

SECOND MEXICAN WORKSHOP ON NANOSTRUCTURED MATERIALS

Instituto de Física, Benemérita Universidad Autónoma de Puebla
Puebla, Pue. Mexico. May 15–18, 2007

General Program



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May 15, 2007

Short Courses

10:00 - 13:30 hrs.: **Z-Contrast Electron Microscopy for Evaluation of Inhomogeneous Nanostructured Materials.**- Luis Rendón, LCM-IFUNAM, Mexico.

16:00-19:30 hrs.: **Application of EELS in Nanostructured Materials.**- Miguel Avalos, Centro de Ciencias de la Materia Condensada, UNAM, Mexico.

May 16, 2007

9:00 hrs.: **Inauguration**

Morning Session (9:15 – 13:35 hrs.)

Chair: Marcelino Barboza Flores

9:15 – 10:00 hrs.: (Invited Talk) **Cathodoluminescence of Semiconductor Nanowires.**-

Javier Piqueras. Departamento de Física de Materiales, Facultad de Ciencias Físicas, Universidad Complutense de Madrid, Spain.

10:00 – 10:20 hrs.: (T01) **Efecto de la Implantación de Iones de Al en las Propiedades Ópticas de α - Al_2O_3 .**- L. Herrera-Colín and A. García Bórquez.

10:20 – 10:40 hrs.: (T02) **Study of Defects in $\text{ZnO}:\text{Yb}$ by Cathodoluminescence and Tunneling Microscopy.**- A. Susarrey, M. Herrera, J. Valenzuela, and U. Pal.

10:40 – 11:00 hrs.: (T03) **Directing the Spectroscopic States of CdS Nanoparticles by Chemical Surface Modification.**- M. Quintana, F. Mendez, and E. Pérez.

11:00-11:30 hrs.: Coffee Break.



Chair: Pijush Bhattacharya

11:30-12:15 hrs.: (Invited Talk) **Novel Optical and Dynamic Properties and Emerging Applications of Nanomaterials.**- Jin Z. Zhang, Department of Chemistry and Biochemistry, University of California Santa Cruz, USA.

12:15-12:35 hrs.: (T04) **One-dimension Core-Shell Zn/ZnO Structures Synthesized by Solvothermal Approach.**- M. Trejo, P. Santiago, L. Rendón, M. Villagran Muñiz, M. Sobral, and J. M. Hernández.

12:35 – 12:55 hrs.: (T05) **Solvent-free Obtaining of Co₃O₄ and CuO Nanoparticles.**- Vázquez-Olmos, A. L. Fernández Osorio, R. Sato Berrú, and A. L. Ramos Bautista.

12:55 – 13:15 hrs.: (T06) **TL and OSL properties of TiO₂:Yb nanophosphors.**- Mou Pal, U. Pal, V. Chernov, R. Meléndrez, and M. Barboza-Flores.

13:15 – 13:35 hrs.: (T07) **Effect of UV Light on the Isoelectric Point of Nanosized TiO₂ (Anatase) Sol-Gel Prepared at Different Water/Alkoxide Molar Ratios.**- J. A. Pedraza Avella, P. Acevedo Peña, R. Gómez, and J. E. Pedraza-Rosas.

13:45 – 16:00 hrs.: Lunch Break.

Afternoon Session (16:00- 19:30 hrs.)

Chair: Jin Z. Zhang

16:00 - 16:45 hrs.: (Invited Talk) **Nanostructured semiconductor materials and their applications for renewable energies.**- Gerardo Contreras. Escuela Superior de Física y Matemáticas-IPN, Mexico.

16:45 – 17:05 hrs.: (T08) **The Hydriding Behavior of Nanostructured Mg-Based Alloy Powders.**- A. F. Palacios Lazcano, J. L. Luna Sánchez, L. F. Dámaso Custodio, F. Cruz Gandarilla, and J. G. Cabañas Moreno.

17:05 – 17:25 hrs.: (T09) **Computational Study of Organometallic Structures for Hydrogen Storage.**- A. I. Martinez and M. E. Sanchez.



17:25 – 17:45 hrs.: (T10) **Photoluminescence from Si nanocrystals in a SiO₂ matrix deposited by reactive sputtering.** - J. Carrillo López, G. García Salgado, and M. Meléndez Lira.

17:45 – 18:05 hrs.: (T11) **Nanoparticles of Rhodium for Catalytic Wet Air Oxidation of Gasoline Additives.**- I. Cuauhtémoc, G. Del Angel, G. Torres, and V. Bertin.

