

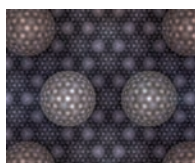


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2009

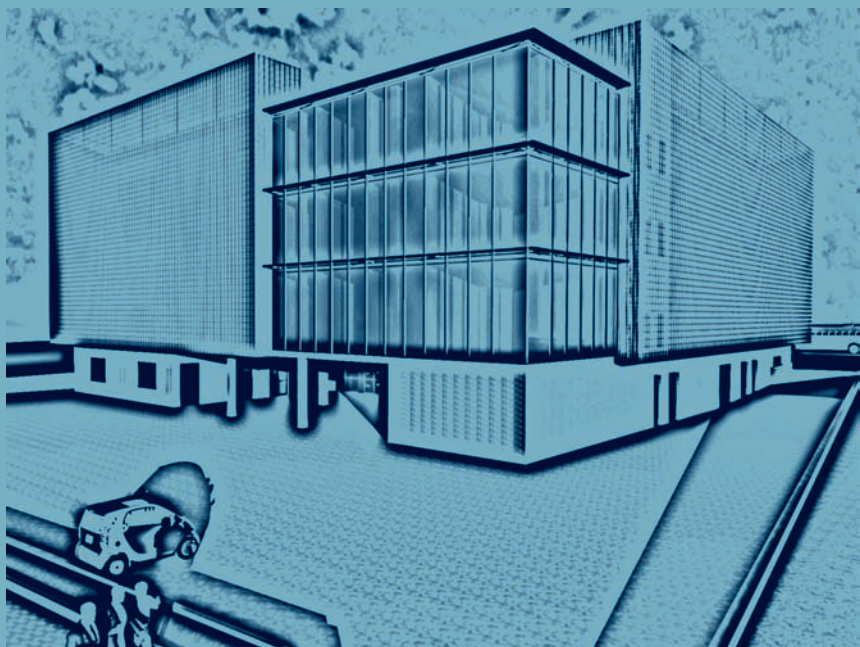
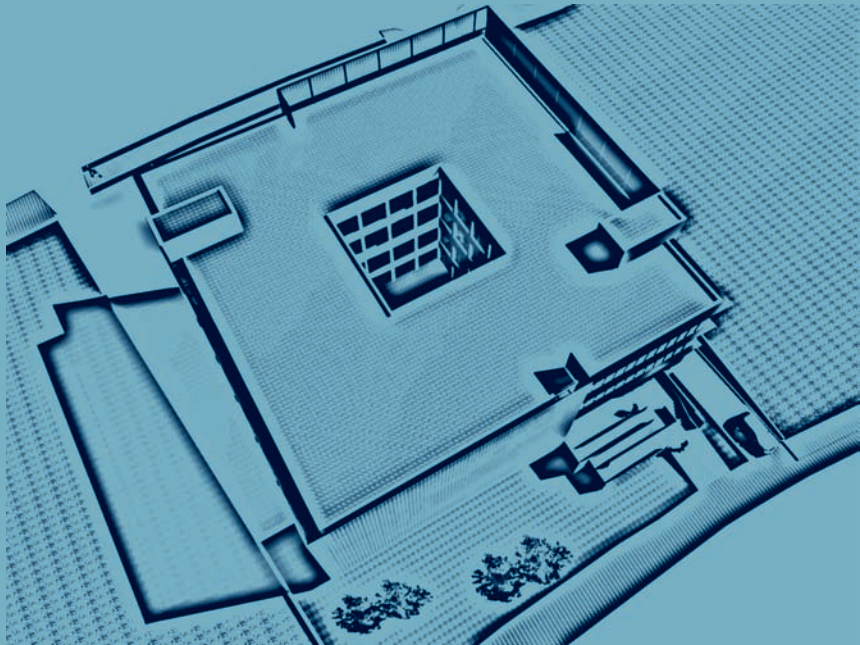
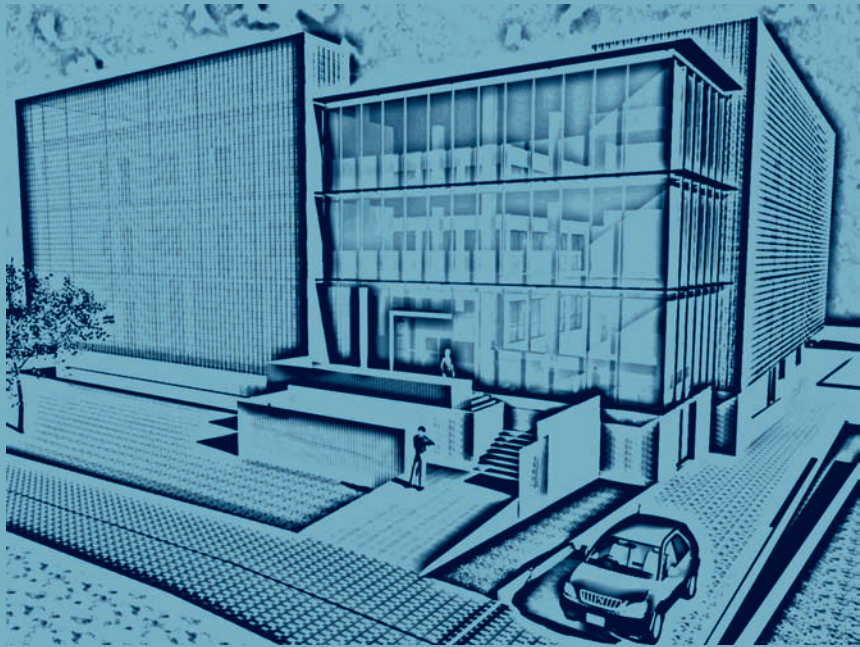


imdea
nanociencia



summary

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1. STAFF

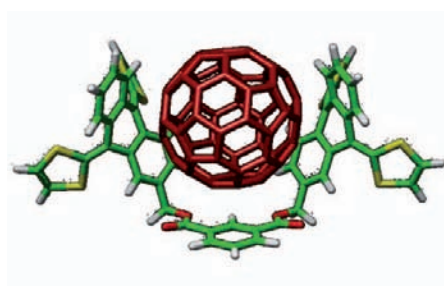
EXECUTIVES

- **General Director.** Prof. Rodolfo Miranda. Full Professor in Condensed Matter Physics. Universidad Autónoma de Madrid (UAM), Spain.
- **Vice-Director.** Prof. Nazario Martín. Full Professor in Organic Chemistry. Universidad Complutense de Madrid (UCM), Spain.
- **Manager.** Dr. Jose Luis Casillas
- **Administration and Finance Manager.** D^a Isabel Rodríguez
- **Projects, Institutional Relations and HR Manager.** Dra. María Jesús Villa

