz-Garza, A. Rosales-Jasso, J.G. Telles-Padilla, and A. Saéñz-Galindo	
Study of Fracture Behavior of Polypropylene/MWCNT and Polypropylene/m-MMT Nanocomposites by Small Angle X-ray Scattering (SAXS)	75
José. M. Mata-Padilla, Carlos. A. Ávila-Orta, Francisco. J. Medellín-Rodríguez, Janet. A. Valdéz-Garza, and Adriana Torres-Martínez	
Halide Ion Effect in Shape Transformation from Silver Triangular Nanoprisms to Silver Nanodisks	81
Israel A. López, and Idalia Gómez	
Shape and Stability of Silver Nanoparticles and their Dependence on the Conditions of Preparation.	87
M.I. Hernández-Castillo, O. Zaca-Moran, P. Zaca-Moran, M. Rojas-López, V.L. Gayou, R. Delgado-Macuil, and A. Orduña-Díaz	

Theoretical Study of Alkanedithiolated Gold Clusters.91
J.M. Cabrera-Trujillo, and R. Jiménez-Cataño	
Development and Characterization of Nanocomposites with Gold Nanoparticles Embedded in the Nanostructured Silicon Substrate.99
V.L. Gayou, A. Orduña Diaz, R. Delgado Macuil, M. Rojas López, J.A. Andraca-Adame, and Vivechana Agarwal	
ZrO₂ Doped with Cobalt Nanoparticles to Detect UV Radiation.105
Gerardo Villa Sánchez, Demetrio Mendoza Anaya, Claudia Gutiérrez-Wing, Pedro R. González Martínez, and Oscar F. Olea Mejía	
Effect of Organoclay's Characteristics During the Preparation of Complex Ternary System PP-EP/EVA/Organoclay.111
Olivares M. Yeraldin, Ramírez V. Eduardo, and Sánchez V. Saúl	
Influence of Oxide Nanoparticles of Fe, Al and Si on the Sintered Magnesia for the Production of Refractory Material to be Used in Secondary Ladle Metallurgy117
Cristian Gómez, Tushar. K. Das, Sadasivan Shaji, Edén A. Rodríguez, Ana M. Guzmán, Alan Castillo, and Laura García	
Features of Formation of Composite Nanopowders Based on Al₂O₃ and AlN123
M. Vlasova, P.A. Márquez Aguilar, M. Kakazey, V. Stetsenko, A. Bykov, and T. Tomila	
Transmission of Dirac Electrons Through Graphene Multilayers with Gaussian Profile129
J.A. Aguilar-Hernández, J. Madrigal-Melchor, J.C. Martínez-Orozco, and I. Rodríguez-Vargas	
Transmission for a Finite Superlattice with a Linear Modulation of the Potential Barriers Height.137
K.A. Rodríguez-Magdalenó, J.C. Martínez-Orozco, and D.A. Contreras-Solorio	

**Transmission Properties of Multilayered Period Doubling
and Silver-Mean Graphene Structures.143**
 G. Rodríguez-Arellano, D.P. Juárez-López,
 J. Madrigal-Melchor, R. Pérez-Álvarez,
 J.C. Martínez-Orozco, and I. Rodríguez-Vargas

Author Index151

Subject Index153

PREFACE

The fields of nanoscience and nanotechnology continue to have a major impact in a number of scientific and technological areas such as health, computing, sensing, catalysis, coatings and aerospace, just to mention a few. For the past few years, the Nanostructured Materials and Nanotechnology Symposium during the International Materials Research Congress, has been aiming to provide an international forum for the presentation of the latest developments in nanotechnology and nanomaterials research. In the 2011 edition, as in previous years, a growing community of scientists, researchers, students and industry representatives, have gathered to present and discuss the different topics covered by the symposium, which range from theory to experiment and include new synthetic routes, processing, characterization and modeling of nanomaterials, structure-property correlations at the nanoscale, fundamental phenomena occurring in nanoscale systems and processes, and the design, application and industrial development of nanostructured materials and nanosystems.

This year the symposium also included a session devoted specifically to low dimensional carbon nanostructures, as they are at the forefront of materials research and exhibit novel properties with potential applications in high speed nano-electronics, high performance composites for mechanical, electrical and thermal applications, high efficiency photovoltaics, and field emitters. In this MRS proceedings volume, we have compiled a number of papers, which discuss representative state-of-the-art topics covered by the Nanostructured Materials and Nanotechnology Symposium. Interesting and high quality contributions have been collected, which include theoretical studies on the properties of nanomaterials, the synthesis of metallic nanostructures and nanocomposites, studies on graphene and carbon nanotubes, applications of nanomaterials as UV detectors, biomarkers and catalysis.

We hope you will find this compilation interesting, informative and inspiring for further discussion and for the advancement of the fields of nanoscience and nanotechnology.

The editors

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XX IMRC

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