Insight

DIPC Workshops **2006/07**

Spanish Molecular Electronics Symposium 136

NANO2006 Workshop 140

Confinement: Universal Aspects in Soft Matter 146

SoftComp Area 4 Meeting 150

20th Symposium on Surface Science 3S07 152

IN16B Meeting 160

Ab-initio Approaches to Electron-phonon Coupling and Superconductivity 162

Symposium at the 4th European Conference on Neutron Scattering 165

Elementary Reactive Processes at Surfaces 166

TNT2007 172

Efficient Density Functional Calculations: Hands-on Tutorial on the SIESTA Code 184

JCNS Panel Meeting 188

Universal Aspects in Soft Matter: Slow Dynamics 189

Network Coordination Committee of the Network of Excellence SoftComp Meeting 192

Spanish Molecular Electronics Symposium

March 24, 2006

ORGANIZERS
Dr. Antonio Correia (PHANTOMS Foundation, Spain)
Dr. David Mecerreyes (CIDETEC, Spain)
Dr. Daniel Sanchez-Portal (Universidad del País Vasco/Euskal Herriko Unibertsitatea, Centro de Física de Materiales-CSIC, Spain)
Dr. Javier Aizpurua (Donostia International Physics Center, Spain)

Nanoelectronics represent a strategic technology considering the wide range of possible applications. These include telecommunications, automotive, multimedia, consumer goods and medical systems.

Many of the potential molecular electronic applications still require substantial work in order to be transformed into marketable technology. A concerted effort must therefore be made at the European level to both understand and commercialise atomic scale technology in order to maintain a competitive advantage for Europe and keep Europe at the forefront of the next nanoelectronics revolution, a revolution beyond nanotechnology.

In order for the field of molecular electronic to continue growing exponentially worldwide and therefore lead to new commercial applications and to change the micro and nanoelectronics paradigm, it is necessary to educate new researchers who can work across traditional disciplines. High-level dissemination activities such as SMS 2006 will help to establish a critical mass of R&D at a European level and to stimulate development of an interdisciplinary community of researchers.

CONTRIBUTIONS

J.-P. Bourgoin (CEA Saclay, France)
Carbon Nanotubes based Nano-Electro-Mechanical Systems

J. Gómez (Universidad Autónoma de Madrid, Spain)
Tuning the conductance of single walled carbon nanotubes by ion irradiation in the Anderson localization regime

J.J. Palacios (Universidad de Alicante, Spain)
Schottky in Gold- and Palladium-contacted semiconducting carbon nanotubes

M. Brandbyge (Technical University of Denmark)
Transport in molecules and nanowires from density functional theory

M. Szymonski (Jagiellonian University, Poland)
Metal nanostructures assembled st semiconductor surfaces for anchoring and communication in molecular devices

J.R. Galán Mascaros (ICMol, Spain)
Magnetic and conducting molecular materials

E. Ortega (Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain)
Supramolecular self-assembly of linear poliarene molecules with complementary imide and amide end groups

E. Meyer (Universität Basel, Switzerland)
Force Microscopy Investigations Of Molecules

M. Dubois (CEA-DRFMC, France)
Combining ab-initio and semi-emperical approaches for STM simulation of molecules weakly bonded to surfaces

P. Ordejon (ICMAB-CSIC, Spain)
Resistive and rectifying effects of pulling gold atomsat thiol-gold nano-contacts

L. Grill (Freie Universität Berlin, Germany)
Contacting single molecules with the STM: model systems for molecular electronics

M.T. González (Universität Basel, Switzerland)
Break junctions in liquid for molecular electronics

J. Veciana (ICMAB-CSIC, Spain)
Advancing in the structuring and patterning of single-molecule magnets on surfaces

T. Linderoth (Aarhus Universitet, Denmark)
Organic Molecules On Surfaces Studied By STM: Dynamics, Chirality And Organization

PARTICIPANTS

N. Agrait	Universidad Autónoma de Madrid, Spain
J. Aizpurua	Donostia International Physics Center, Spain
M. Alducin.	Donostia International Physics Center, Spain
J.A. Alducin	CIDETEC, Spain
A. Arnau	Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J.M. Asua	POLYMAT, Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
A. Ayuela	Donostia International Physics Center, Spain
J.-P. Bourgoin	CEA, France
M. Brandbyge	Technical University of Denmark
I. Bustero	Fundación Inasmet, Spain
M.J. Cabrera	DIPC, CSIC, Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
H. Calderón	Parque Tecnológico de San Sebastián, Spain
A. Correia	PHANTOMS Foundation, Spain
T. Cuberes	Applied Mechanics, Spain

R. Díez Muiño . . . . . UFM, CSIC, Spain
M. Dubois . . . . . CEA-DRFMC,France
P.M. Echenique . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain
C. Echeverría Arrondo . . . . . Universidad Pública de Navarra, Spain
J. Esquena . . . . . Institut d'Investigacions Químiques i Ambientals de Barcelona, Spain
E. Formoso . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J.R. Galan-Mascaros . . . . . Instituto de Ciencia Molecular, Universidad de Valencia, Spain
A. Garcia . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
P. García-Mochales . . . . . Universidad Autónoma de Madrid, Spain
J. Gomez . . . . . UAM, Spain
J. Gonzalez . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
M.T. González . . . . . Institüt für Physik, Universität Basel, Switzerland
N. Gonzalez Lakunza . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain
H. Grande . . . . . CIDETEC, Centro de Tecnologías Electroquímicas, Spain
L. Grill . . . . . Freie Universität Berlin, Germany
J.J. Iruin . . . . . POLYMAT, Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
I. Juaristi . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
G. Kortaberria . . . . . Escuela Universitaria Politécnica, Spain
J. Ledesma . . . . . Scientec Iberica, Spain
T. Linderoth . . . . . Aarhus Universitet, iNANO, Denmark
M. Machado . . . . . CIDEMCO/Energy Efficiency Area, Spain
H. Manzano . . . . . Labein-Tecnalia, Spain
R. Marcilla . . . . . CIDETEC/Nuevos Materiales, Spain
J. Matxain . . . . . Örebro Universitet, Department of Natural Sciences, Sweden
D. Mecerreyes . . . . . CIDETEC, Centro de Tecnologías Electroquímicas, Spain
E. Meyer . . . . . Institüt für Physik, Universität Basel, Switzerland
J. Molina . . . . . CEIT, Spain
I. Mondragon . . . . . GMT-Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Nolla Anguera . . . . . IIQAB-CSIC, Dept. Tecnologia de Tensioactius, Spain
I. Obieta . . . . . Fundación Inasmet, Spain
P. Ordejon . . . . . Instituto de Ciencia de Materiales de Barcelona, CSIC, Spain
E. Ortega . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
R. Pacios . . . . . CIDETEC/New Materials, Spain

J.J. Palacios . . . . . Universidad de Alicante, Spain
M. Piris . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J.M. Pitarke . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J.A. Pomposo . . . . . CIDETEC, Centro de Tecnologías Electroquímicas, Spain
M. Puska . . . . . DIPC, Spain and Helsinki University of Technology, Finland
J.A. Ramos . . . . . GMT-Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
A. Rubio . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, CSIC, Spain
M. Ruiz Osés . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Sánchez . . . . . Fundación LABEIN, Spain
D. Sanchez-Portal . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, CSIC, Spain
F. Schiller . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
I. Silanes . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
M. Szymonski . . . . . Jagiellonian University, NANOSAM (Poland)
J. Telleria . . . . . Parque Tecnológico de San Sebastián, Spain
M. Urdanpilleta . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Veciana . . . . . ICMAB-CSIC, Spain
R. Vincent . . . . . DIPC, Spain
N. Zabala . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain

NANO2006 Workshop

PERSPECTIVES IN NANOSCIENCE AND NANOTECHNOLOGY

September 4-6, 2006

CHAIRMAN
Prof. Jose M. Pitarke (Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain)

VICE-CHAIRMEN
Dr. Daniel Sanchez-Portal (Universidad del País Vasco/Euskal Herriko Unibertsitatea, CSIC, Spain)
Dr. Javier Aizpurua (Donostia International Physics Center, Spain)

SCIENTIFIC COMMITTEE
Dr. Garnett W. Bryant (National Institute of Standards and Technology, USA)
Prof. Pedro M. Echenique (Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain)
Prof. Richard M. Martin (University of Illinois, USA)
Prof. Manuel Martin-Lomas (CSIC, Spain)
Prof. Sir John B. Pendry (Imperial College London, United Kingdom)

The aim of this multidisciplinary workshop is to assess the state of the art in the current understanding of nanoscale physics, chemistry, engineering, biology, and medicine, and to access the knowledge and advice from leader scientists in these fields. We also intend to discuss emerging applications with potentially significant impact for the materials, electronic, photonics, and life-science industries, and to debate about the current strategy and perspectives in Nanoscience and Nanotechnology.

The programme of the workshop is built up around a number of invited talks and contributed papers (oral and poster), with ample time for discussion. The topics of the sessions will include various aspects of nanoscale physics, chemistry, engineering, biology, and medicine, with special emphasis on the synthesis, assembling and nanofacturing of nanostructured materials, the development of nanodevices and its impact on molecular electronics, spintronics, nanomagnetism and nanophotonics, and the use of biofunctional nanoparticles in nanobiotechnology and medicine.

The workshop is sponsored by the Donostia International Physics Center (DIPC) and the "Consejo Superior de Investigaciones Cientificas" (CSIC), and also by the Basque Government in an effort to launch an initiative to build a new Center of Nanoscience and Nanotechnology (CIC nanoGUNE Consolider). This event takes place in the framework of the Summer Courses of the University of the Basque Country. We are also grateful to the members of the Scientific Committee.

CONTRIBUTIONS

Nanophotonics
Chair: **Prof. Clivia Sotomayor** (Tyndall National Institute, Ireland)

M. Wegener (Universität Karlsruhe, Germany)
Photonic metamaterials: Optics starts walking on two feet

G. Badenes (ICFO-The Institute of Photonic Sciences, Spain)
Nanophotonic devices and techniques for sensing applications

N. Halas (Rice University, Texas, USA)
Plasmonic nanostructures from artificial molecules to active nanodevices

X. Zhang (University of California Berkeley, USA)
Photonic metamaterials: Nano-scale plasmonics and super lens

P. Nordlander (Rice University, Texas, USA)
Plasmonic substrates for surface enhanced spectroscopies

B. Wood (Imperial College London, United Kingdom)
Directed sub-wavelength imaging in a layered metal-dielectric system

Nanostructures
Chair: **Prof. Peter Nordlander** (Rice University, Texas, USA)

U. Landman (Georgia Institute of Technology, USA)
Small is different: from nano-lubrication and jets to correlated electrons in quantum dots

J.B. Pethica (Trinity College Dublin, Ireland)
Mechanics at single atoms & nanoimprint for lithography

F. Briones (Instituto de Microelectrónica de Madrid-CNM-CSIC, Spain)
Device integration of semiconductor and magnetic nanostructures

N. Pascual (Berlin, Germany) Pascual José Ignacio Freie Universitet Berlin???
Microscopy, spectroscopy and manipulation of single molecules and nanostructures

Management and Coordination
Chair: **Prof. Pedro M. Echenique** (UPV/EHU, DIPC, Spain)

G. Prentice (National Science Foundation, Virginia, USA)
Nanoscale Science and Engineering at the NSF

C. Sotomayor (Tyndall National Institute, Ireland)
The research agenda of the EU NoE PHOREMOST: Nanophotonics to reach molecular-scale technologies

J. Ahopelto (VTT Micro and Nanoelectronics, Finland)
Emerging Nanopatterning methods: The research work of the EU Integrated Project NaPa

Nanostructures
Chair: **Dr. Wlodzimierz Jaskolski** (Nicholas Copernicus University, Poland)

P..Hawrylak (Institute for Microstructural Sciences, National Research Council Canada)
Nanoscale semiconductor structures

J. Nelson (Imperial College London, United Kingdom)
Nanostructured and molecular materials for photovoltaic energy conversion

E. Muñoz (Instituto de Carboquímica, CSIC, Spain)
Multifunctional carbon nanotube composite fibers

D.S. Galvão (University of Campinas-São Paulo, Brazil)
Nanowires and suspended atomic chains from Au-Ag alloys

Nanobiotechnology
Chair: **Prof. Manuel Martin-Lomas** (CSIC, Spain)

D. Wechsler (VDI Technologiezentrum GMBH, Germany)
Perspectives of controllable nanoparticles in diagnosis and therapy

S. Penadés (IIQ-CSIC, Spain)
Biofunctional nanoparticles

M.Vélez (Universidad Autónoma de Madrid, Spain)
Biofunctionalized surfaces to study membrane bionanomachines

M. García-Parajó (Institute for Bioengineering of Catalonia, Universitat de Barcelona, Spain)
Near-field scanning fluorescence microscopy: a nano-tool to investigate the nanoscale organisation of the cell membrane

G. Chirico (Università degli Studi di Milano, Italy)
Voltage regulation of single molecule fluorescence

Video Projection introduced by I. Schuller (University of California, San Diego, USA)
When Things Get Small

Electronic structure
Chair: **Prof. Andrés Arnau** (UPV/EHU, Spain)

E. Artacho (University of Cambridge, United Kingdom)
Ab initio calculations of nanostructured materials

F.J. García de Abajo (Instituto de Óptica, CSIC, Madrid, Spain)
Advances towards surface-state nanoelectronics

J. Alonso (Universidad de Valladolid, Spain)
Structure and electronic properties of hydrogen clusters, free and deposited on graphitic surfaces

R. Miranda (Universidad Autónoma de Madrid, Spain))
Self-organized nanomagnets and organic molecules at surfaces

E. Ortega (Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain)
One-dimensional quantum wells in noble metal surfaces and nanostructures