SCIENTISTS

IMDEA Nanociencia Scientists

- **Dr. Johannes Gierschner.** Senior Researcher (Ramón y Cajal Program 2007). Molecular Nanoscience: optical spectroscopy on molecular systems
- **Dr. Reinhold Wannemacher.** Senior Researcher. Semiconducting Nanostructures and Nanophotonics: Nanooptics
- **Dr. Larry Lüer.** Senior Researcher. (Ramón y Cajal Program 2009) Molecular Nanoscience: femtosecond spectroscopy on molecular systems
- **Dr. Aitziber López-Cortajarena.** Researcher. Biomachines and Manipulation of Macromolecules: synthesis of modified oligopeptides
- **Dr. Ricardo Arias.** Research Fellow. (Ramón y Cajal Program 2007). Biomachines and Manipulation of Macromolecules: biomechanic of proteins
- **Dr. Beatriz Hernández.** Research Fellow. (Ramón y Cajal Program 2007). Molecular Nanoscience: nanotubes and quantum dots.
- **Dr. Teresa González.** Research Fellow. (Ramón y Cajal Program 2008) Nanoelectronics and Superconductivity: electric conductivity of single molecules.
- **Dr. Emilio Pérez.** Research Fellow. (Ramón y Cajal Program 2008) Molecular Nanoscience: design and synthesis of functionalized organic molecules.
- **Dr. Juan Luis Delgado.** Research Fellow. (Ramón y Cajal Program 2008). Molecular Nanoscience: design and synthesis of molecular nanostructures and nanomaterials.
- **Dr. Alvaro Somoza.** Research Fellow. Biomachines and Manipulation of Macromolecules. Nanobiomedicine: oligonucleotids and nanoparticles
- **Dr. Daniel Granados.** Research Fellow. Semiconducting Nanostructures and Nanophotonics: optical properties of semiconducting nanostructures
- **Dr. Juan Cabanillas.** Research Fellow. (Ramón y Cajal Program 2009) Semiconducting Nanostructures and Nanophotonics: pump/probe spectroscopy
- **Dr. Mariano Carrión.** CSIC. Spain. Senior Researcher. Biomachines and Manipulation of Macromolecules: nanoomechanic of proteins.



IMDEA Nanociencia Associated Scientists

- **Prof. Nicolás Agrañt.** UAM. Associated Senior Researcher. Nanoelectronics and Superconductivity: electric transport in nanosystems.
- **Dr. Amadeo L. Vázquez de Parga.** UAM. Associated Senior Researcher. Scanning Probe Microscopies and Surfaces: 4K UHV STM inelastic spectroscopy.
- **Dr. Julio Camarero.** UAM. Associated Researcher. Nanomagnetism. Magnetic materials: growth and characterization of magnetic nanomaterials.
- **Dr. Roberto Otero.** UAM. Associated Researcher. Scanning Probe Microscopies and Surfaces: atomic and molecular self-assembly at surfaces.
- **Dr. Marisela Vélez.** CSIC. Spain. Associated Senior Researcher. Biomachines and Manipulation of Macromolecules: biomembranes.

IMDEA Nanociencia Post Doctoral Scientists

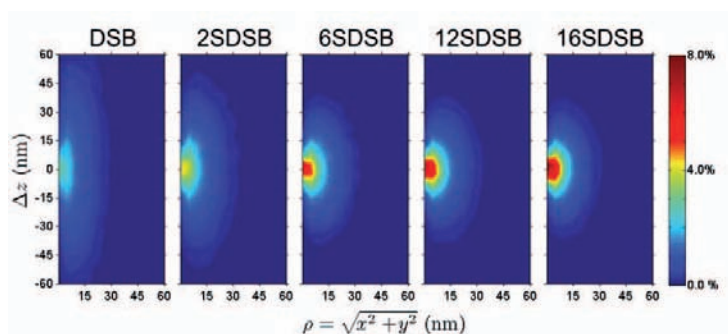
- **Dr. Pierre Antoine Bouit.** Ecole Normal Supérieur-Lyon, France. Molecular Nanoscience.
- **Dr. Edmund Leary.** University of Liverpool, UK. Nanoelectronic and Superconductivity.
- **Dr. Antonio Politano.** Università degli Studi della Calabria, Italy. Scanning Probe Microscopies and Surfaces.
- **Dr. Elías Herrero.** UCM, Spain. Nanobiosystems: biomachines and manipulation of macromolecules.
- **Dr. Paolo Perna.** Laboratoire Université de Caen-Basse Normandie - GREYC, France & CNR-INFN CRS Coherencia, Naples, Italy. Scanning probe microscopies and surfaces.
- **Dr. Francisco Terán.** Université Joseph Fourier-Grenoble I, Grenoble, France & Centro Tecnológico Gaiker. Fundación Gaiker. Vizcaya, Spain. Nanomagnetism.

IMDEA Nanociencia PhD students

- **Manuela Garnica.** UAM. Scanning Probe Microscopies and Surfaces.
- **Adriana Martín.** UCM. Nanobiosystems: biomachines and manipulation of macromolecules.
- **Antonio Estrada.** Universidad de Sevilla, Spain. Scanning Probe Microscopies and Surfaces.
- **Fabiola Iacono.** Universidad de Castellón, Spain. Molecular Nanoscience.
- **José Alberto Morín.** Universidad de La Habana. Cuba. Nanobiosystems: biomachines and manipulation of macromolecules.
- **Daniele Stradi.** Università degli Studi di Trieste, Italia. Molecular Nanoscience.

IMDEA Nanociencia Technical Personnel

- **Pablo Nieto.**



2. SCIENTIFIC PUBLICATIONS

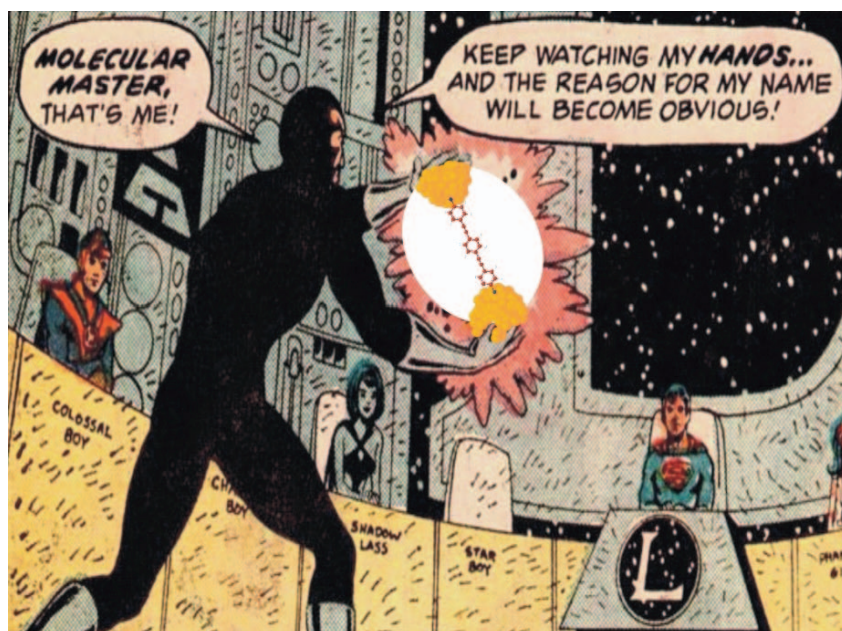
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¹ This article was selected for publication in the American Chemical Society (ACS) Office of Public Affairs; Weekly PressPac. at <http://portal.acs.org> cover art: <http://pubs.acs.org/action/showLargeCover?issue=346390352>

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55. Electronic Properties of Ag and Au Films: Experimental and Theoretical Results Antonio Politano, Shiwu Gao, and Gennaro Chiarello, *Prog. Surf. Sci.* 2009, invited contribution.
56. Alkali-promoted Stabilization of Subsurface Oxygen on Cu(111) Antonio Politano, Antonio Raimondo Marino, and Gennaro Chiarello, *Chem. Phys.*, 2009, in press.



