

MEMORIA CFM 2011



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Materialen Fisika Zentroa

Centro de Física de Materiales

Materials Physics Center



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IT Systems Technician
IT Systems Technician

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II. LINEAS DE INVESTIGACION

1. Electronic Properties at the Nanoscale

- a. Electronic Excitations in Surfaces and Nanostructures.
- b. Nano-Bio Spectroscopy and ETSF.
- c. Correlated Systems of Atoms and Electrons, Superconductors and Superfluids.

2. Chemical Physics of Complex Materials

- a. Modelization and Simulation.
- b. Spectroscopy and Microscopy at the Nanoscale.
- c. Gas/Solid Interfaces.

3. Polymers and Soft Matter

4. Photonics

- a. Nanophotonics
- b. Laser Physics and Photonic Materials

III. PUBLICACIONES

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10. Time-dependent density-functional and reduced density-matrix methods for few electrons: Exact versus adiabatic approximations.
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13. Broadband Dielectric Spectroscopic, Calorimetric, and FTIR-ATR Investigations of D-Arabinose Aqueous Solutions.
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15. Surface assembly of porphyrin nanorods with one-dimensional zinc-oxygen spinal cords.
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48. Simulating anisotropic etching of silicon in any etchant: evolutionary algorithm for the calibration of the continuous cellular automaton.
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56. Attachment of Protoporphyrin Dyes to Nanostructured ZnO Surfaces: Characterization by Near Edge X-ray Absorption Fine Structure Spectroscopy.
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63. Self-Supporting Thin Ytria-Stabilised Zirconia Electrolytes for Solid Oxide Fuel Cells Prepared by Laser Machining.
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Arrese-Igor S, Arbe A, Fick B, Colmenero J.
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Marusic L, Despoja V, Sunjic M.
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Esteban R, Vogelgesang R, Kern K.
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IV/ TESIS

Título: First-Principles Study of the Electronic and Magnetic Properties of Defective Carbon Nanostructures
Autor: Elton Jose Gomes Santos, UPV/EHU
Supervisor: Daniel Sanchez Portal / Andrés Ayuela
Fecha: 4 de octubre 2011

Título: Structural Relaxation and Chain Dynamics in Polymer Melts: a Computational Investigation on the Role of the Intramolecular Barriers.
Autor: Marco Bernabei, UPV/EHU.
Supervisor: Angel Moreno
Fecha: 8 de abril 2011

Título: Resonant Raman-Brillouin Scattering in Semiconductor and Metallic Nanostructures: from Nano-Acoustics to Acousto-Plasmonics
Autor: Nicolas Large, Université de Toulouse / UPV-EHU
Supervisor: Javier Aizpurua
Fecha: 21 de octubre 2011

Título: Optical properties and high-frequency electron transport in plasmonic cavities
Autor: Olalla Perez Gonzalez, UPV/EHU

Supervisor: Nerea Zabala / Javier Aizpurua
Fecha: 18 de noviembre 2011

Título: Functionalized Polymers as a Tool for Investigating the Component Dynamics of Polymer Blends.
Autor: Sandra Plaza García, UPV/EHU.
Supervisor: Angel Alegría
Fecha: 16 de diciembre 2011

Título: The structure and the dynamics of poly(vinyl methyl ether) PVME and PVME in concentrated water solution: A study by neutron scattering and fully atomistic molecular dynamics simulations.
Autor: Sara Capponi, UPV/EHU
Supervisor: Juan Colmenero / Arantxa Arbe.
Fecha: 9 de mayo 2011

Título: Pressure induced complexity in simple elements and alloys from first-principles calculations.
Autor: Ion Errea López, UPV/EHU
Supervisor: Aitor Bergara / Vyacheslav Silkin
Fecha: 21 de octubre 2011

V CURSOS

ALBERTO RIVACOBA

Curso: Master Universitario en Nanociencia
Asignatura: Advanced nano-scale characterization techniques
Fecha: 01/09/2011
Horas: 15
Tipo: Master

NEREA ZABALA UNZALU

Curso: Master Universitario en Nanociencia
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Tipo: Master

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MAITE ALDUCIN OCHOA

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Asignatura: Advanced Theoretical Methods in Nanoscience
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Asignatura: Advanced Theoretical Methods in Nanoscience
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Horas: 8
Tipo: Master