W. Jaskolski (Nicholas Copernicus University, Poland)
Electronic and optical properties of self-assembled quantum dots in nanomechanical oscillators

Nanoelectronics
Chair: **Prof. Gonçal Badenes** (ICFO-The Institute of Photonic Sciences, Spain)

K. Henson (IBM Microelectronics, New York, USA)
CMOS trends for the Nanotechnology era

F. Gámiz (Universidad de Granada, Spain)
Electron transport in silicon based nano-transistors

R. Rurali (Universitat Autonoma de Barcelona, Spain)
Electronic and scattering properties of dopants in silicon nanowires

I. Schuller (University of California, San Diego, USA)
Nanoscience: Geometry in the laboratory

Nanomagnetism
Chair: **Dr. Fernando Plazaola** (UPV/EHU, Spain)

A. Hernando (Instituto de Magnetismo Aplicado, Universidad Autónoma de Madrid, Spain)
Orbital magnetism in Au and ZnO nanoparticles

D. Petit (Imperial College London, United Kingdom)
Magnetic logic devices for ultra high density data storage

F. Castaño (Massachusetts Institute of Technology, USA)
Multilayered magnetic ring devices for memory and logic applications

PARTICIPANTS

T. Agnieszka ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Ahopelto ..... VTT Micro and Nanoelectronics, Finland
C. Ai Ping ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Aizpurua ..... Donostia International Physics Center, Spain
I. Alkorta ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Alonso ..... Universidad de Valladolid, Spain
M. Alonso Cotta ..... Universidade Estadual de Campinas, Brazil
Y. Arica ..... Kirikkale University, Turkey
A. Arnau ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
E. Artacho ..... University of Cambridge, United Kingdom
J.M. Asua González ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
A. Ayuela ..... Donostia International Physics Center, Spain
G. Badenes ..... ICFO-The Institute of Photonic Sciences, Spain
R.J. Barranco ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
G. Bayramoglu ..... Kirikkale University, Turkey
F. Briones ..... Instituto de Microelectrónica de Madrid- CNM-CSIC
I. Bustero ..... Fundación Inasmet, Spain
I. Campillo ..... Labein-Tecnalia, Spain
F. Castaño ..... Massachusetts Institute of Technology, USA
G. Chirico ..... Univesitá degli Studi di Milano Bicocca, Italy
M. Collini ..... Univesitá degli Studi di Milano Bicocca, Italy
L. D'Alfonso ..... Universitá degli studi di Milano Bicocca, Italy
D. Dagnino Vazquez ..... Universitat de Barcelona, Spain
Y. de Miguel ..... NANOC, Labein-Tecnalia, Spain
E. Diéguez Delgado ..... Universidad Autónoma de Madrid, Spain
P.M. Echenique ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain
C. Echeverría Arrondo ..... Universidad Pública de Navarra, Spain

M. García-Parajó ..... Institute for Bioengineering of Catalonia, Universitat de Barcelona, Spain
F. Gámiz ..... Universidad de Granada, Spain
U. García Couceiro ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. García de Abajo ..... Instituto de Óptica, CSIC, Spain
A. García Etxarri ..... Donostia International Physics Center, Spain
A. García Gallastegui ..... Fundación Inasmet, Spain
M. García Vergniory ..... Donostia International Physics Center, Spain
N. Garmendia Arcelus ..... Fundación Inasmet, Spain
M. Giuliani ..... Universidad de Navarra, Spain
N. González Lakunza ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
N. Halas ..... Rice University, Texas, USA
P. Hawrylak ..... Institute for Microstructural Sciences. National Research Council of Canada
K. Henson ..... IBM Microelectronics, New York, USA
A. Hernando ..... Instituto de Magnetismo Aplicado, Universidad Autónoma de Madrid, Spain
M. Insausti ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
N. Iturriza ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
W. Jaskolski ..... Nicholas Copernicus University, Poland
U. Landman ..... Georgia Institute of Technology, USA
F. López Arbeloa ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
A. Luque ..... CEIT, Spain
R. Marcilla ..... Centro de Investigación Tecnológica en Electroquímica CIDETEK, Spain
J.R. Marín Regueira ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
M. Martín Lomas ..... CIC biomaGUNE,Spain
D. Mecerreyes ..... Centro de Investigación Tecnológica en Electroquímica CIDETEK, Spain
A. Milner ..... Weizmann Institute of Science, Israel
A. Milner ..... Weizmann Institute of Science, Israel
R. Miranda ..... Universidad Autónoma de Madrid, Spain
C. Miranda de Almeida de Barros ..... University of Plymouth/The Planetary Collegium, United Kingdom
J.M. Molina ..... CEIT and TECNUN, Spain
E. Muñoz ..... CSIC/Instituto de Carboquímica, Spain
O. Murua ..... Fundación Inasmet, Spain
J. Nelson ..... Imperial College London, United Kingdom
M. Noniashvili ..... Institute of Public Health Development Support NGO
P. Nordlander ..... Rice University, Texas, USA
I. Obieta ..... Fundación Inasmet, Spain
E. Ortega ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
R. Pacios ..... Centro de Investigación Tecnológica en Electroquímica CIDETEK, Spain
J.I. Pascual ..... Freie Universitet Berlin, Germany

S. Penadés ..... IIQ-CSIC, Spain
M. Peñalba Otaduy ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Pérez Conde ..... Universidad Pública de Navarra, Spain
J.B. Pethica ..... Trinity College Dublin, Ireland
D. Petit ..... Imperial College London, United Kingdom
M. Piris ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J.M. Pitarke ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J.L. Plaza Canga-Argüelles ..... Universidad Autónoma de Madrid, Spain
F. Plazaola ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
A. Porro ..... Labein-Tecnalia, Spain
G. Prentice ..... National Science Foundation, Virginia, USA
A. Rodríguez Alija ..... CSIC-Instituto de Microelectrónica de Madrid, Spain
I. Romero ..... Donostia International Physics Center, Spain
A. Ruiz ..... Centro de Investigación Tecnológica en Electroquímica CIDETEK, Spain
R. Rurali ..... Universitat Autonoma de Barcelona, Spain
J. Sánchez Dolado ..... Labein-Tecnalia, Spain
D. Sanchez-Portal ..... Donostia International Physics Center, Spain
I. Schuller ..... University of California, San Diego, USA
U. Shankar Patle ..... Chhatrapati Shivaji Institute of Technology, India
D. Soares Galvao ..... State University of Campinas, Brazil
C. Sotomayor Torres ..... Tyndall Nationa Institute, University College Cork, Ireland
I. Sramala ..... National Nanotechnology Center, Thailand
S. Tapaneeyakorn ..... St. Hugh's College, University of Oxford, United Kingdom
T. Teperik ..... Donostia International Physics Center, Spain
M. Urdampilleta ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
V. Pol Swati ..... Bar-Ilan University, Center for Advanced Materials and Nanotechnology, Israel
J.A. Valencia Gallegos ..... Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico
F. Valls ..... SENER Ingeniería y Sistemas, Spain
G.A. Vara Salazar ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
M. Vélez Tirado ..... Universidad Autónoma de Madrid, Spain
J.L. Vilas Vilela ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Vinals ..... SENER and Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
D. Wechsler ..... VDI Technologiezentrum GMBH, Germany
M. Wegener ..... Universität Karlsruhe, Germany
B. Wood ..... Imperial College London, United Kingdom
N. Zabala ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
I. Zalakain ..... Escuela Universitaria Poltécnica, Spain
X. Zhang ..... University of California, Berkeley, USA

Confinement: Universal Aspects in Soft Matter

December 12-13, 2006

ORGANIZER
Prof. Juan Colmenero (Universidad del País Vasco/Euskal Herriko Unibertsitatea, Donostia International Physics Center, Centro de Física de Materiales-CSIC, Spain)

The effect of "confinement" —i.e. geometrical restrictions— on the dynamics of fluids and glass-forming liquids has received much attention over last decade. Dynamics in confinement appears in a wide range of science: chemistry, physics, materials science, biology, etc. However, most of the recent activity was devoted to glass-forming systems and the question of the possible characteristic length scale for the glass-transition. A new strong move in this field came from the recent general interest in nano-science and nano-technology. The nanometer scale - i.e., the molecular scale - emerges as the most interesting range also for the confined geometries. On the other hand, confinement effects are becoming important in systems where the confined geometries are ill defined (water-biopolymers, multicomponent polymer materials, soft matter systems, etc). The idea of this SoftComp workshop is just to explore the "universal" aspects (if any) of confinement effects in fluids and soft matter. In this brief introduction to the workshop I will try to present some naïve reflections from a non-expert in the field.

CONTRIBUTIONS

J. Colmenero (Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, CSIC, Spain)
Why Confinement?

F. Kremer (University of Leipzig, Germany)
Molecular dynamics of thin polymer layers.

R. Zorn (Forschungszentrum Jülich, Germany)
Effect of nanoscopic confinement on the dynamics of glass-forming liquids and polymers.

D. Schwahn (Forschungszentrum Jülich, Germany)
Effect of asymmetric Component Mobility on Thermal Composition Fluctuations in the PEO/PMMA Blend.

M. Tyagi (Donostia International Physics Center, Spain)
Dynamic confinement effects in a blend of poly(ethylene oxide) with poly(vinyl acetate).

P. Lang (Forschungszentrum Jülich, Germany)
Colloidal Dynamics close to Walls.

V. Krakoviack (École normale supérieure de Lyon, France)
Slow dynamics in confinement: A mode-coupling theory.

A. Moreno (Donostia International Physics Center, Spain)
Confinement in simple binary systems with and without connectivity.

W.J. Briels (University of Twente, The Netherlands)
Coarse graining of slow variables applied to star-polymers.

M. Oettle (Johannes Gutenberg-Universität Mainz, Germany)
Effective colloidal interactions at fluid interfaces.

H. Frielinghaus (Forschungszentrum Jülich, Germany)
Confinement effects of block copolymers in bicontinuous microemulsions.

S. Cerveny (Donostia International Physics Center, Spain)
Confinement effects in water/polymers and water/biopolymers systems.

P. Moldenaers (K.U. Leuven, Belguim)
Effect of confinement on droplet dynamics in two-phase polymer blends.

P. Moreau (Centre de Recherche Paul Pascal, Bordeaux, France)
Confinement effect on structural and dynamical properties of a doped and oriented lamellar phases.

D. Cangialosi (Donostia International Physics Center, Spain)
Confinement and cooperativity of the alpha relaxation in glass forming polymers.

B. Loppinet (FORTH, Institute of Electronic Structure & Laser, Greece)
Confinement effects investigated by dynamic light scattering.

R. Lund (Donostia International Physics Center, Spain)
Dynamics of Polymers Confined in a Micellar Core.

J. Martin (CSIC, Instituto de Ciencia y Tecnología de Polímeros, Madrid, Spain)
Nanoporous Anodic Alumina as confining medium for polymers.

PARTICIPANTS

A. Alegria ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
F. Alvarez ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
A. Arbe ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
S. Arrese-Igor ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
M. Baciu ..... Universität zu Köln, Germany
P. Bassereau ..... Institut Curie, France
F. H. Bohn ..... IFF-FZ, Forschungszentrum Jülich, Germany
V. Botan ..... Johannes Gutenberg-Universität, Germany
W.J. Briels ..... University of Twente, The Netherlands
M. Brodeck ..... Donostia International Physics Center, Spain

D. Cangialosi ..... Donostia International Physics Center, Spain

S. Capponi ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

S. Cerveny ..... Donostia International Physics Center, Spain

J. Claracq ..... Dow Benelux B.V., The Netherlands

J. Colmenero ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, CSIC, Spain

L. Dahbi ..... IFF-FZ, Forschungszentrum Jülich, Germany

J. Dhont ..... IFF-FZ, Forschungszentrum Jülich, Germany

C. Drummond ..... Centre de Recherche Paul Pascal, Bordeaux, France

J. Forcada ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, POLYMAT, Spain

H. Frielinghaus ..... IFF-FZ, Forschungszentrum Jülich, Germany

A.-C. Genix ..... LCVN, Université Montpellier 2, France

K. Kang ..... IFF-FZ, Forschungszentrum Jülich, Germany

V. Krakoviack ..... École normale supérieure de Lyon, France

F. Kremer ..... University of Leipzig, Germany

P. Lang ..... IFF-FZ, Forschungszentrum Jülich, Germany

L. Liz-Marzán ..... Universidad de Vigo, Spain

B. Loppinet ..... FORTH, Institute of Electronic Structure & Laser, Greece

R. Lund ..... Donostia International Physics Center, Spain

S. Maccarrone ..... IFF-FZ, Forschungszentrum Jülich, Germany

J. Martin ..... CSIC, Instituto de Ciencia y Tecnología de Polímeros, Madrid, Spain

M. Mayorova ..... IFF-FZ, Forschungszentrum Jülich, Germany

P. Moldenaers ..... K.U. Leuven, Belguim

P. Moreau ..... Centre de Recherche Paul Pascal, Bordeaux, France

A. Moreno ..... Donostia International Physics Center, Spain

K. Mortensen ..... Risø National Laboratory, DTU, Denmark

A. Narros ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

K. Niedzwiedz ..... IFF-FZ, Forschungszentrum Jülich, Germany

J. Oberdisse ..... LCVN, Université Montpellier 2, France

M. Oettel ..... Johannes Gutenberg-Universität Mainz, Germany

I. Pastoriza Santos ..... Universidad de Vigo, Spain

W. Paul ..... Johannes Gutenberg-Universität Mainz, Germany

R. Perez Aparicio ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

W. Pyckhout-Hintzen ..... IFF-FZ, Forschungszentrum Jülich, Germany

I. Quintana ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

J. Ramos ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, POLYMAT, Spain

D. Richter ..... IFF-FZ, Forschungszentrum Jülich, Germany

D. Schwahn ..... IFF-FZ, Forschungszentrum Jülich, Germany

G. Schwartz ..... Donostia International Physics Center, Spain

M. Tyagi ..... Donostia International Physics Center, Spain

E. van Ruymbeke ..... FORTH, Institute of Electronic Structure & Laser, Greece

D. Vlassopoulos ..... FORTH, University of Crete, Greece

L. Willner ..... IFF-FZ, Forschungszentrum Jülich, Germany

R. Zorn ..... IFF-FZ, Forschungszentrum Jülich, Germany

SoftComp Area 4 Meeting

December 14, 2006

ORGANIZER
Prof. Juan Colmenero (Universidad del País Vasco/Euskal Herriko Unibertsitatea, Donostia International Physics Center, Centro de Física de Materiales-CSIC, Spain)

SoftComp (Soft Matter Nano-Composites) is part of the European Network of Excellence (NoE) which aims to establish a knowledge base for intelligent design of functional and nanoscale soft matter composites. SoftComp is organized for various areas covering different but related aspects of soft materials. In particular, the Area 4 Meeting deals with complex materials based on polymers. Each SoftComp Area meets twice a year to discuss the progress made on the different projects and to plan future activities accordingly. The December 2006 meeting of Area 4 took place in San Sebastian at the DIPC, organized by Professor Colmenero, coordinator of this Area.

