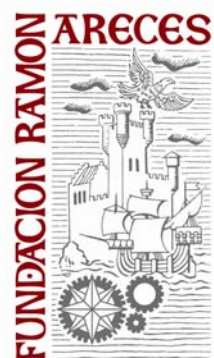


FUNDACIÓN RAMÓN ARECES

Simposio Internacional
**Plasmas y fusión nuclear: ciencia básica y desarrollo
tecnológico**

International Symposium
**Plasmas and fusion energy: Basic science and
technology**

Madrid, 11 y 12 de abril de 2011
Madrid, April 11-12, 2011



CURRÍCULUM VÍTAE / CV

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17. Carlos Hidalgo

Friedrich Wagner

Personal Details:

Name Wagner, Friedrich, Prof. Dr. rer.nat. habil.
Date and Place of Birth: 16.11.1943, Pfaffenhofen/Schw., Germany
Nationality: German
Present Position: Director Emeritus of the Max-Planck-Institut für Plasmaphysik
Professor Emeritus of the Ernst-Moritz-Arndt University,
Greifswald
Place of Work: Max-Planck-Institut für Plasmaphysik, 17489 Greifswald,
Germany
Coordinates: Tel. +49-3834-882001; fritz.wagner@ipp.mpg.de

Education and Training:

1964 - 1970 Study of physics, Techn. University, Munich; Dipl. Phys
1970 - 1972 PhD work, Techn. University, Munich; Dr. rer. nat.
1973 - 1974 Post-doc, Ohio State University, Ohio, USA
1988 Habilitation, Ruprecht-Karls-Universität Heidelberg

Scientific interests

High temperature plasma physics; magnetic confinement with tokamaks and stellarators; turbulence and transport in toroidal systems; the role of the electric field in toroidal confinement; plasma self-organisation.

Career:

1975 - Employed by Max-Planck-Institut für Plasmaphysik
1985 Assignment to a C3 position
1988 - Scientific Member of the Max-Planck Society
1993 - 2005 Member of the Board of Directors, IPP
1999 - 2007 Spokesperson of Branch-Institute of IPP in Greifswald
Nov. 2008 Retirement

Teaching

1988 - 1991 Teaching assignment, Ruprecht-Karls-Universität Heidelberg
1991 - 1993 Teaching assignment, Technical University, Munich
1993 - 1998 Honorary Professor, Technical University, Munich
1999 - Ordinary Professor, Ernst-Moritz-Arndt University, Greifswald

Project Management

1986 - 1990 Project Head of ASDEX tokamak
1990 - 1999 Project Head of Wendelstein 7-AS stellarator
2003 - 2005 Project Head of Wendelstein 7-X stellarator

Miscellaneous

1986 Guest scientist, Plasma Physics Laboratory, Princeton
1990 - 1998 Member of the JET- Scientific Council
1996 - 2004 Chairman of the Plasma Physics Division of EPS
1996 - 2007 Member of the editorial board of Plasma Physics and

Controlled Fusion

1999 - 2003 Member of the Research Council of the National Institute for Fusion
Studies
2003 - 2007 Member of the Project Advisory Committee of NCSX, Princeton

2003 - Member of the International Advisory Committee of ASIPP, Hefei,
China

2006 - 2007 President-elect of the European Physical Society; member of
the Executive Comm.

2006 - 2010 Member of the Intern. Advisory Panel of the Centre for Fusion,
Space and Astrophysics of the University of Warwick (UK)

2007 - Chairman of the Intern. Advisory Committee of the MAST project,
UKAEA, Culham (UK)

2007 - Member of the ITER Summer School Steering Committee

2007 - 2009 President/Vice-president of the European Physical Society

2008 Chairman of the international panel to evaluate the FOM-Institute for
Plasma Physics Rijnhuizen

- 2008 - Chairman of the External Advisory Board of FISICA-N; Portugal
- 2008 - Member of the International Advisory Board of the Journal: Plasma Physics and Controlled Fusion
- 2008 - Member of the Fusion Advisory Board (FAB) of the EPSRC (UK)
- 2009 - Member of the UK Expert Group: “Twenty Year Vision for UK Fusion as an Energy Source”.
- 2009 Chairman of the F4E Ad-Hoc Group for the evaluation of an ECRH-dominated heating mix for ITER
- 2010 Visiting professor at the Kyushu University, Fukoka, Japan.
- 2010 - Member of the Science Advisory Committee of the National Fusion Research Institute, Korea.
- 2010 - Representative of the Korean NFRI in the Board of the KRCF