3. INTERNATIONAL CONGRESSES

i. INVITED TALKS

14/01/2009

Workshop on Transport and Molecular Organization in Organic and Bioorganic Electronics. Bologna, Italy
Spatial Control of 3D Energy Transport through Supramolecular Architectures
Dr. Johannes Gierschner

19-20/01/2009

X-Ray Spectroscopy of Magnetic Solids. Saint Aubin-Soleil, France
Soft X-ray magnetic scattering and holography of perpendicular exchange coupled FM/AFM systems
Dr. Julio Camarero

06/02/2009

II Encuentro de Dendrímeros. Universidad de Barcelona, Barcelona, Spain
Desde el reconocimiento molecular cóncavo-convexo a nanoestructuras autoorganizadas
Prof. Nazario Martín

18-20/02/2009

Synthesis and Surface Modification of Nanocolloids. Topical Meeting. Vigo, Spain
Carbon Supported CdSe Nanocrystals **Dr. Beatriz Hernandez**

30/04/2009

Ciba Speciality Chemicals. Basel, Switzerland
Electronic, Optical & Photophysical Properties of Organic Chromophores **Dr. Johannes Gierschner**

25-29/04/2009

Course on Physics & Chemics of Polymers. Louvain la Neuve, Belgium
Spectroscopy of Conjugated Polymers: A Theoretical Approach **Dr. Johannes Gierschner**

08/06/2009

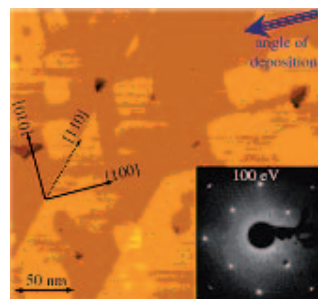
Conference on Optical Probes 2009. Beijing, China
Spatial Control of 3D Energy Transport in Supramolecular Architectures **Dr. Johannes Gierschner**

22-24/06/2009

Summer School Frontiers in Photonics and Laser Technologies. Universities of A Coruña, Santiago de Compostela and Vigo. Baiona, Spain
Laser Manipulation in Molecular and Cell Biology. **Dr. Ricardo Arias**

25-07/07-08/2009

Graphene Workshop. Benasque, España
Periodically Rippled Graphene **Dr. A.L. Vázquez de Parga**
Local Charges and Screening in Graphene **Prof. Nicolás Agraït**



02-07/08/2009

42 nd IUPAC Congress: Chemistry Solutions, Glasgow, United Kingdom
Fullerenes for Organic Electronics. **Prof. Nazario Martín**

04-09/10/2009

216 th Electrochemical Society (ECS). Viena, Austria
Soluble Homo and Hetero-Fullerene Dimers (C60 /C70) for Photovoltaics. **Prof. Nazario Martín**

07-11/09/2009

Trends in Nanotechnology 2009. Barcelona, Spain
Nanoscale Structure of Organic/Metal Interfaces. **Dr. Roberto Otero**

13/10/2009

Les carbone dans tous sea états. Symposium on "Carbon-based nanomaterials: from Chemistry to Applications, Strasbourg, France
Fullerenes for photovoltaics **Prof. Nazario Martín**

19-23/10/2009

GDR2009 Annual Meeting of the GDR-I GNT, Science and Applications of Graphene and Nanotubes. Coma-Ruga, Spain
Scanning Probe Exploration of Exfoliated Graphene on SiO2 and Epitaxial Graphene on Ru0001 in Magnetic Field. **Prof. Nicolás Agraït**

22-24/10/2009

4º Encuentro de Física y Química de Superficies. La Plata, Argentina
Nanoscale Structure of Organic/Metal Interfaces. **Dr. Roberto Otero**

27-30/10/2009

2nd European School on Molecular Nanoscience. Benidorm, Spain
Molecular Self-assembly on Grapheme **Dr. A.L. Vázquez de Parga**
Imagin 2D-Metal-Organic Magnets at Surfaces **Prof. Rodolfo Miranda**
Fullerenes for Organic Photovoltaics **Prof. Nazario Martín**

16-18/12/2009

Probing Magnetic Dynamics with Ultrashort Coherent X-Ray Pulses. Trieste, Italy
Pulsed Current-induced Magnetization Dynamics in Spin-valve Nanostructures Studied by XMCD-PEEM **Dr. Julio Camarero**

28-29/10/2009

Workshop Hispano-Ruso. New Nanostructured Materials and Coatings. Madrid, Spain
Magnetic Scales and New Opportunities in Nanomagnetism **Dr. Julio Camarero**
Semiconductor Nanocrystals-Carbon Nanotubes Composites. **Dr. Beatriz Hernández**

26-27/11/2009

Chimie Supromoléculaire: Journées Scientifiques en l'honneur de Jean-Pierre Sauvage. Strasbourg, France
Supramolecular chemistry of π -extended tetrathiafulvalenes: Efficient Concave Receptors for Fullerenes.
Prof. Nazario Martín

ii. REGULAR CONTRIBUTIONS

08-14/03/2009

Oral contribution

Symposium on Surface Science 3S09. St Moritz, Switzerland

A Quantum-stabilized Mirror for Atoms

D. Barredo, F. Calleja, P. Nieto, G. Laurent, J.J. Hinarejos, **A.L. Vázquez de Parga**,
D. Farias and **R. Miranda**

06-07/03/2009

Oral contribution

1st Workshop on Chemical Control by Scanning Tunnelling Microscopy. Zürich, Switzerland

Electronic Structure of Periodically Rippled Graphene

A.L. Vázquez de Parga, B. Borca, F. calleja, M.C.G. Passeggi, J.J. Hinarejos, F. Guinea y **R. Miranda**

09-12/03/2009

NanoSpain 09. Zaragoza, Spain

Poster

Magnetic Coupling between Antiferromagnetic and a Ferromagnetic Material studied by means of Spin-polarized Scanning Tunneling Microscopy J.M. Rodriguez, B. Borca, J.J. Hinarejos, **A.L. Vázquez de Parga** y **R. Miranda**

Epitaxial Growth of Organic Nanocrystals on Surfaces Marta Trelka¹, Anaïs Medina, David Ecija, Christian Urban, Jose M. Gallego, Christian G. Claessens, **Roberto Otero**, Tomás Torres and **Rodolfo Miranda**

The Formation of Functionalized Surfaces: The Adsorption of Oxalic Acid onto Cu(111) and Cu(100) Christian Urban, David Écija, Marta Trelka, Carlos Martí-Gastaldo, Eugenio Coronado, **Roberto Otero**, José M. Gallego, **Rodolfo Miranda**

Oral contribution

Electronic Corrugation on Periodically Rippled Graphene

B. Borca, S. Barja, **M. Garnica**, J.J. Hinarejos, **A.L. Vázquez de parga** and **R. Miranda**

26-27/03/2009

Oral contribution

DPG Spring Meeting, Dresden, Germany

Investigation of the Structure of TCNQ Molecules on Cu(100) by Helium Atom Scattering K. Fladischer, **A. Politano**, D. Farias, **R. Miranda**

22-26/04/2009

Oral contribution

237thAmerican Chemical Society National Meeting and Exposition, Salt Lake City, USA

Efficient Bulk Heterojunction Photovoltaic Cells, Based on C60 and C70 Fullerene Dimmers **Juan Luis Delgado** and **Nazario Martin**

24-29/04/2009

Oral contributions

215th Electrochemical Society. San Francisco, California, USA.