18:05 – 19:30 hrs.: Poster Session I (**PI01 - PI39B**)

19:30: Welcome Party (Instituto de Física, BUAP)

May 17, 2007

Morning Session (9:00 – 13:25 hrs.)

Chair: David Diaz

9:00 – 9:45 hrs.: (Invited Talk) **In Situ High Temperature Electron Irradiation Effects in Carbon Nanostructures.**- Humberto Terrones. Advanced Materials Department, IPICyT, Mexico.

9:45 – 10:05 hrs.: (T12) **Molecular Hydrogen Adsorption upon the Fullerene Hemisphere for the (5,5) Carbon Nanotube .**- J. S. Arellano.

10:05-10:50 hrs.: (Invited Talk) **Dynamic Behavior of WO_x/ZrO₂ Nanostructures and Catalytic Efficiency for Oxidative Desulfurization.**- Jorge A. Ascencio. Instituto Mexicano del Petróleo, Mexico.

10:50 – 11:10 hrs.: (T13) **Photocatalytic Activity under VIS-irradiation of Nanoparticles of Bi₂Mo₃O₁₂ Prepared by an Amorphous Complex Precursor.**- A. Martínez-de la Cruz, S. Marcos Villarreal, E. López Cuéllar, U. Oriz Méndez, and L. M. Torres-Martínez.

11:10 – 11:40 hrs.: Coffee Break.



Chair: Javier Piqueras de Noriega

11:40 –12:25 hrs.: (Invited Talk) **Interactions of Cu_2O , SnO_2 , ZnO nanoparticles with different molecular species.**- David Diaz, Guadalupe Osorio-Monreal, Donaji Velasco-Arias, Víctor-Fabián Ruiz-Ruiz, Héctor García-Ortega, Rita Patakfalvi and Luis Ortiz-Frade; Facultad de Química, Universidad Nacional Autónoma de México, Coyoacán, 04510, México D.F., Mexico.

12:25 – 12:45 hrs.: (T14) **Assembly of Bromobenzethiol Functionalized Gold Nanoparticles with the Fluorescent Poly(Phenyleneethynylene) pPET3OC12-sqS for the Detection and Attack to the Fungus *Paecilomyces variotii*.**- J.C. Ramos, E. Vázquez, A. Ledezma, D. I. Medellín, I. Moggio, E. Arias, C. Martínez, J. Romero, and P. García.

12:45 – 13:05 hrs.: (T15) **Energy Transfer Driven Visible Upconversion in $\text{Y}_2\text{O}_3:\text{Yb}^{3+},\text{Er}^{3+}$ Nanorods.**- O. Meza, L. A. Diaz-Torres, P. Salas, C. Ángeles Chávez, A. Martínez, E. de la Rosa, and J. Morales.

13:05 – 13:25 hrs.: (T16) **Preparation and Study of Magnetic – Optically Transparent Nanocomposites.**- M. Garza, M. Hinojosa, and V. González.

13:25- 16:00 hrs.: Lunch Break.

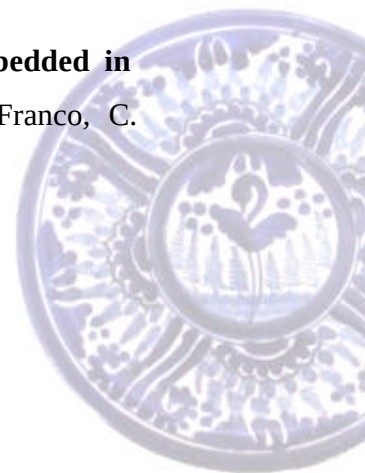
Afternoon Session (16:00 – 19:45 hrs.)

Chair: Felipe Perez-Rodríguez

16:00 - 16:45 hrs.: (Invited Talk) **Third-order Optical Nonlinearities of Metal and Semiconductor Nanostructures.**- Alexandr I. Ryasnyanskiy. Samarkand State University, Uzbekistan.

16:45 - 17:05 hrs.: (T17) **The Monitoring of Process of Laser Irradiation of $\text{Si-Al}_2\text{O}_3$ Sandwich Target.**- M. Vlasova, P. A. Márquez Aguilar, M. C. Reséndiz González, I. González Morales, M. Kakazey, V. Stetsenko, T. Tomila, and A. Ragulua.