CONTRIBUTIONS

J. Oberdise (LCVN, Université Montpellier 2, France)
New reverse Monte Carlo modelling of interacting aggregate structure in nanocomposites.

A. Alegria (Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain)
New dielectric results on PI-branched polymers: Dendrimers vs. other architectures.

G. Schwartz (Donostia International Physics Center, Spain)
An Adam-Gibbs based model to describe the single component dynamics in miscible polymer blends under hydrostatic pressure.

D. Richter (IFF-FZ, Forschungszentrum Jülich, Germany)
Future perspectives.

W. Paul (Johannes Gutenberg-Universität Mainz, Germany)
The point of view from the simulation & theory platform.

W. Pyckhout-Hintzen (IFF-FZ, Forschungszentrum Jülich, Germany)
Perspectives of time-resolved small angle neutron scattering.

PARTICIPANTS

A. Alegria ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
F. Alvarez ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
A. Arbe ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
S. Arrese-Igor ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
F. H. Bohn ..... IFF-FZ, Forschungszentrum Jülich, Germany
D. Cangialosi ..... Donostia International Physics Center, Spain
S. Cerveny ..... Donostia International Physics Center, Spain
J. Claracq ..... Dow Benelux B.V., The Netherlands
J. Colmenero ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, CSIC, Spain
L. Dahbi ..... IFF-FZ, Forschungszentrum Jülich, Germany
J. Dhont ..... IFF-FZ, Forschungszentrum Jülich, Germany
H. Frielinghaus ..... IFF-FZ, Forschungszentrum Jülich, Germany
A.-C. Genix ..... LCVN, Université Montpellier 2, France
B. Loppinet ..... FORTH, Institute of Electronic Structure & Laser, Greece
A. Moreno ..... Donostia International Physics Center, Spain
K. Niedzwiedz ..... IFF-FZ, Forschungszentrum Jülich, Germany
J. Oberdisse ..... LCVN, Université Montpellier 2, France
W. Paul ..... Johannes Gutenberg-Universität Mainz, Germany
R. Perez Aparicio ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
D. Richter ..... IFF-FZ, Forschungszentrum Jülich, Germany
D. Schwahn ..... IFF-FZ, Forschungszentrum Jülich, Germany
G. Schwartz ..... Donostia International Physics Center, Spain
M. Tyagi ..... Donostia International Physics Center, Spain
E. van Ruymbeke ..... FORTH, Institute of Electronic Structure & Laser, Greece
L. Willner ..... IFF-FZ, Forschungszentrum Jülich, Germany
R. Zorn ..... IFF-FZ, Forschungszentrum Jülich, Germany

20th Symposium on Surface Science 3S07

March 11-17, 2007

ORGANIZING COMMITTEE

Dr. Andrés Arnau
Prof. Pedro M. Echenique (Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain)
Prof. Andrés Saúl (CRMC-N/CNRS, France)
Prof. Pierre Müller (CRMC-N/CNRS, France)

INTERNATIONAL ADVISORY COMMITTEE

F. Aumayr (Vienna, Austria)
E. Bauer, (Tempe, Arizona, USA)
P. M. Echenique (San Sebastián, Spain)
W. Heiland (Osnabrück, Germany)
A. Ichimiya (Nagoya, Japan)
T. Koshikawa (Osaka, Japan)
D. Menzel (München, Germany)
P. Müller (Marseille, France)
F. Netzer (Graz, Austria)
A. Saul (Marseille, France)
W. D. Schneider (Lausanne, Switzerland)
G. Thornton (London, United Kingdom)
E. Tosatti (Trieste, Italy)
I. Tsong (Tempe, Arizona, USA)
P. Varga (Vienna, Austria)

Since the foundation of this meeting in 1983 as a winter school by the Institut für Allgemeine Physic of the Technical University of Vienna, the format of the meeting has been chosen similar to the Gordon Conferences with ample time for discussion, outdoor activities, as well as attendance below 100 participants. Its aim is to facilitate the exchange of ideas among scientist in the field of surface science and related areas.

CONTRIBUTIONS

Molecules at Surfaces I — Chair: P. Ruffieux

J.I. Pascual
Growth of donor-acceptor complexes on metal surfaces

W.A. Hofer
Fun with dipoles: structuring, changing, and switching Semiconductor surfaces with polar molecules

C. Ambrosch-Draxl
Surfaces and interfaces of organic semiconductors: the importance of van der Waals interaction

Electrons at Surfaces I — Chair: B. Hellsing

P. Hofmann
Quantitative measurements of surface conductance using microscopic four point probes

P. Ordejón
Analysis of scanning tunnelling microscopy images of the chargedensity-wave phase in quasi-one-dimensional Rb0.3MoO3

Self-Assembly I — Chair: G. Thornton

A. Gölzhäuser
High thermal stability of cross-linked aromatic self-assembled monolayers: Nanopattering via selective thermal desorption

M. Berglin
Structure information in thin organic films by combining quartz crystal microbalance with dissipation monitoring (QCM-D) with surface plasmon resonance (SPR)

M. Buck
Electrochemical nanotechnology: Studies on metal deposition controlled by self-assembled monolayers

Self-Assembly II — Chair: T. Greber

R. Fasel
Molecular self-assembly on nanostructured template surfaces

K.J. Franke
Tuning the interaction of fullerenes with metal surfaces by molecular self-assembly

N. Lorente
Properties of fullerene-base molecular structures on metal surfaces

Ion-Surface I — Chair: F. Aumayr

M. Descoins
Ion projection microscopy using a coaxial structure point source

J.R. Manson
Atomic and Molecular Collisions with Surfaces: Comparisons between Ar and N2 Scattering from Ru(0001)

Friction — Chair: U. Heinzmann

H. Brune
Nanotribology-between kinetics of Capillary Condensation and Atomic Stick and Slip Motion

S. Yu. Krylov
Delocalization of nano scale mechanical contact: Do we get what we see in atomic friction?

Electron States at Surfaces II
Chair: P. Ordejón

H.-C. Ploigt
Scanning tunnelling spectroscopy of image potential states on NaCl/Ag(100)

C. Ast
Local detection of spin-orbit splitting by scanning tunnelling spectroscopy

P. Brodard
Morphology and Electronic Structure of Self-Assembled Azure A Molecules on Au(111) investigated by Low-Temperature UHVSTM

Poster Presentations
Chair: W.-D. Schneider

N. Gonzalez Lakunza — **Self-Assembly of heterogeneous supramolecular structures with uniaxial anisotropy**

L. Gorelik — **Charge solitons in monolayer of colloidal quantum dots onto metal surface**

T. Greber — **Hydrogen in C60**

A. Leonardo — **Quantum well states as Fabry-Pérot modes in Mg/W(110)**

U. Narkiewicz — **Elimination of carbon from TiC/C nanocomposites through hydrogen treatment**

P. Ruffieux — **Site-specific adsorption of polycyclic aromatic hydrocarbons**

A. Saúl — **Monoatomic metallic wires: structure, electric transport and normal modes**

V. M. Silkin — **The role of surface state in the surface response function of metals**

G. Teobaldi — **Lepidocrocite titanium oxide ultrathin film on Ni(110) first principle modelling and simulated STM imaging**

D. Sanchez-Portal — **First-principles calculations of nanostructured surfaces: metal-insulator transition in the Si(557)-Au surface**

L. Lapena — **Coupling between structural and chemical phase transition during Sb/Si(111) adsorption**

P. Müller — **Spirals on Si(111) at sublimation and growth: first experimental evidence of deviations to the usual BCF behaviour**

Electron-Phonon Coupling
Chair: P. Hofmann

B. Hellsing
Electron-phonon coupling and its influence on electron and phonon lifetime at surfaces

E. V. Chulkov
Phonon spectra and electron-phonon coupling in a monolayer structure of Na on Cu(111)

Adsorbate Interactions at Surfaces
Chair: K. Morgenstern

N. V. Richardson
How circular is coronene? Weak 2D anisotropy leading to chirality in highly symmetric systems

G. Thornton
Molecular side hopping on an oxide surface

L. Diekhöner
Magnetic exchange coupling between single atoms

Surface Structure II
Chair: N.V. Richardson

P. Varga
Structure of the 67 ? 67 (surface oxide on Ni)R12.2O 3Al(111)

F. Mittendorfer
Oxygen induced surface roughening of Rh(322)

J. Hrbek
STM and XPS study of growth of Ce and CeOx on Au(111)

Semiconductor Surfaces
Chair: W. A. Hofer

I. S.T. Tsong
Optical studies of Si1-xGex Nanodots

F. Leroy
Self-ordering by electromigration

Theoretical Methods
Chair: N. Lorente

M. Scheffler
Key Theoretical and Algoritmic Needs for Predictive Modelling of Surface Chemistry and Catalysis

K. Reuter
On the accuracy of first-principles lateral interactions: Oxygen at Pd(100)

Molecules at Surfaces II — Chair: H. Brune

P. Cabrera-Sanfelix
Two dimensional Chlorine solvation on NaCl(100) at low Relative Humedity

A. Mugarza
Understanding the adsorption of water molecules on Ru(0001) and their interaction with co-adsorbed oxygen by low temperature scanning tunnelling microscopy

K. Morgenstern
Determination of non-adiabatic barriers for diffusion and attraction of molecules with a fs-STM

Miscellaneous I — Chair: N. Müller

U. Heinzmann
Attosecond time-resolved photoemission on metal surfaces

Andy T. Wu
Surface Study of Niobium for Superconducting Radio Frequency Cavities at Jefferson Lab

K. Miki
Bi nanoline on Si(001) surface and its application to onedimensional epitaxial growth or cluster formation as a template

Surface Structure II — Chair: P. Varga

A. Vazquez de Parga
Real space direct visualization of the layer-dependent roughening transition in nanometer-thick Pb films

J. A. Smerdon
Formation of a quasiperiodic Pb monolayer on a range of quasicystal surfaces

Miscellaneous II — Chair: I.S.T. Tsong

A. Biedunkiewicz
Nanocrystalline TiN coatings on Al2O3

H. van Beijeren
Finite size effects on equilibrium shapes due to line tensions

Ion Surface II — Chair: J.R. Manson

F. Aumayr
Nano-hillock formation by impact of slow highly charged ions on various surfaces

D. O. Boerma
Stratified Monte Carlo simulation of ion trajectories in crystalline solids applied to some problems in ion-solid interactions

PARTICIPANTS

C. Ambrosch-Draxl ..... Leoben, Austria
A. Arnau ..... San Sebastián, Spain
C.R. Ast ..... Stuttgart, Germany
F. Aumayr ..... Vienna, Austria
J. Barth ..... Vancouver, Canada
M.K. Berglin ..... Gothenborg, Sweeden
G. Bernard-Ganger ..... Cavaillon, France
A. Biedunkiewicz ..... Szczecin, Poland
D. Boerma ..... Madrid, Spain
P. Brodard ..... Lausanne, Switzerland
H.P. Brune ..... Lausenne, Swtizerland
M. Buck ..... St Andrews, United Kingdom
J.M. Burr ..... St. Andrews, United Kingdom
P. Cabrera-Sanfelix ..... San Sebastián, Spain
E. Chulkov ..... San Sebastián, Spain
M. Corral Valero ..... Marseille, France
M. Descoins ..... Marseille, France
L. Diekhöner ..... Aalborg, Denmark
P. Echenique ..... San Sebastián, Spain
R. Fasel ..... Zurich, Switzerland
K. Franke ..... Berlin, Germany
A. Gölzhäuser ..... Bielefeld, Germany
N. Gonzalez Lakunza ..... San Sebastián, Spain
L. Gorelik ..... Gothenburg, Sweeden
O. Grauby ..... Marseille, France
T. Greber ..... Zurich, Swtizerland
J.L. Hedlund ..... Gothenborg, Sweeden
U. Heinzmann ..... Bielefeld, Germany
B. Hellsing ..... Gothenborg, Sweeden

W. Hofer ..... Liverpool, United Kingdom

P. Hofmann ..... Aarhus, Denmark

J. Hrbek ..... Brookhaven, NY, USA

S. Krylov ..... Moscow, Russia

L. Lapena ..... Marseille, France

A. Leonardo ..... San Sebastián, Spain

F. Leroy ..... Marseille, France

N. Lorente ..... Toulouse, France

E. Lundgren ..... Lund, Sweden

R.J. Manson ..... Clemson, United States

K. Miki ..... Tsukuba, Japan

F. Mittendorfer ..... Vienna, Austria

K. Morgenstern ..... Hannover, Germany

N. Mueller ..... Bielefeld, Germany

A. Mugarza ..... Barcelona, Spain

P. Müller ..... Marseille, France

U. Narkiewicz ..... Szczecin, Poland

P. Ordejón ..... Barcelona, Spain

H.-C. Ploigt ..... Lausanne, Switzerland

G. Renaud ..... Grenoble, France

K. Reuter ..... Berlin, Germany

N. Richardson ..... St. Andrews, United Kingdom

P. Ruffieux ..... Thun, Switzerlad

D. Sanchez-Portal ..... San Sebastián, Spain

A. Saúl ..... Marseille, France

M. Scheffler ..... Berlin, Germany

W.D. Schneider ..... Lausanne, Switzerland

A.P. Seitsonen ..... Paris, France

V.M. Silkin ..... San Sebastián, Spain

J. Smerdon ..... Liverpool, United Kingdom

G. Teobaldi ..... Liverpool, United Kingdom

G. Thornton ..... London, United Kingdom

I. Tsong ..... Arizona, USA

H. van Beijeren ..... Utrecht, The Netherlands

P. Varga ..... Vienna, Austria

A.L. Vazquez de Parga ..... Madrid, Spain

M. Voinova ..... Gothenburg, Sweden

C. Woell ..... Bochum, Germany

A.T. Wu ..... Newport News, Virginia, USA

IN16B Meeting

May 10, 2007

The DIPC hosted a meeting of representative people from the Institut Laue-Langevin (ILL, Grenoble, France), the Basque Government and several Spanish enterprises. The objective was to discuss the possibilities of collaboration in the development of a neutron scattering spectrometer at the ILL, the backscattering instrument IN16B. IN16B is one of the main targets in the Millennium Project -the Program initiated by the ILL for updating existing instruments or designing new ones, in order to keep the leadership in Europe regarding neutron scattering facilities and offer competitive alternatives to those available soon with the new third generation neutron sources. IN16B would be an extremely useful instrument for the investigation of dynamical processes in condensed matter, providing a very good energy resolution and high neutron flux. In addition, the potential expertise gained by the Spanish community in this collaboration would be very valuable in a near future, if the European Spallation Source (ESS) Project would be attracted to the Basque Country.