New Targets in Fullerene Chemistry Juan Luis Delgado, Salvatore Filipone and **Nazario Martin**

Soluble Homo and Hetero Fullerenes (C60/C70) for Bulk Heterojunction Photovoltaic Devices. V. Dyakonov, D. Rauh, A. Baumann, C. Deibel, **J. L. Delgado**, E. Espíldora, **N. Martín**

22-27/04/2009

Oral contribution

DPG Spring Meeting. Dresden, Germany

Magnetic Domain Imaging of Perpendicular Exchange-Coupled FM/AFM Systems by Soft x-Ray Holography C. Tieg, E. Jiménez, **J. Camarero**, Jan Vogel, C. Arm, G. Gaudin, E. Gautier, B. Rodmacq, B. Dieny, and **R. Miranda**

07/06/2009

Poster

Conference Optical Probes 2009. Beijing, China

Backbone Rigidity in Substituted Polythiophenes – a Lesson from Spectroscopy and Quantum-Chemistry Begoña Milián-Medina, Juan Aragón, Enrique Ortí, **Johannes Gierschner**

11-12/06/2009

Oral contribution

Séptima Reunión de Ácidos Nucleicos y Nucleósidos (RANN-7). Jaca, Spain

Modified siRNAs and Biocompatible Gold Nanoparticles. **Álvaro Somoza**, Brendan Manning, Montserrat Terrazas, Ramón Eritja

05-07/06/2009

Electron Controlled Chemical Lithography 2009 Meeting. Istanbul, Turkey

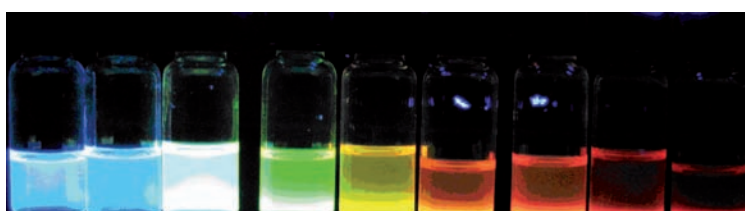
Charge Transfer-driven Molecular Self-assembly at Organic/metal Surfaces. Tzu-Chun Tseng, Christian Urban, Wang Yang, **Roberto Otero**, Steven L. Tait, Manuel Alcamí, David Eciija, Marta Trelka, Jose Maria Gallego, Maria Angeles Herranz, Fernando Martin, **Nazario Martin**, Klaus Kern, and **Rodolfo Miranda**

16-19/06/2009

Oral contribution

Joint Congress of the Spanish and Portuguese Microscopy Societies. Segovia, Spain

Single Centrosome Manipulation Reveals its Electric Charge and Associated Dynamic Structure Hormeño, S., Borja Ibarra, B., Chichón, F.J., Habermann, K., Lange, B.H.M., Valpuesta, J.M., Carrascosa, J.L., and **Arias-Gonzalez, J.R.**



11-17/07/2009

Poster

European Biophysics Congress. Organized by the European Biophysical Societies Association (EBSA). Geneva, Italy

Single Centrosome Manipulation Reveals its Electric Charge and Associated Dynamic Structure". F.J., Habermann, K., Lange, B.H.M., Valpuesta, J.M., Carrascosa, J.L., and **Arias-Gonzalez, J.R**



26-31/07/2009

International Conference on Magnetism ICM-2009. Karlsruhe, Germany

Oral contributions

Imaging Magnetization Reversal in Perpendicular Exchange Coupled AFM/FM Systems by Soft x-Ray Holography **J. Camarero** C. Tieg, E. Jiménez, Jan Vogel, C. Arm, G. Gaudin, E. Gautier, B. Rodmacq, B. Dieny, and **R. Miranda**

Posters

Non-symmetric Magnetic Behavior in Exchange Biased Systems Induced by Non-Collinear Coupling E. Jiménez, **J. Camarero**, J. Sort, J. Nogués, J. M. García-Martín, A. Hoffmann, B. Dieny, and **R. Miranda**.

Frustration Induced Anisotropies in Exchange Bias System E. Jiménez, **J. Camarero**, J. Sort, J. Nogués, J. M. García-Martín, A. Hoffmann, B. Dieny, and **R. Miranda**.

Magnetic Properties of Artificial FeCu(111) Alloy Thin Films M. Á. Niño, **J. Camarero**, R. Abrudan, K. Fukumoto, W. Kuch, T.O. Montes, A. Locatelli, J. J. de Miguel, and **R. Miranda**

Towards Large-Scale Arrays of Magnetic Nanostructures by Self-Organization Processes M. Á. Niño, E. Jiménez, **J. Camarero**, N. Mikuszeit, J. J. de Miguel, C. Hofer, C. Teichert, L. Gridneva, A. Persson, D. Arvanitis, T. Bobek, H. Kurz, and **R. Miranda**

High Velocity Current-induced Domain Wall Motion in Spin-Valve Nanostripes S. Pizzini, V. Uhlir, J. Vogel, N. Rougemaille, V. Cros, E. Jiménez, **J. Camarero**, S. Laribi, C. Tieg, E. Bonet, M. Bonfim, R. Mattana, C. Deranlot, F. Petroff, C. Ulysse, G. Faini, F. Sirotti, and A. Fert

30-04/08-09/2009

European Conference on Surface Science 26. Parma, Italia

Posters

Electronic Corrugation of Rippled Graphene Epitaxially Grown on Ru(0001) B. Borca, S. Barja, **M. Garnica**, J.J. Hinarejos, **A. L. Vázquez de Parga y R. Miranda**

TCNQ Molecules on Cu(100) Investigated by Helium Atom Scattering Fladischer K., Urban C., **Politano A.**, Farias D., **Miranda R.**

Growth of Graphene on Ru(0001) Investigated by Helium Atom Scattering **Politano A.**, Minniti M., Farias D., **Miranda R.**

He, Ne and Ar Diffraction from Clean Ru(0001) Minniti M., **Politano A.**, Farias D., **Miranda R.**

Oral contribution

Mapping the Electronic Surface Potential of Periodically Rippled Graphene S. Barja, B. Borca, **M. Garnica**, F. Hermanns, J.J. Hinarejos, **A.L. Vázquez de Parga y R. Miranda**

Graphene on Ru(0001): the Ultimate Mirror for He Atoms? **Politano A.**, Minniti M., Farias D., **Miranda R.**

01-10/09/2009

Magnetism 2009: Models in magnetism: from basic aspects to practical uses. Timisoara, Rumania

Poster

Imaging Magnetization Reversal of Exchange Bias Systems by Soft X-Ray Holography E. Jiménez, **J. Camarero**, C. Tieg, Jan Vogel, C. Arm, G. Gaudin, E. Gautier, B. Rodmacq, B. Dieny, and **R. Miranda**

7-8/09/2009

Workshop on Single-Molecular Electronics. Fundamentals of molecular electronic assemblies (FUN-MOLS) project meeting. Copenhagen, Denmark.