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Curso: Master Universitario en Nanociencia
Asignatura: Advanced Topics in Nanomaterials
Fecha: 01/09/2011
Horas: 15
Tipo: Master

ROLINDES BALDA DE LA CRUZ
Curso: Grado en Ingeniería Técnica de Telecomunicación
Asignatura: Ampliación de Física
Fecha: 01/09/2011
Horas: 114
Tipo: Licenciatura / Grado

ISABEL TELLERIA ECHAVERRIA
Curso: Licenciatura en Química
Asignatura: Bases de las técnicas experimentales y los métodos de análisis
Fecha: 01/09/2011
Horas: 25
Tipo: Licenciatura / Grado

ALBERTO RIVACOBIA
Curso: Master Universitario en Nanociencia
Asignatura: Classical Electrodynamics
Fecha: 01/09/2011
Horas: 15
Tipo: Master

JOSEBA IÑAKI JUARISTI OLIDEN
Curso: Master Universitario en Nanociencia
Asignatura: Classical Electrodynamics
Fecha: 01/09/2011
Horas: 15
Tipo: Master

JOAQUÍN FERNÁNDEZ RODRIGUEZ
Curso: Master en Ingeniería de materiales avanzados (especialidad investigación)
Asignatura: Comportamiento eléctrico, electrónico, magnético, térmico y óptico de materiales
Fecha: 01/09/2011
Horas: 40
Tipo: Master

ROLINDES BALDA DE LA CRUZ
Curso: Master en Ingeniería de materiales avanzados (especialidad investigación)