CONTRIBUTIONS

H. Schober (Institut Laue-Langevin, Grenoble, France)
The ILL and the Millenium Project

B. Frick (Institut Laue-Langevin, Grenoble, France)
Backscattering techniques: the IN16B Project

D. Bazzoli (Institut Laue-Langevin, Grenoble, France)
Technical details of IN16B

PARTICIPANTS

H. Schober ..... Institut Laue-Langevin, Grenoble, France
B. Frick ..... Institut Laue-Langevin, Grenoble, France
D. Bazzoli ..... Institut Laue-Langevin, Grenoble, France

Scientists from the Basque Country:

J. Colmenero ..... UPV/EHU, DIPC, CFM-CSIC, San Sebastián, Spain
A. Arbe ..... CFM-CSIC-UPV/EHU, San Sebastián, Spain
J. Bermejo ..... CSIC-UPV/EHU, Leioa, Spain
V. Etxebarria ..... UPV/EHU, Leioa, Spain
I. del Campo ..... UPV/EHU, Leioa, Spain
J. Portilla ..... UPV/EHU, Leioa, Spain
J. Campo ..... CSIC, Spain

J. Doncel ..... Ministry of Education and Science, Spain

C. Oyón ..... Basque Government
A. Ansuátegui ..... Basque Government

Representatives from companies:

L. Uriarte ..... TEKNIKER, Spain
J. Alonso ..... TEKNIKER, Spain
I. Quintana ..... TEKNIKER, Spain
M. Carrera ..... AVS, Spain
E. Alvarez ..... ASTURFEITO, Spain

Ab-initio Approaches to Electron-phonon Coupling and Superconductivity

May 28-30, 2007

ORGANIZERS

Prof. Ole K. Andersen (Max-Planck-Institute for Solid State Research, Stuttgart, Germany)
Prof. Eugene V. Chulkov (Universidad del País Vasco/Euskal Herriko Unibertsitatea and Donostia International Physics Center, Spain)
Dr. Igor I. Mazin (Center for Computational Materials Science, Naval Research Laboratory, Washington, DC, USA)
Prof. Warren E. Picket (University of California, USA)
Dr. Aritz Leonardo (Universidad del País Vasco/Euskal Herriko Unibertsitatea and Donostia International Physics Center, Spain)

The aim of this workshop is to give an overview of recent ab-initio calculations of electron-phonon coupling in superconducting and nonsuperconducting materials, in bulk as well as at the surface. The workshop will cover, for example, linear response calculations of the e-ph coupling resolved both in energy and momentum, the newly developed superconducting density functional theory, and numerical methods of the Eliashberg theory. Important topics like anharmonicity, nonadiabacity, and unconventional order parameters will also be discussed, as well as spectroscopic effects of the e-ph coupling, e.g., in photoemission. Although the workshop is mainly theoretical, we anticipate having some experimentalists as well, and hope that this will lead to productive cross-fertilization between the theory and the experiment.

CONTRIBUTIONS

G. Bachelet
Electron-phonon interaction in electron-doped graphite

K.-P. Bohnen
Lattice dynamics and electron-phonon coupling in carbon nanotubes

M. Calandra
Superconductivity in graphite intercalated with alkaline earths

S. Curtarolo
First principle search for new superconducting materials

A. Eiguren
Complex quasiparticle structure induced by electron-phonon interaction

R. Gonnelli
Point-contact Andreev-reflection spectroscopy and e-ph coupling in doped and irradiated MgB2

E.K.U. Gross
How to predict the critical temperature of superconductors

P. Hofmann
The electron-phonon interaction probed by angle resolved photoemission

A. Liu
Electron-phonon coupling in Li2B2

S. Massidda
Impurity effects in superconductivity of MgB2

F. Mauri
Non-adiabatic vibrations in doped graphene

D.A. Papaconstanoupulos
Effects of pressure on superconductivity in monoatomic metals

I. Sklyadneva
Ab-initio calculations of electron-phonon coupling at metal surfaces

D. Van der Marel
Electron-phonon interaction and charge carrier mass enhancement in n-doped SrTiO3

O. Gunnarsson
Many-body effects in electron-phonon coupling

O. Fischer
Electron-phonon interaction in Chevrel-type compounds

A. Goldoni
Band diperssion K6C60(110) and K3C60(111) films measured with ARPES

I. Mazin
Charge ordering as alternative to Jahn-Teller distorrion

A. Fuertes Amparo
Superconductivity in layered zirconium and hafnium nitride halides

W. Pickett
Strong e-ph coupling in elemental metals under pressure: Observations, questions and progress poster

L. Boeri
Interaction in hexagonal layered compounds: alkali earth intercalated graphites and disilicides

J.S. Kim
Superconductivity in alkaline earth-intercalated graphites: CaC6 and SrC6

J. Kunes
KOs2O6: Superconducting rattler

M. Ellerby
Experimental aspects of superconductivity in intercalated graphites

B. Hellsing
First principles surface phonons and electron and phonon lifetimes at surfaces

A. Bergara
Increasing crystal local-field effects and superconductivity in simple elements under pressure

PARTICIPANTS

W.E. Pickett ..... University of California, Davis, USA
Sanchez-Carrera ..... Georgia Institute of Technology, USA
E.K.U. Gross ..... Freie Universitat Berlin, Institut fur Theoretische Physik, Germany
S. Eremeev ..... Inst. of Strength Physics and Materials Science, Russia
R. Diez Muiño ..... Centro de Física de Materiales CSIC, Spain
M.D. Johannes ..... Naval Research Laboratory, USA
A. Ayuela ..... Donostia International Physics Center, Spain
D.A. Papaconstantopoulos ..... George Mason University, USA
S. Curtarolo ..... Duke University, USA
B. Hellsing ..... Göteborg University, Sweden
M. Lueders ..... Daresbury Laboratory, United Kingdom
L.Boeri ..... MPI FKF Stuttgart, Germany
R. Heid ..... Forschungszentrum Karlsruhe Institut für Festkörperphysik, Germany
P. Hofmann ..... University of Aarhus, Denmark
A. Rodriguez-Prieto ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea and DIPC, Spain
K.-P. Bohnen ..... Forschungszentrum Karlsruhe Institut für Festkörperphysik, Germany
O. Gunnarsson ..... Max-Planck Institut für Festkörperforschung, Stuttgart, Germany
S. Streltsov ..... Institute of Metal Physics, Ekaterinburg, Russia
A. Liu ..... Georgetown University, Washington DC, USA
E. Gungor ..... Ankara, Turkey
F. Binder ..... Institut für Theoretische Physik Hamburg, Germany
M.G. Vergniory ..... Donostia International Physics Center, Spain
M. Martinez ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
A. Garcia-Lekue ..... Donostia International Physics Center, Spain
A. Goldoni ..... Sincrotrone, Trieste, Italy
M. Calandra Buonaura ..... CNRS and IMPMC, Paris, France
R.S. Gonnelli ..... Politecnico di Torino, Italy
S. Massidda ..... Universitá di Cagliari, Italy
F. Mauri ..... Université Pierre et Marie Curie, Paris, France
D. Van Der Marel ..... Université de Genève, Switzerland
I. Sklyadneva ..... Donostia International Physics Center, Spain
O. Fischer ..... DPMC Université de Genève, Switzerland
I.I. Mazin ..... Naval Research Laboratory, Washington DC, USA
A. Fuertes ..... Institut de Ciència de Materials de Barcelona (CSIC), Spain

J. Sung Kim ..... Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany
J. Kunes ..... University of Augsburg, Germany
M. Ellerby ..... University College London, United Kingdom
A. Bergara ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
E. Chulkov ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea and DIPC, Spain
C. Bersier ..... Freie Universitat Berlin, Germany

Symposium at the 4th European Conference On Neutron Scattering

June 26, 2007

In June the 4th European Conference on Neutron Scattering was held in Lund (Sweden), gathering more than 700 scientists. One of the Symposia of this great event, 'Modelling and Neutron Scattering. Soft Matter and Biology', was sponsored by the Donostia International Physics Center. The aim of this Symposium was to emphasize the potential of the combination of neutron scattering and modelling to unravel the structural and dynamical properties of systems of increasing complexity. Experts covering different areas of soft matter were invited with the financial support of the DIPC and gave excellent lectures. The Symposium was attended by a very large number of participants and a fruitful discussion atmosphere could be enjoyed.

CONTRIBUTIONS

C.N. Likos (Heinrich Heine Universität Düsseldorf)
G. Kneller (Centre de Biophysique Moleculaire, CNRS Orleans)
A. Wischnewski (Forschungszentrum Jülich, Jülich)
M. Tyagi (DIPC, San Sebastián)
M.A. González (Institut Laue-Langevin, Grenoble)

Elementary Reactive Processes at Surfaces

August 30-September 1, 2007

ORGANIZERS
Dr. Maite Alducin (Donostia International Physics Center, Spain)
Dr. Heriberto Fabio Busnengo (Universidad de Rosario, Argentina)
Dr. Ricardo Diez Muino (Centro de Física de Materiales-CSIC,
Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain)

SCIENTIFIC COMMITTEE
Dr. Cedric Crespos (Universite Bordeaux I, France)
Prof. Pedro M. Echenique (Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain)
Dr. Daniel Farias (Universidad Autónoma de Madrid, Spain)
Prof. Axel Gross (Universitaet Ulm, Germany)
Prof. Geert-Jan Kroes (Universiteit Leiden, Netherlands)
Prof. Mario Rocca (Universita di Genova, Italy)

Stimulated by the success of the Workshop 'Molecule-Surface Interactions: Elementary Reactive Processes', that was held in Donostia-San Sebastian in September 2004, we organized another 3-day Workshop in San Sebastian in 2007. The general subject of the workshop is similar, namely, 'Elementary Reactive Processes at Surfaces'. More specific topics include elementary reactions involved in fundamental and catalytic processes at surfaces, dynamics of atomic and molecular adsorption and desorption, non-adiabatic effects, energy dissipation, self-assembling, surface functionalization, and surface photochemistry. The goal is to bring together researchers actively working in any of these topics and discuss about their recent results, the current status of the field, and future perspectives.