Oral contribution

Molecular Junctions Based on the STM Break-Junction Setup, **M. T. González, E. Leary**, C.R. Arroyo, G. Rubio-Bollinger, and **N. Agraït**

Posters

Inelastic Electron Tunneling in Single Alkanedithiol Molecules, C. R. Arroyo, G. Rubio-Bollinger and **N. Agraït**

Single-Molecule Junctions Based On a STM Break-Junction Setup, **M. T. González, E. Leary**, C.R. Arroyo, G. Rubio-Bollinger, and **N. Agraït**

12-16/09/2009

Oral contribution

Conference FuturMat. Ostuni, Italy

Bandgap Engineering of Conjugated Co-Polymers by Orbital Design **Dr. Johannes Gierschner**

13-18/09/2009

Oral contribution

XVI International Summer School Nicolás Cabrera (INC), Miraflores, Spain.

Metal-Organic Magnets at Surfaces. **Prof. Rodolfo Miranda**

15-18/09/2009

AUSE (Asociación de Usuarios de Sincrotrón de España). Barcelona, Spain

Oral contribution

Imaging Magnetization Reversal of FM/AFM Systems by Soft X-Ray Holography E. Jiménez, C. Tieg, **J. Camarero**, Jan Vogel, C. Arm, G. Gaudin, E. Gautier, B. Rodmacq, B. Dieny, and **R. Miranda**

21-25/09/2009

Oral contribution

IX Meeting of the Spanish Optical Society. Ourense, Spain

Laser Manipulation of Single Organelles Reveals their Biophysical Properties. **Dr. Ricardo Arias**

21-25/09/2009

Oral contributions

10th International Conference on Atomically Controlled Surface, Interfaces and Nanostructures ACSIN-10, Granada, Spain

Periodically Rippled Graphene: An Electronically and Structurally Nanostructured Material B. Borca, S. Barja, **M. Garnica**, J.J. Hinarejos, **A. Politano**, M. Minniti, D. Farias, **A.L. Vázquez de Parga y R. Miranda**

Magnetic Behavior of Metastable fcc FeCu Alloy Thin Films Grown with the Aid of a Surfactant Pb Layer M. Á. Niño, **J. Camarero**, R. Abrudan, K. Fukumoto, W. Kuch, T.O. Montes, A. Locatelli, J. J. de Miguel, and **R. Miranda**

Imaging Magnetization Reversal of Buried Interfaces by Soft X-Ray Holography **J. Camarero** C. Tieg, E. Jiménez, Jan Vogel, C. Arm, G. Gaudin, E. Gautier, B. Rodmacq, B. Dieny, and **R. Miranda**

Surface Engineering and Self-Assembly of Molecular Nanostructures Relevant for Photovoltaics. **R. Otero**, D. Écija, C. Urban, M. Trelka, J. M. Gallego, **N. Martín, R. Miranda.**

04-07/10/2009

Oral contribution

16th International Workshop on Oxide Electronics (WOE 16). Tarragona, Spain

Novel Conducting Interfaces between Band Insulating Oxides **P. Perna**, D. Maccariello, M. Radovic, U. Scotti di Uccio, F. Mileto Granozio, D. Marré, I. Pallecchi, M. Codda, C. Cantoni, M. Varela, J. Gasquez, S. Pennycook

04-07/10/2009

Oral contribution

European Conference on Molecular Magnetism. Wroclaw, Poland

Imagin 2D-Metal-Organic Magnets and Single Molecular Magnets at Surfaces. **Prof. Rodolfo Miranda**

08-13/11/2009

American Vacuum Society 56th Symposium and Exhibition. San José, California, USA.

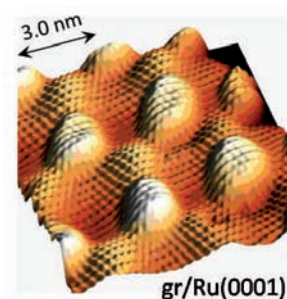
Oral contributions

Mapping the Electronic Surface Potential of Graphene Grown on Ir(111) and Ru(0001) S. Barja, B. Borca, **M. Garnica**, F. Hermanns, J.J. Hinarejos, **A.L. Vazquez de Parga y R. Miranda**

Electronic Corrugation of Rippled Graphene Grown on Ru(0001) B. Borca, S. Barja, **M. Garnica**, J.J. Hinarejos, **A.L. Vazquez de Parga y R. Miranda**

Charge-Transfer Driven Molecular Self-Assembly at Organic/Metal Interfaces. T. C. Tseng, C. Urban, Y. Wang, **R. Otero**, S. L. Tait, M. Alcamí, D. Écija, M. Trelka, J. M. Gallego, M. A. Herranz, F. Martín, **N. Martín**, K. Kern, **R. Miranda**

The Densest Iron Coordination Network Based on Carboxylate Ligands. D. Écija, C. Urban, M. Trelka, C. Martí-Gastaldo, E. Coronado, J. M. Gallego, **R. Otero, R. Miranda.**



30/11/2009 – 4/12/2009

Oral contributions

MRS Fall Meeting Symposium. Boston, USA

N: Optical processes and new methods in nanoparticles *Carbon Supported CdSe Nanocrystals* **Beatriz Hernández**, C. Klinke, H. Weller

E: Advanced Materials for Half-Metallic and Organic Spintronics, *Tailoring Anisotropy in Half Metallic La_{0.7}Sr_{0.3}MnO₃ Thin Films* **P. Perna**, E. Jiménez, **F. J. Terán**, L. Méchin, **J. Camarero** and **R. Miranda**

4. SEMINARS & LECTURES

23/01/2009

3D Energy Transport in Supramolecular Assemblies. Institut Fresnel, Marseille, France. **Dr. Johannes Gierschner**

26/01/2009

Conjugated Organic Materials: Optical & Electronic Characteristics from Solution to the Solid State. Physics Department, Université de la Méditerranée Aix-Marseille II, France. **Dr. Johannes Gierschner**

18/02/2009

Doctoral Program in Protein Structure and Function. Universities of Zaragoza, Sevilla, Autónoma de Barcelona and the National Research Council (CSIC).

Optical Tweezers in Single-Molecule Manipulation. **Dr. Ricardo Arias**

03/04/2009

Periodically Rippled Graphene

Donosti International Physics Centre (DIPC), San Sebastián, Spain. **Dr. Amadeo L. Vázquez de Parga**. Seminar

08-13/02/2009

X Escuela Nacional de Materiales Moleculares. Elche, Spain

Introducción a la microscopía y espectroscopía túnel. **Dr. A.L. Vázquez de Parga**.

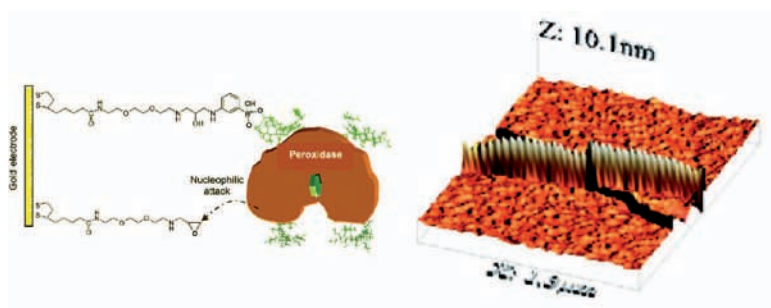
Synthetic Molecular Machines **Dr. Emilio Pérez**

14-17/04/2009

Materiali Molecolari Organici

Università degli Studi di Palermo. Facoltà di Scienze MM.FF.NN. Palermo, Italy. **Prof. Nazario Martín**.