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Fecha: 01/09/2011

Horas: 10

Tipo: Master

ENRIQUE ORTEGA CONEJERO

Curso: Grado en Fundamentos de Arquitectura

Asignatura: Conceptos del Medio Físico

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Tipo: Licenciatura / Grado

ANGEL JOSE MORENO SEGURADO

Curso: Master Universitario en Nanociencia

Asignatura: Dynamics of complex materials

Fecha: 01/09/2011

Horas: 30

Tipo: Master

JUAN JOSÉ DEL VAL

Curso: Licenciatura en Química

Asignatura: Efectos Biológicos y Aplicaciones de la Radiación

Fecha: 01/09/2011

Horas: 45

Tipo: Licenciatura / Grado

NEREA ZABALA UNZALU

Curso: Grado en Física

Asignatura: Electromagnetismo II

Fecha: 01/09/2011

Horas: 60

Tipo: Licenciatura / Grado

ENRIQUE ORTEGA CONEJERO

Curso: Grado en Fundamentos de Arquitectura

Asignatura: Estabilidad e Isostaticidad

Fecha: 01/09/2011

Horas: 80

Tipo: Licenciatura / Grado

FREDERIK MICHAEL SCHILLER

Curso: Master Universitario en Nanociencia

Asignatura: Experimental Techniques II: Spectroscopies

Fecha: 01/09/2011

Horas: 4

Tipo: Master

ANGEL ALEGRIA LOINAZ

Curso: Master Universitario en Nanociencia

Asignatura: Experimental Techniques II: Spectroscopies

Fecha: 01/09/2011

Horas: 15

Tipo: Master

ANGEL ALEGRIA LOINAZ

Curso: Master Universitario en Nanociencia

Asignatura: Experimental Techniques I: Structural Characterization

Fecha: 01/09/2011

Horas: 15

Tipo: Master

JUAN JOSÉ DEL VAL

Curso: Master Universitario en Nanociencia

Asignatura: Experimental Techniques I: Structural Characterization

Fecha: 01/09/2011

Horas: 15

Tipo: Master

JUAN JOSÉ DEL VAL

Curso: Grado en Química

Asignatura: Física

Fecha: 01/09/2011

Horas: 75

Tipo: Licenciatura / Grado

ISABEL TELLERIA ECHAVERRIA

Curso: Grado en Química

Asignatura: Física

Fecha: 01/09/2011

Horas: 135

Tipo: Licenciatura / Grado

JOSE MARIA PITARKE

Curso: Grado en Física

Asignatura: Física Cuántica

Fecha: 01/09/2011

Horas: 28

Tipo: Licenciatura / Grado

AITOR BERGARA JAUREGI

Curso: Grado en Física

Asignatura: Física Cuántica

Fecha: 01/09/2011

Horas: 98

Tipo: Licenciatura / Grado

NEREA ZABALA UNZALU

Curso: Master universitario en física y tecnología de materiales

Asignatura: Física de nano-estructuras

Fecha: 01/09/2011

Horas: 15

Tipo: Master

AITOR BERGARA JAUREGI

Curso: Grado en Física

Asignatura: Física Moderna

Fecha: 01/09/2011

Horas: 32

Tipo: Licenciatura / Grado

ANDRES AYUELA FERNANDEZ

Curso: Master Universitario en Nanociencia

Asignatura: From Nanoscience to Nanotechnology
Fecha: 01/09/2011
Horas: 15
Tipo: Master

CELIA ROGERO BLANCO
Curso: Master Universitario en Nanociencia
Asignatura: From Nanoscience to Nanotechnology
Fecha: 01/09/2011
Horas: 8
Tipo: Master

LUCIA VITALI
Curso: Master Universitario en Nanociencia
Asignatura: From Nanoscience to Nanotechnology
Fecha: 01/09/2011
Horas: 8
Tipo: Master

JOSEBA IÑAKI JUARISTI OLIDEN
Curso: Master Universitario en Nanociencia
Asignatura: Fundamentals of Nanoscale Characterization
Fecha: 01/09/2011
Horas: 15
Tipo: Master

ANDRÉS ARNAU PINO
Curso: Master Universitario en Nanociencia
Asignatura: Fundamentals of Nanoscale Characterization
Fecha: 01/09/2011
Horas: 15
Tipo: Master

MAITE ALDUCIN OCHOA
Curso: Master Universitario en Nanociencia
Asignatura: Fundamentals of Quantum Mechanics
Fecha: 01/09/2011
Horas: 15
Tipo: Master

ANDRÉS ARNAU PINO
Curso: Master Universitario en Nanociencia
Asignatura: Fundamentals of Quantum Mechanics
Fecha: 01/09/2011
Horas: 15
Tipo: Master

PEDRO MIGUEL ECHENIQUE LANDIRIBAR
Curso: Master Universitario en Nanociencia
Asignatura: Fundamentals of Solid State Physics
Fecha: 01/09/2011
Horas: 15
Tipo: Master

EUGENE CHULKOV
Curso: Master Universitario en Nanociencia

Asignatura: Fundamentals of Solid State Physics
Fecha: 01/09/2011
Horas: 15
Tipo: Master

JOAQUÍN FERNÁNDEZ RODRIGUEZ
Curso: Master en ingeniería de materiales avanzados
Asignatura: Fundamentos de Nano y Biofotónica
Fecha: 01/09/2011
Horas: 10
Tipo: Master

JOAQUÍN FERNÁNDEZ RODRIGUEZ
Curso: Ingeniería Técnica de Telecomunicación. Sistemas de Telecomunicación
Asignatura: Introducción a los Dispositivos Fotónicos
Fecha: 01/09/2011
Horas: 45
Tipo: Licenciatura / Grado

ALBERTO RIVACOBA
Curso: Licenciatura en Química
Asignatura: Introducción a los Fenómenos Cuánticos: Radiación y Materia
Fecha: 01/09/2011
Horas: 30
Tipo: Licenciatura / Grado

JOSEBA IÑAKI JUARISTI OLIDEN
Curso: Licenciatura en Química
Asignatura: Introducción a los Fenómenos Cuánticos: Radiación y Materia
Fecha: 01/09/2011
Horas: 30
Tipo: Licenciatura / Grado

JUAN JOSÉ DEL VAL
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Material Science
Fecha: 01/09/2011
Horas: 15
Tipo: Master

FERNANDO ALVAREZ GONZALEZ
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

ANGEL ALEGRIA LOINAZ
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

JUAN JOSÉ DEL VAL
Curso: Master Universitario en Nanociencia

Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

PEDRO MIGUEL ECHENIQUE LANDIRIBAR
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

JOSE MARIA PITARKE
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

ANDRÉS ARNAU PINO
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

ANGEL RUBIO SECADES
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

ALBERTO RIVACOBA
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

EUGENE CHULKOV
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

JOSEBA IÑAKI JUARISTI OLIDEN
Curso: Master Universitario en Nanociencia
Asignatura: Introduction to Scientific Research
Fecha: 01/09/2011
Horas: 8
Tipo: Master