CONTRIBUTIONS

P. Saalfrank
Controlling the photoreactivity of atoms and molecules at surfaces

C. Frischkorn
Ultrafast laser induced dynamics of associative desorption reactions from metal surfaces

T. Klüner
Surface photochemistry from first principles

A. Kummel
Chemical dynamics of gas reactions on organic films in UHV and in ambient air

T. Greber
Formation of single sheet boron nitrides on transition metals

N. Lorente
Dehydrogenation of benzene and pyridine on Cu(100) by tunneling electrons and the inelastic electron spectroscopy identification of the corresponding fragments

R. Beck
Quantum state resolved studies of Silane chemisorption on Si(100)

J.E. Gayone
Direct recoil spectroscopy of alkanethiol covered surfaces

R. Otero
Adsorption, dynamics and self-assembly of organic ad-species for catalytic and photovoltaic applications

E. Martínez Núñez
Inelastic scattering dynamics of Ar and CO_2 on a fluorinated self-assembled monolayer surface

Y. Wang
Understanding the supramolecular self-assembly of the fullerene derivative pcbm on Au(111) surface

S. Iannotta
Kinetic activated processes at surfaces and hybrid structure synthesis by supersonic and cluster beams

L. Vattuone
Adsorption and reaction of aligned molecules at metal surfaces

L.M. Molina
The reaction mechanisms for CO oxidation at gold catalysts: Relevance of realistic reaction conditions

A. Wodtke
Inverse velocity dependence of vibrationally promoted electron emission from a metal surface

E. Pehlke
TDDFT simulations of electronic energy dissipation during chemisorption

C. Carbogno
Spin effects in the adsorption of O_2 on Al(111) surfaces

G. Darling
Surface temperature effects in reactive dynamics

B. Jackson
The role of surface reconstruction in gas-surface reactions

C. Díaz
Multidimensional "high level" calculations for a prototype system: H_2/Cu(111)

G. Bocan
Sticking probability of N_2/W(110) using different exchange correlation functionals

A. Hodgson
H recombination at an ordered SnCu alloy surface: Reaction dynamics in a bistable system

A. Martínez
Dissociative adsorption of H_2 on W and W/Cu: Prominent features of surface alloying

P. Nieto
Using diffraction to study the Hydrogen dissociation dynamics at metal surfaces

A. Barinov
Quantum size effect in oxidation of thin Al(111) films grown on W(110) substrate

H.-J. Freund
Reactions on oxide-supported nanoparticles

C. Wöll
Elementary reactions at oxide surfaces: Case studies for ZnO

G. Comelli
STM investigations of elementary reaction steps on the oxydized Rh(110) surface

L. Guillemot
Nanostructure formation by reaction of H_2O with pre-adsorbed O on a Ag(110) surface

P. Cabrera-Sanfélix
Adsorption of H_2O and CO_2 at the surface of atmospheric particles

M. Dürr
Fast and across steps: Hydrogen diffusion on Si(001) under unusual conditions

L. Juurlik
The influence of steps on dissociative adsorption of H_2 on Pt(111)

E. Skulason
Density functional theory calculations for the Hydrogen evolution reaction in an electrochemical double layer on the Pt(111) electrode

L. Hornekaer
Hydrogen atom clustering and molecule formation on graphitic surfaces

R. Martinazzo
Quantum studies of Hydrogen dynamics on graphite surfaces

C. Arasa
Kinetics and dynamics study of the Oxygen Eley-Rideal reaction on β-cristobalite (100) surface

P. Larregaray
On the validity of semi-classical statistical theories of chemical reactions: From triatomic to gas-surface elementary processes

V.V. Petrunin
Use of electronic excitation to initiate and control elementary chemical reactions on gas-surface interphase

J. Cordón
Engineering electron bands in dislocation networks

F. Mittendorfer
The reactivity of Ni nanostructures on stepped Rh surfaces

PARTICIPANTS

M. Alducin ..... Centro de Física de Materiales CSIC-UPV/EHU, Spain

J.A. Alonso ..... Universidad de Valladolid, Spain

C. Arasa ..... Universidad de Barcelona, Spain

A. Arnau ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

A. Ayuela ..... Centro de Física de Materiales CSIC-UPV/EHU, San Sebastián, Spain

A. Barinov ..... Sincrotrone Trieste, Italy

R. Beck ..... EPFL, Lausanne, Switzerland

S. Bishop ..... University of California, San Diego, USA

G. Anahí Bocan ..... DIPC, San Sebastián, Spain

L. Bonnet ..... Institut des Sciences Moleculaires, Bordeaux, France

H.F. Busnengo ..... Instituto de Física Rosario, Argentina

P. Cabrera-Sanfelix ..... Donostia International Physics Center, Spain Spain

C. Carbogno ..... University of Ulm, Germany

G. Comelli ..... Trieste University, Italy

J. Cordón ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

M. Corso ..... Donostia International Physics Center, Spain

C. Crespos ..... Institut des Sciences Moleculaires, Bordeaux, France

G. Darling ..... University of Liverpool, UK

C. Diaz ..... LIC Leiden University, Netherlands

R. Díez Muiño ..... Centro de Física de Materiales CSIC-UPV/EHU, Spain

M. Durr ..... HS Esslingen / University of Marburg, Germany

P.M. Echenique ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain

D. Farias ..... Universidad Autonoma de Madrid, Spain

L. Fernández ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

A. Fernández-Ramos ..... Universidad de Santiago de Compostela, Spain

H.-J. Freund ..... Fritz Haber Institute of the Max Planck Society, Berlin, Germany

C. Frischkorn ..... Freie Universitat Berlin, Germany

J.E. Gayone ..... Centro Atomico Bariloche, Argentina

T. Greber ..... Universität Zürich, Switzerland

A. Gross ..... University of Ulm, Germany

L. Guillemot ..... Université Paris-Sud, Orsay, France

A. Hodgson ..... University of Liverpool, United Kingdom

L. Hornekaer ..... Aarhus University, Denmark

S. Iannotta ..... CNR - Institute for Photonics and Nanotechnologies, Povo di Trento, Italy

B. Jackson ..... University of Massachusetts Amherst, USA

J.I. Juaristi ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

L. Juurlink ..... Leiden University, Netherlands

T. Klüner ..... University Oldenburg, Germany

G.-J. Kroes ..... Leiden University, Netherlands

A. Kummel ..... University of California, San Diego, USA

P. Larregaray ..... Institut des Sciences Moleculaires, Bordeaux, France

G. Laurent ..... Universidad Autónoma de Madrid, Spain

N. Lorente ..... ICMAB – CSIC, Barcelona, Spain

M.L. Martiarena ..... CONICET, Bariloche, Argentina

L. Martin ..... Institut des Sciences Moleculaires, Bordeaux, France

F. Martín ..... Universidad Autonoma de Madrid, Spain

R. Martinazzo ..... University of Milan, Italy

A. Martínez ..... Instituto de Fisica Rosario, Argentina

E. Martínez-Núñez ..... Universidad de Santiago de Compostela, Spain

F. Mingo ..... Centro de Física de Materiales CSIC-UPV/EHU, Spain

F. Mittendorfer ..... University of Viena, Austria

L.M. Molina ..... Universidad de Valladolid, Spain

P. Nieto ..... Universidad Autónoma de Madrid, Spain

R. Otero ..... Universidad Autónoma de Madrid, Spain

E. Pehlke ..... University Kiel, Germany

M. Peñalba ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

V. Petrunin ..... SDU, Odense, Denmark

M. Quijada ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

J.C. Rayez ..... Institut des Sciences Moleculaires, Bordeaux, France

M. Rocca ..... Università di Genova, Italy

P. Roncin ..... Université Paris-Sud, Orsay, France

P. Saalfrank ..... University of Potsdam, Germany

A. Salin ..... Institut Jules Testaud, Merignac, France

R. Sayós ..... Universidad de Barcelona, Spain

O. Skibbe ..... University of Heidelberg, Germany

E. Skulason ..... Technical University of Denmark, DTU, Lyngby, Denmark

N. Susperregui ..... Institut des Sciences Moleculaires, Bordeaux, France

L. Vattuone ..... Università di Genova, Italy

S. Vázquez-Rodríguez ..... Universidad de Santiago de Compostela, Spain

Y. Wang ..... Universidad Autónoma de Madrid, Spain

A. Wodtke ..... UC Santa Barbara, USA

C. Wöll ..... Ruhr-Universität Bochum, Germany

X. Zubizarreta ..... Donostia International Physics Center, Spain

TNT2007

September 3-7, 2007

SPONSORS
PHANTOMS Foundation
Donostia International Physics Center
CIC Nanogune

TNT2007 is been launched following the overwhelming success of earlier Nanotechnology Conferences. The TNT2007 edition (September 03-07, 2007) will be held in the Kursaal congress facilities (San Sebastian, Spain). This high-level scientific meeting series aims to present a broad range of current research in Nanoscience and Nanotechnology as well as related policies (European Commission, etc.) or other kind of initiatives (iNANO, FinNano, GDR-E, etc.). TNT events have demonstrated that they are particularly effective in transmitting information and establishing contacts among workers in this field. The TNT2007 structure will keep the fundamental features of the previous editions, providing a unique opportunity for broad interaction

CONTRIBUTIONS

Chair: P.M. Echenique (Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain)
J.-M. Lehn (ISIS-ULP, France)
Self-Organization of Functional Supramolecular Devices
K. Ariga (NIMS, Japan)
Supermolecules as soft materials with dynamic structures and functions in all dimensions: from molecules to nano, micro, and bulk
S. Biswas (Indian Institute of Science, India)
Frictional dissipation in self assembled MONOlayers of organic molecules
W. Hofer (University of Liverpool, United Kingdom)
Perfect ordering of molecular nanostructures

Chair: J.-M. Pitarke (CIC nanoGUNE Consolider, Spain)
F. Besenbacher (iNANO, Denmark)
Enhanced Bonding of Gold Nanoparticles on Oxidized TiO2(110)
D. Farias (Universidad Autonoma de Madrid, Spain)
Probing reaction dynamics at metal surfaces with H2 diffraction

Chair: F. Besenbacher (iNANO, Denmark)
F. Moreno (Institut Català de Nanotecnologia, Spain)
High flexibility of DNA on short length scales probed by atomic force microscopy
J.-L. Toca Herrera (CIC biomaGUNE, Spain)
Bacterial protein crystals as pure biomimetic nano-molecules
J. Ripoll (Foundation for Research and Technology-Hellas (FORTH), Crete)
Obtaining information at the molecular level with mesoscopic fluorescent measurements

Chair: R. Reifenberger (Purdue University, USA)
J.C. Cuevas (Universidad Autonoma de Madrid, Spain)
Electronic transport in single-molecule junctions
A. Gourdon (CEMES/CNRS, France)
Single Molecular Devices
G. Cuniberti (Universität Regensburg, Germany)
Tuning the conductance of a molecular switch
D. Porath (The Hebrew University of Jerusalem, Israel)
Scanning tunneling spectroscopy and polarizability measurements of DNA and G4-DNA molecules
S. De Franceschi (CEA/DRFMC, France)
Electron transport in semiconductor nanowires
D. Galvao (State University of Campinas, Brazil)
Metallic Nanowires: When is an alloy not an alloy ?

Chair: A. Garcia-Martin (IMM-CSIC, Spain)
Y. Hirayama (Tohoku University, Japan)
Nuclear-spintronics in semiconductor nanostructures
U. Zuelicke (Massey University, New Zealand)
Nanospintronics meets relativistic quantum physics: Ubiquity of Zitterbewegung effects
C. Degen (IBM Research Div., United States)
Nuclear spin detection enabled by ultra-sensitive cantilevers

Chair: D. Rugar (IBM, USA)
O. Custance (Osaka University, Japan)
Chemical identification of individual surface atoms using dynamic force microscopy
R. Berndt (Christian-Albrechts-Universität, Germany)
Scanning Tunnelling Microscopy in a Microampère Range
P. Gruetter (McGill University, Canada)
Electrostatic Force Microscopy of InGa at Cryogenic Temperatures
J.M. Gomez (Universidad Autonoma de Madrid, Spain)
Adatom-adatom interaction mediated by an underlying surface phase transition

Chair: O. Custance (Osaka Univiversity, Japan)
D. Rugar (IBM Research Division, USA)
Magnetic resonance force microscopy: the quest for a molecular structure microscope
A. Hernando (Universidad Complutense de Madrid, Spain)
Magnetic properties of ZnO Nanoparticles
V. Mujica (Northwestern University, USA)
Magnetism in Gold Nanoparticles and Gold clusters: The Role of Chemisorption and Size
A. Berger (CIC nanoGUNE Consolider, Spain)
Challenges and Opportunities in Nano-Magnetism Research and Technology
H. Brune (EPFL, Switzerland)
Interface and composition effects determining the magnetic properties of bi-metallic nanostructures

Chairman: J. Pendry (Imperial College London, United Kingdom)
S.W. Hell (Max Planck Institute, Germany)
Breaking Abbe's barrier: Diffraction-unlimited resolution in far-field microscopy
N.F. van Hulst (Institute of Photonic Sciences - ICFO, Spain)
Nano-antennas - Tools for light on the nanoscale
R. Hillenbrand (Max Planck Institute, Germany)
Scattering-type Near-Field Microscopy: From Nanoscale Infrared Material Recognition to Superlens Studies

Chair: J.-L. Costa Kramer (IMM-CSIC, Spain)
U. Landman (Georgia Institute of Technology, USA)
Controlling the Nanoscale: From Nanocatalysis to Nanowires, DNA Damage, and Wigner Molecules
A. Marchenkov (Georgia Institute of Technology, USA)
AC Josephson effect and resonant superconducting transport through vibrating Nb nanowires

R.N. Barnett (Georgia Institute of Technology, USA)
Atomic, Electronic, and Transport Properties of semiconducting and molecular wires and their metallic Contacts
S. Berner (University of Zurich, Switzerland)
Boron Nitride Nanomesh: Functionality from a Corrugated Monolayer

Chairman: S. Roche (CEA-DRFMC, France)
E. Tosatti (SISSA, Italy)
Ballistic to diffusive crossover in the sliding of kicked clusters
G.-J. Kroes (Leiden University, Netherlands)
Nanocluster DFT studies with applications to production and storage of hydrogen
D. Thompson (Tyndall National Institute, Ireland)
Computer simulations of nanopatterning
A. Knizhnik (Kinetic Technologies Ltd, Russia)
Atomistic modeling of metal/high-k oxide interface properties as function of gas treatment
A. Shluger (University College London, United Kingdom)
Predicting the properties of new oxides for nano-devices
A. Asenov (University of Glasgow, United Kingdom)
Simulation of atomic scale statistical variability in nano-CMOS devices using DD, MC and QT simulation techniques

Chair: J.J. Saenz (UAM, Spain)
J. Pendry (Imperial College London, United Kingdom)
Transformation Optics: Designing Optics on the Nanoscale
P.M. Echenique (Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain)
A novel low energy collective excitation at metal surfaces
D.S. Wiersma (LENS, Italy)
Making lasers from dust: The physics and applications of random lasers
R. Carminati (Ecole Centrale Paris, France)
Local density of states in near-field optics

Chair: Remi Carminati (Ecole Centrale Paris, France)
M. Kall (Chalmers University of Technology, Sweden)
Nanoplasmonics – from fundamental studies to novel functionalities
J.F. Roch (Ecole Normale Superieure, France)
Photoluminescent diamond nanoparticles