Curso de Doctorado



17/04/2009

Periodically Modulated Geometric and Electronic Structure of Graphene on Ru(0001)
Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain. **Dr. Amadeo L. Vázquez de Parga**. Seminar

19-26/04/2009

European Spring School 2009 on Supramolecular Organized Nanostructures Materials for Optoelectronic Applications. Peñíscola, Spain
Supramolecular Nanostructures of Carbon-Based Materials **Prof. Nazario Martín**

21/04/2009

Doctoral Program on Biochemistry and Molecular Biology. UCM. *Estructura de Proteínas* **Dr. Elías Herrero**

7-8/05/2009

1st Workshop on Nanobioscience, IMDEA Nanociencia-CNB-CSIC, Madrid, Spain.

- *Modified SiRNAs and Biocompatible Gold Nanoparticles for Gene Silencing.* **Dr. Álvaro Somoza**
- *Single Centrosome Manipulation Reveals its Electric Charge and Hydrodynamic Behaviour* **Dr. Ricardo Arias**
- *Proteins on Solid Interfaces: Optimizing Functional Assembly* **Dr. Marisela Vélez**

14/05/2009

Sterics Effects in RNA Interference: Probing the Influence of Modified siRNAs. Centro Nacional de Biotecnología-CSIC, Madrid, Spain. **Dr. Álvaro Somoza**. Seminar

07-09/06/2009

1st Meeting of the Consolider in Molecular Nanoscience Project, Madrid, Spain.

- *Soluble Homo and Hetero Fullerenes (C60/C70) for Bulk Heterojunction Photovoltaic Devices.* **Dr. Juan Luis Delgado**
- *Unveiling Physics in Biology by Mechanical Manipulation.* **Dr. Ricardo Arias**
- *Electronic Transport in Graphene and Single-Molecules* **Prof. Nicolás Agrait**
- *Proteínas en Superficies Sólidas: Optimización de Ensamblajes Funcionales* **Dr. Marisela Vélez**
- *A Two Dimensional Playground: Periodically Rippled Graphene* **Manuela Garnica (FLASH)**
- *Colored Fullerenes* **Dr. Pierre Antoine Bouit (FLASH)**

16/06/2009

Optical & Electronic Characteristics of Conjugated Organic Materials: a Lesson from Spectroscopy and Theory. Institute of Chemistry, Chinese Academy of Science, Beijing, China. **Dr. Johannes Gierschner**. Invited Lecture

18/06/2009

Exciton Migration in Supramolecular Assemblies Chemistry Department, Busan National University, South Korea. **Dr. Johannes Gierschner**. Invited Lecture

23/06/2009

Bandgap Engineering of Conjugated Co-Polymers by Orbital Design. Department of Materials Science and Engineering, Seoul National University, South Korea. **Dr. Johannes Gierschner.** Lecture

24/06/2009

Optical Excitations and Exciton Processes in Conjugated Organic Materials - at the Crossroad of Spectroscopy, Theory and Novel Materials. Department of Chemistry, Seoul National University, South Korea. **Dr. Johannes Gierschner.** Invited Lecture

17-18/09/2009

Optical Spectroscopy of Conjugated Organic Materials: a combined experimental and theoretical approach. Chemistry Department, University of Bari, Italy. **Dr. Johannes Gierschner.** Invited Lecture

30/09/2009

Estudio de los Efectos Estéricos en ARN Interferente mediante siRNAs Modificados. The Rocasolano Institute (CSIC) Madrid, Spain. **Dr. Alvaro Somoza.** Lecture

30/09/2009

Screening in Graphene. CEA-Saclay, France. **Prof. Nicolás Agraït.** Lecture

01/12/2009

Electronic and Vibrational Properties of Metal/Metal Interfaces. Donostia International Physics Center. San Sebastian, Spain. **Dr. Antonio Politano**

07/11/2009

Doctoral Program in Molecular and Cell Biology. Universidad Autónoma de Madrid. Madrid, Spain. *Scanning Microscopies in Biomaterials.* **Dr. Ricardo Arias**

24-25/11/2009

New reactions in Fullerene Chemistry
New nanoforms of carbon: endofullerenes, carbon nanotubes and graphenes
Chemistry Faculty University of Strasbourg, France **Prof. Nazario Martín**



5. SEMINARS AT IMDEA-NANOCIENCIA

23/01/2009

Graphenes and Carbon Materials. Prof. Dr. Klaus Müllen Max-Planck Institute for Polymer Research, Mainz, Germany

02/02/2009

Small Machines That Repair the Genetic Information. Dr. Humberto Sánchez Department of Genetics and Cell Biology, Erasmus University Medical Center, Rotterdam, The Netherlands

04/02/2009

Mound Formation and Step Edge Barriers in Organic-Semiconductor Thin Films Prof. Christian Teichert Institute of Physics, Montanuniversität Leoben, Franz Josef Straße 18, 8700 Leoben, Austria

05/02/2009

Self-Mending Polymers. Professor Dr. h.c. Fred Wudl. Department of Chemistry and Biochemistry University of California Santa Barbara, CA, USA

19/02/2009

Anomously Abundant Phonons in Thin Lead Films Seen by Helium Atom Scattering Prof. Dr. J. Peter Toennies Max Planck Institut für Dynamik Selbstorganisation-G. Germany

11/03/2009

Click Chemistry as an Efficient Tool for The Preparation of Fullerene Derivatives Prof. Dr. Jean-François Nierengarten. Laboratoire des Matériaux Moleculaires. Ecole Européenne de Chimie, Polymères et Matériaux. Université de Strasbourg. France

13/03/2009

AFM of Membrane Proteins: From Nanomechanics to Function and Cooperativity. Dra Sonia Contera Physics Department, University of Oxford, UK. Co-director of the Institute of Nanoscience for Medicine, Oxford James Martin School of the 21st century.