17:05 - 17:25 hrs.: (T18) **Study of the Mobility of DR1 Molecules Embedded in Amorphous and Nanostructured PMMA Films.**- J. García-Macedo, A. Franco, C. Aguilar Gutiérrez.



17:25 – 17:45 hrs.: (T19) **Optical Macroscopic Birefringence in Anisotropic Silver Nanoparticles.-** J. A. Reyes-Esqueda, C. Torres-Torres, J. C. Cheang Wong, A. Crespo, L. Rodríguez Fernández, C. Noguez, and A. Oliver.

17:45 – 18:05 hrs.: (T20) **Green Synthesis of Au and Ag Nanoparticles.-** J. García Serrano, A. M. Herrera, P. Salas, C. Ángeles Chávez, and U. Pal.

18:05 – 19:45 hrs.: Poster Session II (PII40 - PII78)

20:00- 23:00 hrs.: **Workshop Dinner.**

May 18, 2007

Morning Session (9:00 - 13:35 hrs.)

Chair: Alexandr Ryanianskiy

9:00- 9:45 hrs.: (Invited Talk) **Nano-structured ZnO Thin Films for Field-emission and Spintornic Application-** Pijush Battacharya. Department of Physics, Fisk University, Nashville, USA.

9:45 – 10:05 hrs.: (T21) **On the homogenization of 1D Phononic Crystals.-** J. Flores Méndez, and F. Pérez Rodríguez.

10:05 - 10:25 hrs.: (T22) **Optical Properties of Disordered Multilayer: A comparison of Periodic, Quasi-periodic and Random Multilayer Heterostructures.-** B. Alvarado Tenorio and V. Agarwal.

10:25 - 10: 45 hrs.: (T23) **Ab-initio Calculations In Small Gadolinium Systems .-** J. F. Rivas Silva, T. Delgado Vitols, and M. Berrondo.

10:45 - 11:05 hrs.: (T24) **Nanoparticles of a Cu-Zn-Al Shape Memory Alloy, Physically Synthesized-** L. López Pavon, E. López Cuéllar, A. Torres Castro, A. M. Condó, U. Ortiz Méndez, and M. José-Yacaman.

11:05 - 11:35 hrs.:Coffee Break.



Chair: Jorge A. Ascencio

11:35 - 11:55 hrs.: (T25) Estudio del Auto-ensamble de Cúmulos de Oro por Coalescencia: Interacción e Impactos.- J. Antúnez García, S. Mejía Rosales, E. Pérez Tijerina, and M. José Yacamán.

11:55 – 12:15 hrs.: (T26) DFT Study of Au_N Icosahedral Cagelike Clusters.- José. L. Rodríguez-López.

12:15 - 12:35 hrs.: (T27) Silver Core-silver Oxide Shell Nanoparticles Embedded in Mesostructured Silica Films.- G. Valverde Aguilar, J. A. García-Macedo, and V. Rentería.

12:35 - 12:55 hrs.: (T28) Gold Nanoparticles on Titania Mixed Oxides: Influence of the Support on the Gold Growth.- V. Rodríguez González, J. Navarrete, F. M. Morán Pineda, B. Cerón, and R. Gómez.

12:55 - 13:15 hrs.: (T29) Photophysical Properties of Nanosized TiO₂-M (M = Cu, Mo) Sol-Gel: on the Reductive Character of the Thermal Dehydroxylation Process.- J. A. Pedraza-Avella, F. Martínez Ortega, E. A. Páez Mozo, and R. Gómez

13:15 - 13:35 hrs.: Una Nueva Herramienta de Inspección, el CrossBeam® combinando un SEM de Emisión de Campo de Ultra Alta Resolución y un FIB de Alta Resolución.- Harumi Kimura. Tecnología y Equipamiento, S. A. de C. V.

13:35 - 16:00 hrs.: Lunch Break.

Afternoon Session (16:00 - 17:30 hrs.)

16:00 – 16:30 hrs.: ISO en la Normalización de la Nanotecnología (ISO/TC229) y su Importancia para las Organizaciones Mexicanas.- Pedro Trujillo Flores. Instituto Mexicano de Normalización y Certificación A. C.

16:30 – 17:00 hrs.: Instauración del Comité Técnico de Normalización Nacional de Nanotecnología.- Pedro Trujillo Flores. Instituto Mexicano de Normalización y Certificación A. C.

17:00 - 17:30 hrs.: Round table

17:30 hrs.: Concluding remarks