Chair: M.Marques (UAM, Spain)
H.E. Stanley (Boston University, USA)
The Puzzling Behavior of Liquid Water: Some Clues from the Nanoscale
J. Klein (Oxford University/Weizmann Institut, United Kingdom)
Hydrated ions as nano-ball-bearings
S. Jarvis (University College Dublin, Ireland)
Biological Water
I. Yamashita (Panasonic, Japan)
Nanofabrication of inorganic functional structures by protein supramolecules
WET-NANOTECHNOLOGY

Chair: D. Sanchez-Portal (UPV/EHU, CSIC, Spain)
S. Roche (CEA/DRFMC, France)
Revisiting Charge Transport at the Mesoscopic Scale : Emerging quantum phenomena in the light of advanced Computational Approaches
G. Lanzani (Politecnico di Milano, Italy)
Dynamics at the nanoscale: Ultrafast Exciton processes in Single Wall Carbon Nanotubes

B. Hernandez Juarez (Institute of Physical Chemistry, Germany)
Quantum dot attachment and morphology control by carbon nanotubes
A. Rycerz (Jagiellonian University, Poland)
Valley filter and valley valve in graphene
S. Iijima (Meijo University, Japan)
Science and Nanotechnology of Nano-carbon materials

PARTICIPANTS (Total: 419)

E. Adam ..... École Polytechnique de Montréal, Canada
L. Aguilera ..... Universidad Autonoma de Barcelona, Spain
J. Aizpurua ..... Donostia International Physics Center, Spain
M. Akbari ..... Guilan University, Iran
J.I. Alava Marquinez ..... INASMET-Tecnalia, Spain
S. Albaladejo ..... Universidad Autonoma de Madrid, Spain
F. Alcaide ..... CIDETEC, Spain
F. Aldaye ..... McGill University, Canada
J. Aldazabal ..... CEIT, Spain
M. Alducin ..... Donostia International Physics Center, Spain
A. Alegria ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J.-P. Alet ..... CEA/DSM/DRECAM/SPCSI, France
M. Amado Montero ..... Universidad Complutense de Madrid, Spain
E. Andronescu ..... University Politehnica from Bucharest, Romania
S. Arana ..... CIC microGUNE, Spain
I. Aranberri ..... GAIKER, Spain
A. Aranzabe ..... Fundacion TEKNIKER, Spain
P. Ares Garcia ..... Nanotec Electronica S.L., Spain
K. Ariga ..... National Institute for Materials Science, Japan
A. Arnau ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
L. Arroyo-Ramírez ..... University of Puerto Rico, Puerto Rico
M. Arruebo ..... Aragon Nanoscience Institute, Spain
A. Asenov ..... University of Glasgow, United Kingdom
C. Atienza ..... TECNOVAC, S.L., Spain
A. Ayuela ..... Donostia International Physics Center, Spain
D. Azulay ..... Hebrew University of Jerusalem, Israel
A. Bagaturyants ..... Russian Academy of Science, Russia
S. Bahrs ..... Wiley-VCH Verlag GmbH & Co. KGaA, Germany
S. Baik ..... Advanced Institute of Nanotechnology (SAINT), Korea
D. Baldomir Fernández ..... Universidad de Santiago de Compostela, Spain
R. Baptist ..... CEA-MINATEC, LETI, France
R. Barnett ..... Georgia Institute of Technology, USA
I. Baroja Lasa ..... BIOMETA, Spain
A. Barreiro ..... Institut Catala de Nanotecnologia, Spain
J. Barriga ..... Fundación TEKNIKER - IK4, Spain
A. Barrio ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Barry ..... MIDATECH BioGUNE, Spain
J. Bates ..... McGill University, Canada

J. Bendall ..... University of Cambridge, United Kingdom
A. Benito. ..... Instituto de Carboquimica (CSIC), Spain
A. Berger ..... CIC nanoGUNE Consolider, Spain
R. Berndt. ..... IEAP, Universität Kiel, Germany
S. Berner ..... University of Zurich, Switzerland
F. Besenbacher ..... iNANO Center, University of Aarhus, Denmark
K. Bevan ..... Purdue University, USA
O. Bibari ..... Cea Grenoble/LETI, France
S.K. Biswas ..... Indian Institute of Science, India
A. Blanco ..... ICMM-CSIC, Spain
K. Bobrov ..... CNRS, France
P.M. Botta ..... Universidad de Santiago de Compostela, Spain
K. Boulahya. ..... Universidad Complutense de Madrid, Spain
S. Boz ..... University of Basel, Switzerland
E. Bravo ..... SODENA, Spain
F. Briones. ..... IMM-CSIC, Spain
H. Brune ..... EPFL, Switzerland
D. Brunel ..... CNRS - IEMN Département ISEN, France
D. Burbridge ..... University of Bath, United Kingdom
S. Burke. ..... McGill University, Canada
P. Cabrera. ..... Donostia International Physics Center, Spain
I. Campillo ..... CIC nanoGUNE Consolider, Spain
M.E. Cañas-Ventura ..... EMPA Materials Science & Technology, Switzerland
S. Capdevila. ..... Universitat Politècnica de Catalunya, Spain
R. Carminati ..... Ecole Centrale Paris, France
B. Carr ..... NanoSight Ltd, United Kingdom
C. Carrasco Pulido ..... Universidad Autonoma de Madrid, Spain
X. Cartoixa ..... Univeritat Autònoma de Barcelona, Spain
M. Casavola. ..... Scuola Superiore ISUFI, Italy
A.C. Cefalas ..... National Hellenic Research Foundation/ TPCI, Greece
F. Cerny ..... Czech Technical University, Czech Republic
C. Chacon ..... Phantoms Foundation, Spain
H. Chang ..... Korea Research Inst. of Chemical Technology, Korea
F. Chaves ..... Universitat Autònoma de Barcelona, Spain
I. Chilibon ..... National Institute of Research and Development for Optoelectronics, Romania
S.-C. Chiu ..... National Chung Cheng University, Taiwan
C.C. Cid ..... Universitat Rovira i Virgili, Spain
F. Ciesa ..... Università di Parma, Italy
S. Clarke ..... McGill University, Canada
J.-C. Coiffic ..... CEA/LETI-MINATEC, France
J. Colmenero ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, CSIC, Spain
V.R. Coluci ..... State University of Campinas, Brazil
M. Comoy ..... Nanotimes, France
J. Cordón Vélaz ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
T. Cornelius ..... GSI Darmstadt, Germany
A. Correia ..... Phantoms Foundation, Spain
M. Corso ..... Donostia International Physics Center, Spain
J.L. Costa-Krämer. ..... IMM-CNM-CSIC, Spain

B. Coto. ..... Fundación TEKNIKER - IK4, Spain
M. Cotta ..... UNICAMP - IFGW, Brazil
E. Cranston ..... McGill University, Canada
K. Critchley ..... University of Michigan, USA
J.C. Cuevas ..... Universidad Autónoma de Madrid, Spain
G. Cuniberti. ..... Tu Dresden, Germany
O. Custance ..... Osaka University, Japan
A. Dadvand ..... EMT-INRS, Canada
S. De Franceschi ..... CEA/DSM-DRFMC-SPSMS, France
Y. de Lacerda-Arôso. ..... Universidade do Minho, Portugal
T. de los Arcos ..... University of Basel, Switzerland
Y. De Miguel ..... LABEIN-Tecnalia, Spain
E. de Torres ..... MIDATECH BIOGUNE, Spain
C. Degen ..... IBM Almaden Research Center, USA
J.J. Del Val ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
M. Delcea ..... CIC biomaGUNE / Biosurfaces, Spain
E. Díaz ..... Universidad Complutense de Madrid, Spain
R. Diez Muino ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
H. Dil ..... University Zurich, Switzerland
E. Dinu ..... University Politehnica from Bucharest, Romania
J.R. Dios. ..... GAIKER - IK4, Spain
E. Dontsova ..... M.V. Lomonosov Moscow State University, Russia
I. Drubi Vega ..... BIOMETA, Spain
A. Dumitru ..... University of Bucharest, Romania
C. D´Anterroches ..... France Telecom R&D, France
P. Echenique ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, DIPC, Spain
C. Echeverría ..... Universidad Pública de Navarra, Spain
J.I. Eguiazabal ..... POLYMAT (UPV/EHU), Spain
A. Eleta ..... CIC biomaGUNE, Spain
M. Ellman Nevado ..... CEIT, Spain
J. Enkovaara. ..... CSC - Scientific Computing Ltd., Finland
E. Erkizia ..... LABEIN-Tecnalia, Spain
O. Ershova. ..... Moscow Institute of Physics and Technology, Russia
R. Escobedo ..... Universidad de Cantabria, Spain
S. Evans ..... University of Leeds, United Kingdom
D. Farías ..... Universidad Autonoma de Madrid, Spain
I. Fernandez ..... IMM-CSIC, Spain
L. Fernandez ..... Universidad Pais Vasco, Spain
R. Fernandez ..... Nanotec Electronica S.L., Spain
A. Fernandez ..... Instituto de Carboquimica (CSIC), Spain
I. Fernández Torrente. ..... Freie Universität Berlin, Germany
I. Firkowska ..... Caesar Research Center, Germany
S. Florez ..... INASMET-Tecnalia, Spain
P. Formentin ..... Universitat Rovira i Virgili, Spain
T. Frederiksen ..... Donostia International Physics Center, Spain
V. Frolov ..... A.M. Prokhorov General Physics Institute, Russia
L. Froufe ..... Ecole Centrale Paris, France
T. Fukui ..... University of Hyogo, Japan

M. Fuss. . . . . IMM-CSIC, Spain
M. Gaass . . . . . University of Regensburg, Germany
D. Galvao. . . . . State University of Campinas, Brazil
A. García Barrientos. . . . . Midatech Biogune S.L., Spain
D. Garcia de Oteyza . . . . . Max-Planck-Institut fuer Metallforschung, Germany
P. Garcia Escorial . . . . . Parque Cientifico de Madrid, Spain
A. Garcia Etxarri. . . . . Donostia International Physics Center, Spain
A. García Gallastegi. . . . . INASMET-Tecnalia, Spain
A. Garcia Martin . . . . . IMM-CSIC, Spain
P. Garcia Mochales . . . . . Universidad Autonoma de Madrid, Spain
M. Garcia Vergniory . . . . . Donostia International Physics Center, Spain
A. Garcia-Lekue . . . . . Donostia International Physics Center, Spain
L. Gence . . . . . UCL-FSA/DICE Lab, Belgium
C. Ghitulica. . . . . University Politehnica from Bucharest, Romania
A. Gil . . . . . Nanotec Electronica S.L., Spain
E. Goikolea . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
E.J. Gomes Santos . . . . . Donostia International Physics Center, Spain
J.M. Gomez . . . . . Universidad Autonoma de Madrid, Spain
J. Gomez Herrero. . . . . Universidad Autonoma de Madrid, Spain
R. Gomez Medina . . . . . ICMM-CSIC, Spain
N. Gonzalez . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
I. González . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
J. Gonzalez . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
B. González Valle . . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
M. Gorzny . . . . . University of Leeds, United Kingdom
A. Gourdon . . . . . CNRS-CEMES, France
P. Granitzer. . . . . Karl Franzens University Graz, Austria
P. Grutter . . . . . McGill University, Canada
S.W. Hell. . . . . Max Planck Institut for Biophysical Chemistry, Germany
A. Heras Aznar . . . . . ICEX, Spain
B. Hernández Juárez . . . . . Institute of Physical Chemistry, Germany
A. Hernando. . . . . Instituto de Magnetismo Aplicado, Spain
M. Hernando. . . . . Universidad Autonoma de Madrid, Spain
M.A. Herrero Chamorro . . . . . Universidad de Castilla La Mancha, Spain
R. Hillenbrand . . . . . Max-Planck-Institut für Biochemie, Germany
Y. Hirayama . . . . . Tohoku University, Japan
X.D. Hoa . . . . . McGill University, Canada
W. Hofer. . . . . University of Liverpool, United Kingdom
C.E. Hoppe. . . . . Universidad de Santiago de Compostela, Spain
M.J. Hortiguela . . . . . ICMM-CSIC, Spain
C.-L. Hsu . . . . . Chung Yuan Christian University, Taiwan
L.C. Hsu . . . . . National Chung Cheng University, Taiwan
H.M. Huang. . . . . National Chiao Tung University, Taiwan
J. Hubalek. . . . . Brno University of Technology, Czech Republic
S. Hudziack . . . . . University of London, United Kingdom
J.A. Ibáñez . . . . . LABEIN-Tecnalia, Spain
E. Ieva. . . . . Università degli studi di Bari, Italy
S. Iijima. . . . . Meijo University, Japan