14/05/2009

Light on the Nanoscale: Energy Harvesting and the Optical Assembly of Particles Prof. David Andrews, Nanostructures and Photomolecular Systems, School of Chemical Sciences, University of East Anglia, Norwich, United Kingdom

28/05/2009

Controlling the Height of Metallic Nano-Islands with Quantum Size Effects Prof. Michael Tringides (Iowa State University and Ames Laboratory

25/06/2009

Switching Molecules by Electrons: From Isomerisation to Chirality Flip. Prof. Karina Morgenstern, Department of Atomic and Molecular Structures (ATMOS), Leibniz Universität Hannover

01/07/2009

Nanomechanics at the Single Molecule Level Dr. Sergi Garcia-Manyes Department of Biological Sciences
Columbia University New York

10/10/2009

Electron Propagation along Cu Nanowires Supported on a Cu(111) Surface Dr. Sergio Díaz-Tendero Laboratoire des Collisions Atomiques et Moléculaires, Bât. 351 CNRS and Université Paris-Sud 91405 Orsay Cedex, France & Universidad Autónoma de Madrid

15/10/2009

Nanomembranes – an Emerging Nanostructural Building Block Dr. Jovan Matovic Institute for Sensors and Actuators Systems, Technical University Vienna, Austria

16/10/2009

Surface Diffusion - An Atomistic Picture Dr. Grazyna Antczak Institute of Solid State Physics, Leibniz University, Hanover, Germany and Institute of Experimental Physics, University of Wrocław, Poland

04/11/2009

Application of Focused Ion and Electron Beams in Materials Research Dr. Lothar Bischoff. Forschungszentrum Dresden-Rossendorf Institute of Ion Beam Physics and Materials Research Dresden, Germany

17/11/2009

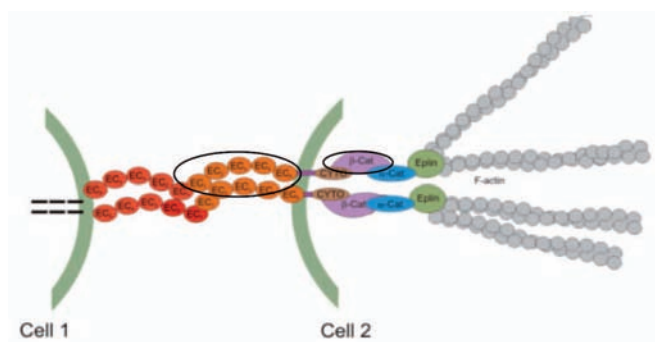
Formation Mechanisms and Functionality in Molecular Junctions Dr. Michel Calame, Department of Physics, University of Basel, Switzerland

25/11/2009

Synthesis of Metallic Nanoparticles: Assembly Based on Coordination Chemistry and Development of Enzyme-Nanoparticle Hybrid Systems Dr. José M. Abad Pastor Departamento de Química Analítica y Análisis Instrumental, Universidad Autónoma de Madrid. Centre for Nanoscale Science, Chemistry Department, University of Liverpool, Liverpool L69 7ZD United Kingdom

02/12/2009

El Sueño de Feynman. Nanociencia y nanotecnología: cincuenta años de una conferencia premonitoria. Profs. Ivan Schuller, Emilio Mendez y Héctor Abruña



16/12/2009

New catalytic systems based on carbon nanotubes supported ionic liquid phase, Dra. Laura Rodríguez
Laboratorio de Química de la Coordinación, Toulouse Laboratorio Heteroquímica Fundamental y Aplicada, Toulouse

6. SCIENTIFIC OUTREACH ACTIVITIES

i. TALKS

26/02/2009

Instituto de Investigaciones Químicas (CSIC). Sevilla, Spain
Interacciones Supramoleculares Cóncavo-Convexo. Ordenando Fullerenos a Escala Nanométrica. **Prof. Nazario Martín**

25-29/05/2009

Course on Physics & Chemics of Polymers. Louvain la Neuve, Belgium
Spectroscopy of Conjugated Polymers: A Theoretical Approach. **Dr. Johannes Gierschner**

24/06/2009

Department of Materials Science and Engineering, Seoul National University, South Korea
Particle Sizing by Dynamic and Static Light Scattering. **Dr. Johannes Gierschner**. Tutorial

01/07/2009

Web Seminar www.bimore.eu
Global Fitting. From Time-Resolved Spectroscopic Data to a Photophysical Model. **Dr. Larry Luer**. Tutorial

17-19/07/2009

Workshop on Carbon Nanotube Optics (WCNO). Kleinwalsertal, Austria,
Femtosecond Spectroscopy: Methods and Goals. An introduction. **Dr. Larry Luer** Tutorial

13/10/2009

Nanomatch Workshop, University of Mons, Belgium.
Optical and Photophysical Properties of Conjugated Materials. **Dr. Johannes Gierschner**. Tutorial

26-30/10/2009

Experiment at the CNRS/THALES, Palaiseau (France)
Magnetoresistance Measurements on Fe/MgO and LSMO/STO Epitaxial Thin Films. **Dr. Paolo Perna**

22/11/2009

Plenary Session of the BIMORE Annual Meeting, Wroclaw University of Technology, Poland
The BIMORE Marie Curie Research Training Network. **Dr. Larry Luer**



ii. OUTREACHING ACTIVITIES

03/02/2009

National Center of Biotechnology, CSIC Madrid, Spain,
Unveiling Physics in Biology by Mechanical Manipulation **Dr. Ricardo Arias**

09/02/2009

Contributions to V Semana de la Ciencia y Tecnología, Murcia, Spain
Viaje Guiado al Nanomundo y Nanociencia: lo Pequeño es Diferente. **Prof. Rodolfo Miranda**

10/02/2009

Nano Bio Ciencia: la Vuelta al Sabio Renacentista **Dr. Ricardo Arias**
<http://www.madrimasd.org/informacionIDI/noticias/noticia.asp?id=38123>

26/02/2009

Aviones del Futuro: Más Ligeros y Seguros **Prof. Rodolfo Miranda**
<http://www.madrimasd.org/informacionIDI/noticias/noticia.asp?id=38348>

27/02/2009

Chief Scientist Ministry of Industry, Trade and Labor The Government of the State of Israel. Technical Visit to IMDEA Nanociencia.

10/03/2009

Institute of Physical-Chemistry "Rocasolano", CSIC
Single Centrosome Manipulation Reveals its Electric Charge and Associated Dynamic Structure **Dr. Ricardo Arias**

17/03/2009 & 01/04/2009

Nanociencia: lo Pequeño es Diferente **Prof. Rodolfo Miranda.** Guide tour and conference for high schools

27/04/2009

Control Eficiente de la Imanación sin Campos Magnéticos **Dr. Julio Camarero**
<http://www.madrimasd.org/informacionIDI/noticias/noticia.asp?id=39115>

11-12/05/2009

Contribution to the ETP Nanomedicine General Assembly, Münster, Germany. *Presentation of Road-map on "Nanoparticles for Medical Applications".* **Dr. Francisco Terán**

25-27/09/2009

2009 Researchers' Night, The Planetarium, Rome. Demonstrating the international dimension of research, demonstrating the importance of collaboration, attracting young people to a career in science, dis-

cussing EU key objectives with public: sustainable growth, environmental protection. Demonstrating how nanoscience helps reaching these objectives. **Dr. Larry Luer**

10/09/2009

Universidad Politécnica de Valencia. Valencia, Spain

Laser Manipulation of Single Organelles Reveals their Biophysical Properties **Dr. Ricardo Arias.**

09-20/11/2009

Contributions to IX Semana de la Ciencia. Madrid, Spain

- IMDEA-Nanociencia guided tour for high schools
- Experimentos de demostración del Programa I+D de la CM «Ciencia y Tecnología en el Milikelvin», CITECNOMIK **Prof. Nicolás Agraït**
- Conferences
 - *Descubriendo a los Nano-Robots: Purificación de Proteínas por Cromatografía y Ultracentrifugación* **Dr. Elías Herrero**
 - *Nanociencia y Nanotecnología* **Drs. Ricardo Arias y Francisco Terán**
 - *Nanociencia: la importancia de lo pequeño.* **Prof. Nazario Martín**

19/11/2009

Caminando sobre la Luz: un Paseo por el Espectro Electromagnético **Dr. Elías Herrero.** Conference for IES Emperatriz María de Austria, Madrid, Spain.