JUAN COLMENERO DE LEON
Curso: Master Universitario en Nanociencia

Asignatura: Introduction to Scientific Research

Fecha: 01/09/2011

Horas: 8

Tipo: Master

NEREA ZABALA UNZALU

Curso: Master Universitario en Nanociencia

Asignatura: Low Dimensional Systems and Nanostructures

Fecha: 01/09/2011

Horas: 15

Tipo: Master

ANGEL RUBIO SECADES

Curso: Master Universitario en Nanociencia

Asignatura: Low Dimensional Systems and Nanostructures

Fecha: 01/09/2011

Horas: 15

Tipo: Master

JUAN MARIA ALBERDI GARITAONAINDIA

Curso: Grado en Química

Asignatura: Matemáticas I

Fecha: 01/09/2011

Horas: 75

Tipo: Licenciatura / Grado

FERNANDO ALVAREZ GONZALEZ

Curso: Grado en Química

Asignatura: Matemáticas II y estadística

Fecha: 01/09/2011

Horas: 75

Tipo: Licenciatura / Grado

ALBERTO RIVACOBA

Curso: Master Universitario en Nanociencia

Asignatura: Mathematical Methods for Nanoscience

Fecha: 01/09/2011

Horas: 15

Tipo: Master

FERNANDO ALVAREZ GONZALEZ

Curso: Master Universitario en Nanociencia

Asignatura: Mathematical Methods for Nanoscience

Fecha: 01/09/2011

Horas: 15

Tipo: Master

DANIEL SANCHEZ PORTAL

Curso: Master Universitario en Nanociencia

Asignatura: Modelling and Molecular Dynamics Simulations at the Nanoscale

Fecha: 01/09/2011

Horas: 15

Tipo: Master

FERNANDO ALVAREZ GONZALEZ

Curso: Master Universitario en Nanociencia

Asignatura: Modelling and Molecular Dynamics Simulations at the Nanoscale

Fecha: 01/09/2011

Horas: 15

Tipo: Master

JOSE MARIA PITARKE

Curso: Master universitario en Materiales nuevos

Asignatura: Nanomateriales y Nanotecnología

Fecha: 01/09/2011

Horas: 10

Tipo: Master

PEDRO MIGUEL ECHENIQUE LANDIRIBAR

Curso: Master Universitario en Nanociencia

Asignatura: Nanoscience: A Historical Perspective

Fecha: 01/09/2011

Horas: 15

Tipo: Master

RICARDO DIEZ MUIÑO

Curso: Master Universitario en Nanociencia

Asignatura: Nanoscience: A Historical Perspective

Fecha: 01/09/2011

Horas: 15

Tipo: Master

FRANCISCO JAVIER AIZPURUA IRIAZABAL

Curso: Master Universitario en Nanociencia

Asignatura: Nanostructural Properties

Fecha: 01/09/2011

Horas: 10

Tipo: Master

ANGEL RUBIO SECADES

Curso: Master Universitario en Nanociencia

Asignatura: Nanostructural Properties

Fecha: 01/09/2011

Horas: 10

Tipo: Master

ANDRES AYUELA FERNANDEZ

Curso: Master Universitario en Nanociencia

Asignatura: Nanostructural Properties

Fecha: 01/09/2011

Horas: 10

Tipo: Master

JOSE MARIA PITARKE

Curso: Master Universitario en Nanociencia

Asignatura: Nanotechnology-Oriented Research Activities

Fecha: 01/09/2011

Horas: 30

Tipo: Master

PEDRO MIGUEL ECHENIQUE LANDIRIBAR

Curso: Master en Gestión de la Innovación y del Conocimiento

Asignatura: Perspectivas de la Innovación y el Conocimiento

Fecha: 01/09/2011

Horas: 3

Tipo: Master

M.ARANZAZU ARBE MENDEZ

Curso: Master Universitario en Nanociencia

Asignatura: Soft matter and Nanostructures Materials

Fecha: 01/09/2011

Horas: 30

Tipo: Master

VI PROYECTOS

Código	Título	Com.	Fin	Cantidad	Entidad Financiadora
IE11-304 nanoIKER'11	NanoIKER'11-I+D en Nanociencia y Nanotecnología: Magnetismo, Polímeros, Fotónica, Cementos y Grafeno.	2011	2013	356.635,00	GV
MAT2010-21156-C03-03	Desarrollo y analisis de agregados nanoestructurados moleculares y magneticos para aplicaciones en celulas solares y de almacenamiento de datos	2011	2013	96.800,00	MICINN
FIS2010-19609-C02-02	Propiedades electronicas y reactividad de sistemas complejos	2011	2013	151.250,00	MICINN
FIS2010-19609-C02-01	Dinamica electrónica, transporte, plasmónica y microscopia electrónica	2011	2013	229,900,00	MICINN