I. Imaz. . . . . Institut català de nanotecnologia, Spain
J. Iñarrea . . . . . Universidad Carlos III, Spain
M. Ipatov. . . . . Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
Y. Ivanova . . . . . Belarusian State University, Belarus
F. Jabeen. . . . . University of Trieste, Italy
B. Jancar. . . . . Jozef Stefan Institute, Slovenia
S. Jarvis. . . . . University College Dublin, Ireland
J.-F. Roch . . . . . Ecole Normale Superieure de Cachan, France
S.Y. Jeong . . . . . ETRI/Tera Electronic Device Team, Korea
D. Jiménez. . . . . Universitat Autònoma de Barcelona, Spain
P. Jimenez . . . . . Instituto de Carboquimica (CSIC), Spain
J.C. Jiménez Sáez . . . . . Universidad Politecnica de Madrid, Spain
E. Jódar . . . . . Universidad Politécnica de Cartagena, Spain
M. Jofre . . . . . UPC-Department TSC, Spain
C. Jones. . . . . Simon Fraser University, Canada
G. Kada . . . . . Agilent AFM - Nano Measurements Division, Austria
M. Kameyama . . . . . Nikon, Japan
F. Karami . . . . . Tarbiat Modares University, Iran
S. Karim . . . . . University of Marburg, Germany
C.-T. Kim. . . . . Korea Food Research Institute, Korea
S. Kim . . . . . Kyungpook National University, Korea
D. Kim. . . . . Kyungpook National University, Korea
K. Kimura . . . . . University of Hyogo, Japan
J. Klein . . . . . Oxford University/Weizmann Institute, Israel
K. Klosova . . . . . Brno University of Technology, Czech Republic
A. Knizhnik . . . . . Kintech, Russia
M. Koeber. . . . . IMM-CSIC, Spain
G. Kortaberria. . . . . GRUPO GMT UPV/EHU, Spain
P. Kowalzik . . . . . Research Center Juelich, Germany
G.-J. Kroes . . . . . Leiden University, Netherlands
U. Kuelz . . . . . HWL Scientific Instruments GmbH, Germany
B. Kulnitskiy . . . . . TISNCM Technological Institute for Superhard and Novel Carbon Materials, Russia
M. Käll . . . . . Chalmers University of Technology, Sweden
V. Labunov . . . . . Belarusian State University of Informatics and Radioelectronics, Belarus
R. Lahiji. . . . . Purdue University, USA
U. Landman. . . . . Georgia Tech, USA
H. Lange . . . . . Technische Universitaet Berlin, Germany
G. Lanzani . . . . . Politecnico di Milano, Italy
I. Lebedeva . . . . . Moscow Institute of Physics and Technology, Russia
J. Ledesma . . . . . ScienTec Ibérica, Spain
J. LeDue . . . . . McGill University, Canada
J.-M. Lehn . . . . . ISIS - ULP, France
M.C. Lennartz . . . . . Research Center Juelich, Germany
S. Levichev . . . . . University of Minho, Portugal
H.-W. Liebsch . . . . . HWL Scientific Instruments GmbH, Germany
I. Llarena . . . . . CIC Biomagune, Spain
A. Lopez . . . . . DSM/DRFMC/SPSMS, France
M.J. Lopez . . . . . Universidad de Valladolid, Spain

F. López Arbeloa ..... Universidad País Vasco, Spain
V. Lopez Fernandez ..... Universidad Autonoma de Madrid, Spain
I. Lorite ..... Instituto de ceramica y vidrio/electroceramics, Spain
W. Lu ..... Konan University, Japan
P. Lujun ..... Osaka Prefecture University, Japan
M. Luna ..... IMM-CSIC, Spain
J. Maassen ..... McGill University, Canada
M.R. Malaga ..... IZASA, Spain
S. Maletta ..... Università degli Studi della Calabria, Italy
A. Mañanes ..... Universidad de Cantabria, Spain
H. Manzano ..... LABEIN-Tecnalia, Spain
A. Marchenkov ..... Georgia Institute of Technology/School of Physics, USA
V.I. Marconi ..... Universidad Complutense de Madrid, Spain
J.R. Marin ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
P. Marín Palacios ..... Instituto de Magnetismo Aplicado, Spain
B. Marquardt ..... Ecole Polytechnique/LPICM, France
M. Marques ..... Universidad Autonoma de Madrid, Spain
M. Marradi ..... CIC BiomaGUNE, Spain
L. Marsal ..... Universitat Rovira i Virgili, Spain
J. Martín ..... Universidad de Oviedo, Spain
J.A. Martín Gago ..... Centro de Astrobiologia, Spain
E. Martines ..... CIC BiomaGUNE, Spain
L.J. Martinez ..... IMM-CSIC, Spain
A.J. Martinez ..... Universidad Autonoma de Madrid, Spain
D. Martinez ..... Universidad Autonoma de Madrid, Spain
A.E. Martinez Muniz ..... University of Glasgow, United Kingdom
A. Martinez Otero ..... Instituto Catalan de Nanotecnologia, Spain
O. Martínez-Ávila ..... CicBiomaGUNE, Spain
N. Martsinovich ..... King's College London, United Kingdom
W. Maser ..... Instituto de Carboquimica (CSIC), Spain
D. Maspoch ..... Institut català de nanotecnologia, Spain
E. Mateo-Marti ..... Centro de Astrobiologia (CAB), Spain
J.M. Matxain ..... Euskal Herriko Unibertsitatea, Spain
S. Mayya ..... Samsung, Korea
J. McKendry ..... University of Leeds, United Kingdom
D. Mecerreyes ..... CIDETEC - IK4, Spain
I. Medalsy ..... Hebrew University, Israel
D. Mertz ..... Inserm U595, France
C. Mihoc ..... Rostock University, Germany
F. Mijangos ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
O. Millo ..... The Hebrew University of Jerusalem, Israel
A. Miura ..... Nara Institute of Science and Technology, Japan
E. Moncada Moro ..... BIOMETA, Spain
S. Monturet ..... Université Paul Sabatier, France
M. Moragues Cánovas ..... LABEIN-Tecnalia, Spain
S. Moralejo ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
M. Moreno ..... Universidad Autonoma de Madrid, Spain
M. Moreno ..... Universidad Autonoma de Madrid, Spain

F. Moreno-Herrero ..... Catalan Institute of Nanotechnology, Spain
C. Morgan ..... University of London, United Kingdom
A. Morozan ..... University of Bucharest, Romania
E. Mosiniewicz-Szablewska ..... Polish Academy of Sciences, Poland
A. Mugarza ..... ICMB-CSIC, Spain
M. Mujica ..... CEIT, Spain
V. Mujica ..... Northwestern University, USA
M. Munz ..... National Physical Laboratory (NPL), United Kingdom
M. Mura ..... King´s College London, United Kingdom
D. Muraviev ..... Autonomous University of Barcelona, Spain
C. Narros Hernandez ..... Universidad SEK, Spain
N. Nassar ..... University of Calgary, Canada
F. Nastase ..... University of Bucharest, Romania
C. Nastase ..... University of Bucharest, Romania
J. Nazabal ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
S.R. Neethirajan ..... University of Manitoba, Canada
N. Nicoara ..... Universidad Autonoma Madrid, Spain
O. Nicola ..... University Politehnica from Bucharest, Romania
G. Nicolessi ..... Nanotimes, France
N. Nishida ..... University of Hyogo, Japan
K. Nobusada ..... Institute for Molecular Science, Japan
F. Nouvertne ..... Raith GmbH, Germany
A. Odriozola ..... CEMITEC (Fundación CETENA), Spain
S. Oh ..... Advanced Institute of Nanotechnology (SAINT), Korea
D. Olea ..... Universidad Autónoma de Madrid, Spain
L. Ordoñez ..... TELSTAR INSTRUMAT, S.L., Spain
Z. Osváth ..... Res. Inst. for Techn. Phys. & Mater. Sci. (MFA), Hungary
R. Otero ..... Universidad Autónoma de Madrid, Spain
J. O'Mahony ..... Waterford Institute of Technology, Ireland
E. Pallecchi ..... Regensburg University, Germany
R. Paredes ..... ICMM-CSIC, Spain
J. Partridge ..... Applied PhysicsRMIT, Australia
J. Pendry ..... Imperial College London, United Kingdom
N. Pérez ..... CEIT, Spain
B. Perez Garcia ..... Universidad de Murcia, Spain
V. Pingitore ..... Università della Calabria, Italy
E. Pinilla ..... Nanotec Electronica S.L., Spain
V. Pires ..... SCHAEFER TECHNIQUES, France
M. Piris ..... Euskal Herriko Unibertsitatea, Spain
J.M. Pitarke ..... CIC nanoGUNE Consolider, Spain
F. Plazaola Muguruza ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
D. Pohlenz ..... Omicron NanoTechnology GmbH, Germany
A. Poissier ..... CECAM, France
M. Polak ..... Ben-Gurion University, Israel
D. Porath ..... Hebrew University, Israel
A. Porro ..... LABEIN-Tecnalia, Spain
P.A. Postigo ..... IMM-CSIC, Spain
Y. Pouillon ..... Universidad del País Vasco, Spain

I. Prieto ..... IMM-CSIC, Spain
A. Puente ..... Universitat de les Illes Balears, Spain
M. Quijada ..... Donostia International Physics Center, Spain
V. Reedo. ..... University of Tartu, Estonia
R. Reifenberger ..... Birck Nanotechnology Center, USA
S. Roche ..... CEA, DRFMC/SPSMS/GT, France
P. Rodgers. ..... Nature Nanotechnology, United Kingdom
C. Rodríguez Abreu ..... IIQAB-CSIC, Spain
A. Rodriguez Pierna ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
C. Rogero ..... Centro de Astrobiologia (CAB-INTA), Spain
J.L. Roldan ..... Phantoms Foundation, Spain
L. Románszki ..... Hungarian Academy of Sciences, Hungary
S. Rosenblum ..... Corning Incorporated, New Business Development, USA
M.C. Rotger Pons ..... Universitat de les Illes Balears, Spain
S.A. Rudi ..... Università degli Studi della Calabria, Italy
D. Rugar ..... IBM, USA
P. Ruiz Nicolás ..... Autonomous University of Barcelona, Spain
M. Ruiz Osés ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
C. Ruiz Zamarreño ..... Public University of Navarra, Spain
M. Rummeli ..... IFW-Dresden, Germany
K. Rumpf ..... Karl Franzens University Graz, Austria
A. Rycerz ..... Jagiellonian University, Poland
O. Rüdiger ..... Instituto de Catálisis y Petroleoquimica (CSIC), Spain
J.J. Saenz ..... Universidad Autonoma de Madrid, Spain
G. Sáenz-Arce. ..... Universidad de Alicante, Spain
E. Sahagun ..... Universidad Autonoma de Madrid, Spain
M. Sala ..... TELSTAR INSTRUMAT, S.L., Spain
J. Salado ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
M. Salsamendi ..... Fundacion Cidetec, Spain
I. San Sebastian. ..... CEIT, Spain
J. Sanchez Dolado ..... LABEIN-Tecnalia, Spain
D. Sanchez-Portal ..... Donostia International Physics Center, Spain
G. Santoro ..... Instituto de Ciencia y Tecnología de Polímeros, Spain
E. Sarantopoulou ..... National Hellenic Research Foundation/TPCI, Greece
G. Savini ..... University of Sussex, United Kingdom
F. Schaeffel ..... IFW Dresden, Germany
A. Schiffrin. ..... University of British Columbia, Canada
F. Schiller ..... Universidad País Vasco, Spain
A. Secchi ..... Universita degli studi di Parma, Italy
D. Serantes Abalo. ..... Universidad de Santiago de Compostela, Spain
V. Serikov. ..... NSG America Inc., USA
S. Serrano ..... Phantoms Foundation, Spain
Z. Shadrokh. ..... Tarbiat Modares University, Iran
C.-T Shih ..... Tunghai University, Taiwan
A. Shluger ..... University College London, United Kingdom
M. Shultz ..... Virginia Commonwealth University, USA
I. Silanes. ..... Donostia International Physics Center, Spain
V. Silkin. ..... Donostia International Physics Center, Spain

T. Sonoda ..... National Institute of Advanced Industrial Science and Technology (AIST), Japan
P. Spinicelli. ..... ENS - CNRS - UPMC, France
B. St-Antoine ..... Ecole Polytechnique de Montreal, Canada
E. Stanle. ..... Boston University, USA
D. Steiner ..... Hebrew University of Jerusalem, Israel
C.S. Steplecaru ..... IMM-CNM,CSIC, Spain
R. Stomp ..... Nanonis GmbH, Switzerland
G. Strat ..... Gh.Asachi Technical University of Iasi, Romania
K. Tanaka ..... Nanoscience and Development Support Team, RIKEN, Japan
F. Teran ..... GAIKER, Spain
D. Thompson ..... Tyndall National Institute, Ireland
J.L. Toca-Herrera. ..... CIC biomaGUNE / Biosurfaces, Spain
K. Tomankova ..... Palacky University, Czech Republic
J. Topple ..... McGill University, Canada
J.F. Torrado ..... IMM-CSIC, Spain
J. Torrent-Burgués ..... Universitat Politècnica de Catalunya, Spain
R. Torres ..... ICMM-CSIC, Spain
E. Tosatti ..... SISSA/ICTP/Democritos, Italy
R. Tsukamoto. ..... CREST, Japan Science and Technology Agency, Japan
V. Tuboltsev ..... University of Helsinki, Finland
M. Uresandi ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
I. Valtsifer ..... Institute of Technical Chemistry, Russia
M. Van De Waterbeemd ..... University of Kent, United Kingdom
N. van Hulst ..... ICFO - The Institute of Photonic Sciences, Spain
R. van Zee ..... NIST, USA
T. Vazifehshenas. ..... Shahid Beheshti University, Iran
C. Vázquez Vázquez. ..... Universidad de Santiago de Compostela, Spain
J.L. Viviente ..... INASMET-Tecnalia, Spain
A. Walton ..... University of Leeds, United Kingdom
L. Welte Hidalgo ..... Universidad Autonoma de Madrid, Spain
D. Wiersma ..... European laboratory for non-linear spectroscopy (LENS), Italy
N. Wintjes. ..... University of Basel, Switzerland
M.-C Wu ..... University of Cambridge, United Kingdom
H.-C. Wu ..... Institute of Atomic and Molecular Sciences, Taiwan
I. Yamashita ..... Nara Institute of Science and Technology, Japan
H. Yao ..... University of Hyogo, Japan
A. Yazdani ..... Tarbiat Modares University, Iran
R. Zanoni ..... Università degli Studi di Roma, Italy
W. Zhao ..... Université Paris Sud, France
V. Zhukov ..... Donostia International Physics Center, Spain
M.M. Zubitur ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain
U. Zuelicke. ..... Massey University, New Zealand
F. Zypman ..... Yeshiva University, USA

Efficient Density Functional Calculations: Hands-on Tutorial on the SIESTA Code

November 20-23, 2007

Following the very successful tutorial that took place in CECAM (Lyon) on June 2007, and taken into account that due to restrictions imposed by the European funds used to organize that event many researches could not attend, we are organizing a hands-on tutorial on the use of the SIESTA program in Donostia-San Sebastian.