19/11/2009

Universidad Complutense de Madrid. Madrid, Spain

Unveiling Physics in Biology by Optical Manipulation of Single Molecules. **Dr. Ricardo Arias.**

08/11/2009

Dos Tecnologías Ópticas que Revolucionaron la Sociedad de la Información **Dr. Daniel Granados**
http://www.madrimasd.org/cienciaysociedad/documentos/doc/premios_nobel_2009.pdf

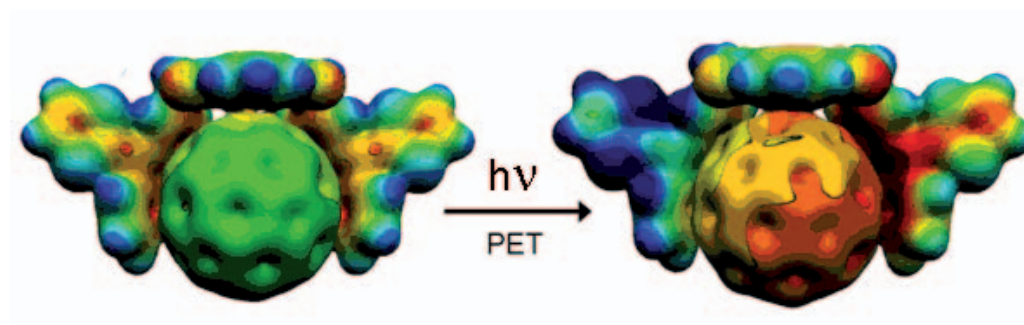
01/12/2009

El Sueño de Feynman. Nanociencia y Nanotecnología : Cincuenta Años de una Conferencia Premonitoria **Prof. Rodolfo Miranda** <http://www.madrimasd.org/informacionidi/noticias/noticia.asp?id=41780>

03/12/2009

Nanotecnología: Perspectivas de Negocio **Dr. Francisco Terán**

<http://www.madrimasd.org/informacionldi/analisis/opinion/opinion.asp?id=41801>



7. WORKSHOPS & COURSES (CO)-ORGANIZED BY IMDEA-NANOCIENCIA

26-28/01/2009

Initial Training Network FUNDAMENTALS OF MOLECULAR ELECTRONIC ASSEMBLIES (FUNMOLS)
Kick-Off Meeting, Madrid. Profs Nazario Martín and Nicolás Agrait

19-24/04/2009

Organization of the European Springschool on Supramolecular Organized Nanostructured Materials for Optoelectronic Applications, Peñíscola, Spain, Promoted by IMDEA Nanoscience

07-09/05/2009

1st Workshop on Nanobioscience, Madrid, Spain
Co-organized IMDEA Nanociencia & CNB-CSIC.

07-09/06/2009

1st Meeting of the Consolider in Molecular Nanoscience Project, Madrid, Spain.

14-18/09/2009

XVI International Summer School «Nicolás Cabrera» Frontiers in Science and Technology. *Spin Transport and Dynamics in Nanostructures*

13-16/10/2009

7th Nanomatch Meeting and CMN Workshop on «Modeling of Conjugated Materials» Mons, Belgium, Workshops and Courses

28-16/10/2009

Young Researchers' Meeting, Otranto, Italy. A combined scientific and career-building meeting. Organized within BIMORE network by the fellows.

02/12/2009

MONET: Conclusion & Outlook. Madrid, Spain.



8. RECRUITMENT OF RESEARCHES

- International Open Call 2009: 110 applications
- International Open Call for postdoctoral positions 2009: open
- International Open Call for predoctoral positions 2009: open
- Initiation to Research in Nanoscience. Summer 2009 : 4
- International Open Call for technical positions 2009: 4

9. RESEARCH PROGRAMS & FELLOWSHIPS

- **Dr. Johannes Gierschner.** Regular Visiting Researcher Programme with Prof. Soo Young Park, Seoul National University 2009 - 2018, financed Ministry of Science, South Korea: Creative Research Initiative Project: *Center for Supramolecular Optoelectronic Materials*, 2009 - 2018
- **Dr. Johannes Gierschner.** Visiting Researcher at ICMol, University Valencia, within the program Consolider Ingenio 2010 *Nanociencia Molecular*.

10. PROJECTS

- **Dr. Johannes Gierschner.** Coordination of an Marie Curie Research Training Network NANOMATCH [MRTN-CT-2006-035884]. www.nanomatch.eu
- **Dr. Beatriz Hernández.** Marie Curie Actions. European Re-integration Grants (ERG). FP7-PEOPLE-2009-RG DOTUBE nº 239256.
- **Dr. Aitziber Lopez Cortajarena.** Marie Curie Actions. International Re-integration Grants (IRG). FP7-PEOPLE-2009-RG BIONANOTOOLS nº 246688.
- **Prof. R. Miranda and Dr. Julio Camarero.** Marie Curie Actions. International Research Staff Exchange. FP7-PEOPLE-2009-IRSES ONDA nº 247518.
- **Dr. Beatriz Hernández and Dr. Roberto Otero.** MICINN. "Growth and characterization of new nanomaterials based on self-assembled quantum dots and carbon nanotubes on solid surfaces". MAT2009-13488 (subprograma MAT).
- **Dr. Larry Luer.** Coordination of Marie Curie Research Training Network "BIMORE"-Bio-inspired approaches molecular (opto)electronics <http://www.bimore.eu>
- **Dr. Beatriz Hernández.** FP7-PEOPLE-2009-IAPP 251538 – PhOAMS. Submitted. The first selection round passed (3.30/5.00) Threshold 3.00/5.00).
- **IMDEA Nanociencia.** Convocatoria de Ayudas para la realización de Programas de Actividades de I+D entre grupos de investigación de la Comunidad de Madrid S2009/MAT-1726 NANOBIOIMAGNET: FUNDAMENTOS Y APLICACIONES DE MOLÉCULAS, NANOPARTÍCULAS Y NANOESTRUCTURAS MAGNÉTICAS: DE LA ESPINTRÓNICA A LA BIOMEDICINA.



11. EXTERNAL CONTRACTS

With AERNnova AEROSPACE S.A. <http://www.aernnova.com>

- Ministerio de Industria, Turismo y Comercio. Proyecto CENIT. *Innovation in Advanced Composites and Rear-End Optimized (ICARO)*. 4 years contract (2008-2011)

12. HONORS

- **Dr. Emilio Pérez.** RSEQ Prize for Junior Researchers May 2009.
- **Dr. Emilio Pérez.** Selected as Young Researcher to attend the 59th Meeting of Nobel Prize Winners in Chemistry, Lindau, Germany, 28 June-3 July 2009 & SUSCHEM Prize for Young Researchers Category Postdoc. 22 July 2009.
- **Dr. Antonio Politano.** Welch Scholarship 2009 & Fondazione Angelo Della Riccia.
- **Dr. Beatriz Hernández .** Nanoscience Prize 2009 by AGENT-D (Consortium of Nanotechnology Competence Centers in Germany), supported by the Ministry of Education and Science. Germany.