Código	Título	Com.	Fin	Cantidad	Entidad Financiadora
	Nanoparticulas unimoleculares para industria tradicional y emergente.	2011	2012	61.000,00	Dip. Foral Gipuzkoa
img-X07111050	Development of semiconductor nanostructures based on quantum dots and metal nanoparticles for nanoscale optoelectronics and energy conversion devices. Start-Up (Ikerbasque)	2010	2012	90.000,00	GV
	Impulso de la investigación de ETSF European Theoretical Spectroscopy Facility y el afianzamiento de esta plataforma europea en la UNIVERSIDAD.	2010	2011	75.000,00	Ikerbasque
20090742-Goodyear	Bulk and surface chain dynamics under external constraints	2010	2012	137.600,00	Good-Year
MAT2009-14282-C02-2	Vitrocerámicos dopados con tierras raras para aplicaciones de ganancia óptica y láser.	2010	2012	121.000,00	MICINN
THEMA-CNT	Thermal management with carbon nanotube architectures	2010	2012	219.994,00	EU
	Start-Up (Ikerbasque)	2009	2012	250.000,00	GV
ACI2009-1036	DESARROLLO DE LA VICEPRESIDENCIA CIENTÍFICA DE LA EUROPEAN THEORETICAL SPECTROSCOPY FACILITY (ETSF)	2009	2011	108.000,00	MICINN
EUI2008-03816	Curcubiturils for hardwired optical and electronic self-assembly	2009	2012	195.000,00	EU
Nanoantenna - 241818	Development of a high sensitive and specific nanobiosensor based on surface enhanced vibrational spectroscopy dedicated to the in vitro proteins detection and disease diagnosis	2009	2012	279.891,50	EU
PITN-GA-2008-214627	DYNACOP	2009	2013	187.422,00	EU

Código	Título	Com.	Fin	Cantidad	Entidad Financiadora
MAT2008-05921/MAT	Estudio experimental de la propagación y emisión de luz en microestructuras dieléctricas desordenadas activas, amorfas y cristalinas excitadas mediante pulsos láser ultracortos	2008	2011	120.000,00	MEC
IT-436-07	Grupos de Investigación Consolidados / de Alto Rendimiento: "Polímeros y materiales no cristalinos"	2007	2012	363.433,52	GV(UPV/EHU)
MAT2007-63681	De los polímeros simples a los materiales complejos: Estructura y dinámica de sistemas poliméricos multicomponente, nanoestructurados y biológicos	2007	2012	764.720,00	MEC
IT-366-07	Grupos de Investigación Consolidados / de Alto Rendimiento. Desarrollo de métodos, aplicaciones y estudio de la estructura electrónica de sistemas pequeños	2007	2012	561.968,02	GV(UPV/EHU)
IT-319-07	Grupos de Investigación Consolidados / de Alto Rendimiento. Simulación de Nanoestructuras, Biomoléculas y sistemas complejos de interés tecnológico: técnicas espectroscópicas. ETSF en España	2007	2012	461.172,30	GV(UPV/EHU)
CSD2007-00013	Science and applications of ultrafast ultraintense lasers	2007	2011	300.000,00	MEC (Consolider)
IT-331-07	Grupos de Investigación Consolidados / de Alto Rendimiento.	2007	2012	388.453,00	GV(UPV/EHU)
IT-257-07	Grupos de Investigación: Laboratorio de Nanofísica	2007	2012	249.484,39	GV(UPV/EHU)
INFRA-2007-1.2.2 "ETSF" 211956	European Theoretical Spectroscopy Facility I3 Combination of Collaborative Project and Coordination and Support Action of the FP7 e-Infrastructure program	2008	2011	495.834,00	EU