This is a four-day hands-on tutorial on the use of the SIESTA code, aimed at researchers from different disciplines who want to use the code in their research and need, apart from basic practice, a grounding on the capabilities of the method and the approximations used. The main goal is that the students understand the physical and main technical approximations behind the method and can assess its reliability and its usefulness for a particular problem. Apart from the basics of density-functional theory, molecular dynamics simulation and geometry relaxation, which are common to most codes, the specific SIESTA topics to be covered are the generation and use of pseudopotentials, the construction of basis sets of strictly localized numerical atomic orbitals, localization issues for linear scaling both in the computation of the matrix elements and in the resolution of the hamiltonian, as well as more technical ones such as the influence of the real-space grid and parallelization. The tutorial will consist of morning lectures followed in the afternoon by a practical "hands-on" session. Some fundamental knowledge of quantum mechanics will be assumed, as well as basic statistical mechanics for the molecular dynamics part. Some solid state physics background will be helpful but not strictly needed. Basic knowledge of UNIX is required.

Talks dealing with the basic theory and methodology behind density functional ab initio calculations and the peculiarities of the SIESTA code will take place in the mornings at Donostia International Physics Center. The hands-on sessions will take place in the afternoons in the computer rooms of the Chemistry building and will try to show how to use the code and its different capabilities with reallistic examples.

TUTORIALS

A. García
Introduction: computer simulations, the quantum-mechanical many electron problem and Density Functional Theory

P. Ordejón
Brief introduction to the SIESTA method

E. Anglada
Basic execution (input, output, k-points, SCF, etc....)

Exercises will deal with simple runs and basic execution. The user should get familiar with the main inputs that have to be controlled/changed in typical SIESTA runs. User should also get acquainted with the fact that there are many other parameters for which reasonable default values are assumed, but may eventually be changed.

A. García
Pseudopotentials

A. García
How to generate and test pseudopotentials

D. Sanchez-Portal
Atomic orbitals of finite range as a basis set: why are they useful and how to generate them

J. Junquera
Code structure: calculation of the matrix elements of H and S and direct diagonalization

Exercises will deal with the generation and test of norm-conserving pseudopotentials, the use of different basis sets and how this affects the final results.

P. Ordejón
Order-N solvers: when and how to use them

D. Sanchez-Portal
Systematic convergence of realistic projects (Part I)
Systematic convergence of realistic projects (Part II)

P. Ordejón
Geometry optimization, molecular dynamics and vibrational spectra

D. Sanchez-Portal
Calculation of optical properties. Calculation of the macroscopic polarization in insulators

Exercises in this session will deal with the use of the linear scaling algorithms and molecular dynamics.

E. Anglada
Parallel SIESTA: compiling and running in parallel

J. Junquera
Analysis, visualization and postprocessing tools (Part I)
Analysis, visualization and postprocessing tools (Part II)

E. Anglada
How to get SIESTA

Exercises in this session will deal with the visualization of structures, the charge density, local density of states, wavefunctions, and other outputs of the program. If there is enough time we can also include exercises on the calculation of optical properties.

PARTICIPANTS

R. Diez Muiño ..... CSIC-Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

A. García Lekue ..... Donostia International Physics Center, Spain

A. Zugarramurdi Camino ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

N. Gonzalez ..... Donostia International Physics Center, Spain

G. A. Bocan ..... Donostia International Physics Center, Spain

E. J. Gomes dos Santos ..... CSIC-Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

X. Zubizarreta ..... Donostia International Physics Center , Spain

F. Mingo ..... CSIC-Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

P. Cabrera-Sanfelix ..... Donostia International Physics Center, Spain

Y. Sánchez Paisal ..... Donostia International Physics Center, Spain

M. Alducin Ochoa ..... CSIC-Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

O. Hovorka ..... nanoGUNE, Spain

A. Arnau ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

G. Barandika Argoitia ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

E. Apiñaniz ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

I. Silanes Cristóbal ..... Donostia International Physics Center, Spain

N. Zaitsev ..... Donostia International Physics Center , Spain

P. Vitoria Garcia ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

N. Zabala ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

A. Katerinopoulou ..... University of Copenhagen, Denmark

L. Arnskov Olsen ..... University of Copenhagen, Denmark

S. González de la Torre ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

I. Juaristi ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

R. Poloni ..... ESRF, France

H. Manzano ..... Labein-Tecnalia, Spain

R. Escribano Torres ..... IEM, CSIC, Spain

B. Martin Llorente ..... IEM, CSIC, Spain

S. Datta ..... S. N. Bose Research Centre, India

O. Olvera Neria ..... Universidad Autónoma del Estado de Hidalgo, México

A. De Virgiliis ..... INIFTA, CONICET-UNLP, Argentina

R. García Amorim ..... Universidade de Sao Paulo, Brasil

M. Hernández Rangel ..... Universidad Nacional Autónoma de México, México

E. Hobi ..... Universidade de São Paulo / Depto. Física dos Materiais, Brasil

S. Núñez González ..... Universidad de Valladolid,Spain

T. del Rio ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

M. Fernández Gómez ..... Universidad de Jaén, Spain

H. Peelaers ..... University of Antwerp, Belgium

D.C. Gupta ..... Jiwaji University, India

A. Narros ..... Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

N. Berkaine ..... SPCTS Université de Limoges, France

A. Ayuela ..... CSIC-Universidad del País Vasco/Euskal Herriko Unibertsitatea, Spain

J. Aldazabal ..... CEIT, Spain

F. Forti ..... Univ. Barcelona, Spain

JCNS Panel Meeting

November 29-30, 2007

The DIPC hosted the meeting of the JCNS Panel for proposals selection. After the permanent shut down of the research reactor FRJ-2 in Jülich, the *Jülich Centre for Neutron Science* (JCNS, http://www.jcns.info) has been founded. It encompasses the in-house research of the Institut für Festkörperforschung Jülich with neutrons, the instrument and method development and the instrument operation and user programs at the FRM-II reactor in Munich, the SNS Spallation Source in Oak Ridge and the ILL high-flux reactor in Grenoble. Twice a year, a committee of external experts in neutron scattering selects the best proposals from those submitted from allover the world to grant beamtime in the different instruments. The November meeting took place at the DIPC.

The Panel consisted of a Chairperson (A. Arbe, CFM, San Sebastián) and 8 members (Stephan Förster, Jean-Pierre Gaspard, Kim Leffmann, Roland May, Julian Oberdisse, Frederic Ott, Christian Pfleiderer and Dimitris Vlassopoulus). In addition, three representative persons from JCNS (Thomas Gutberlet, Sasha Ioffe and Reiner Zorn) attended the meeting to inform the Panel about the state of the art and future development of the instruments.

Universal Aspects in Soft Matter: Slow Dynamics

December 12-13, 2007

In the spirit of SoftComp, looking for universal features of different classes of soft materials is one of the major goals. This is an inter-area (topical) workshop with discussions of the properties of the slow dynamical processes taking place in different systems including polymers, colloids, biological molecules, micelles, liquid crystals. The main properties of the dynamics related to the glass transition, functionality of proteins yielding mechanism, reptation in polymers of different architectures, ageing etc. were addressed. A very rich variety of systems and phenomena were considered. Also noteworthy was the number of experimental techniques involved in the papers presented (dielectric and mechanical spectroscopy, NMR, neutron scattering, tracer diffusion, dynamic light scattering including novel developments with laser-speckle imaging, microscopy). From a theoretical point of view, the tremendous progress made in the last few years in this direction was obvious as well. We can say that the workshop was very worthwhile, giving a broad idea of the state of the art of this subject in the different areas of SoftComp.

CONTRIBUTIONS

J. Colmenero
Opening and Welcome

N. F. Fatkullin
NMR, the Corset effect and dynamics of polymer melts

A. Moreno
Entangled-like chain dynamics in non-entangled polymer blends with Large dynamic asymmetry

L. Dahbil
SANS observation of the relaxation of a hyperbranched polymer in a linear matrix after a large step strain deformation

M. Fuchs
Structural and conformational dynamics of supercooled polymer melts

P. Pfeiderer
Glassy dynamics in suspensions of hard ellipsoids

P. Schurtenberger
Clusters, viscoelastic phase transitions and glasses in protein solutions

R. Biehl
Global dynamics of the protein alcohol Dehydrogenase

S. Harris
Modeling the mechanics of duplex DNA

E. Zaccarelli
Glasses in starts polymer mixtures (tentative)

J. Stellbrink
Mesoscopic dynamics of star-like micelles
B. Loppinet
Dense solutions of diblock copolymers multiarm starts: structure and dynamics

J. K. G. Dhont & K. Kang
Tracer diffusion in isotropic and nematic colloidal rod networks: electrostatic interactions and hydrodynamic screening

D. Vlassopolous
Towards a phenomenological description of yielding mechanisms in colloidal glasses

F. Scheffold
Heterogeneous slow dynamics in a drying colloidal thin film

J. Baschnagel
Structural relaxation in glass forming polymer films with one free surface

D. Long
Case-II diffusion and solvent-polymer films drying: a meso-scale model

W. Paul
Single molecule probes of the glass transition in polymer melts: a molecular dynamics investigation

D. Cangialosi
Cooperative dynamics in non-polymeric glass-formers

L. Ramos
Origin of the slow dynamics and the aging o a soft glass

M. Cloitre
Slow dynamics and ageing in the rheology of soft concentrated dispersions

C. Genix
Direct microscopic observation of structural relaxation in systems with tunable dynamic asymmetry

C. Lorthioir
Dynamic heterogeneities in polymer/clay and polymer blend/clay nanocomposites: A solid state NMR investigation

PARTICIPANTS

D. Richter ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
A. Moreno ..... CFM-CSIC, Spain
R. Zorn ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
A. Arbe ..... CFM-CSIC, Spain
F. Alvarez ..... UPV/EHU, Spain
S. Arrese-Igor ..... CFM-CSIC, Spain
G. Schwartz ..... DIPC, Spain
S. Cerveny ..... DIPC, Spain
W. Pyckhout-Hintzen ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
L. Willner ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
F.H. Bohn ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
R. Perez Aparicio ..... UPV/EHU, Spain
W. Paul ..... Johannes-Gutenberg Universitat ; Institut fur Physik, Germany
J. Colmenero ..... UPV/EHU, DIPC, CSIC, Spain
Jan; Dhont ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
Sara; Capponi ..... UPV/EHU, Spain
Reidar; Lund ..... DIPC, Spain
Martin; Brodeck ..... DIPC, Spain
Daniele; Cangialosi ..... DIPC, Spain
Kyongok; Kang ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
Arturo; Narros; ..... UPV/EHU, Spain
Angel; Alegría ..... UPV/EHU, Spain
Didier; Long ..... CNRS/Rhodia Recherches et Technologies, France
P. Sotta ..... CNRS/Rhodia Recherches et Technologies, France
P. Pfleiderer ..... Johannes-Gutenberg-Universitaet Mainz, Institut fuer Physik, Germany
C. Groß ..... Johannes-Gutenberg-Universitaet Mainz, Institut fuer Physik, Germany
L. Ramos ..... CNRS-Montpellier; Laboratoire des Colloïdes, Université Montpellier II, France
A. Wischnewski ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
J. Stellbrink ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
R. Biehl ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
E. Zaccarelli ..... Universitá La Sapienza; Dipartimento di Fisica and CNR-INFM-SOFT, Rome, Italy
M. Cloitre ..... ESPCI-CNRS; Laboratoire Matière Molle et Chimie, Paris, France
N. Merlet ..... ESPCI-CNRS; Laboratoire Matière Molle et Chimie, Paris, France
M. Fuchs ..... Universitaet Konstanz, Fachbereich Physik, Germany

N. Fatkullin ..... Kazan State University, Russia
J. Forcada Garcia ..... UPV/EHU, Spain
J. Ramos Julian ..... UPV/EHU, Spain
A. Imaz Makazaga ..... UPV/EHU, Spain
R. Hidalgo Alvarez ..... Universidad de Granada, Facultad de Ciencias, Spain
P. Schurtenberger ..... University of Fribourg, Switzerland
L. Dahbi ..... Forschungszentrum Juelich; Institut fuer Festkoerperforschung, Germany
A.-C. Genix ..... LCVN - Université Montpellier II, France
B. Loppinet ..... FORTH and University of Crete, Greece
D.Vlassopoulos ..... FORTH and University of Crete, Greece
G. Royston ..... CNRS/Rhodia Recherches et Technologies, France
J. Baschnagel ..... Institut universitaire de France; Institut Charles Sadron, Strasbourg, France
F. Scheffold ..... University of Fribourg, Switzerland
C. Lorthioir ..... ICMPE-CNRS, France
S. Harris ..... University of Leeds; Biological Physics at Leeds, United Kingdom
L. del Valle Carrandi ..... DIPC, Spain
M. Bernabei ..... DIPC, Spain
S. Plaza Garcia ..... DIPC, Spain
E. Masnada ..... CNRS/Rhodia Recherches et Technologies, France
E. Lezak ..... DIPC, Spain
D. Racko ..... DIPC, Spain
D. Oteyza ..... DIPC, Spain

On December 14th, the Network Coordination Committee of the Network of Excellence SoftComp met at the DIPC. The aim was to define the activities of the different areas of the Network for the first six months of 2008 and give a first impulse to the organization of the next International Conference on Soft Matter, to be held in Granada in 2010.

The participants were: Dieter Richter (General Coordinator), Gerhard Gompper, Jan Dhont, Patricia Bassereau, Juan Colmenero, Massimo Noro, Dimitris Vlassopoulus, Luis Liz-Marsan, Katharina Schwemmer, Peter Olmsted, Hugo Bohn and Roque Hidalgo.