Honours

- APS plasma physics award for Excellence in Plasma Physics Research (1987)
- Fellow of the American Physical Society (1990)
- Honorary Member of the IOFFE Institute, St. Petersburg (1997)
- Fellow of the Institute of Physics (1999)
- Hannes-Alfvén Prize of the European Physical Society (2007)
- Stern-Gerlach Medal of the German Physical Society (2009)
- Honorary Doctorate of the Belgian Royal-Military Academy (2009)

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Cayetano López

Born in Madrid (Spain) in 1946.

- Professor of Theoretical Physics at the Universidad Autónoma de Madrid.
- His scientific research fields are High Energy Physics and Nuclear Transmutation. He has developed his research activities mainly in Madrid, Paris and CERN (Geneva).
- He has published numerous papers on Elementary Particles Physics, including Rigorous Properties, Phenomenology, Unified Theories and Supersymmetry, and on Accelerator Driven Systems for Nuclear Waste Treatment and Energy Production. He has lead several research projects in those topics supported by national and international agencies.
- He is also the author of many articles in newspapers and magazines about science, scientific policy, higher education, information technologies and energy. He has published several books, some of them adressed to a general audience, in particular *El Ogro Rehabilitado*, 1995, and *Universo sin Fin*, 1999 and a textbook, *Física de los Procesos Biológicos*, 2004 (con F. Cussó y R. Villar).
- He has been the Rector of the Universidad Autónoma de Madrid, from 1985 to 1994. Member of the Council of CERN (European Laboratory of Particle Physics) from 1983 to 1995 and Vice-president of this organism from 1987 to 1990.
- Doctor Honoris Causa by the University of Buenos Aires.
- At present, he is the Director General of CIEMAT (Research Center in Energy, Environment and Technology).

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Osamu Motojima

Personal Details:

Date of Birth December 5th, 1948

Place of Birth Kyoto, Japan

Specialized field Nuclear Fusion, Plasma Physics, Fusion Engineering and technology,

SC development, Energy and Environment

Title Director General, International Fusion Energy Organization

Academic Background:

1971 Graduated from Kyoto University, Physics, Faculty of Science

1973 Graduated from Kyoto University, Master Course, Physics

1976 Graduated from Kyoto University, Doctor Course, Electrical Engineering, Ph. D

Professional Career:

1976-1980 Research Associate, Kyoto University, Plasma Physics Laboratory

1980-1987 Associate Professor, Kyoto University, Plasma Physics Laboratory

1987-1989 Professor, Kyoto University, Plasma Physics Laboratory

1988-1989 Professor, Nagoya University, Institute of Plasma Physics

1989-2003 Professor, National Institute for Fusion Science

1989-1999 Director, Research Operations Division

1989-1990 Director, Device Engineering Division

1992-2009 Professor, The Graduate University for Advanced Studies

1998-2002 Head, Large Helical Device Experiment Group

1998-2004 Scientific Advisor, Ministry of Education, Science and Culture

1999-2003 Director, Department of the Large Helical Device

2002-2003 Director, Device Engineering Division

2003-2009 Director-General, National Institute for Fusion Science

2004-2009 Executive Director, National Institutes of Natural Sciences,

2004-2009 Executive Board Member, National Institutes of Natural Sciences

2007-2010 Member, ITER Council

2009- Emeritus Professor, Advisor, Ferro, National Institute for Fusion Science

2009- Foreign Member, The Royal Swedish Academy of Engineering Sciences

2009- President, Future Energy Research Association

2009- President, The Japan Society of Plasma Science and Nuclear Fusion Research

2010- Director General, International Fusion Energy Organization

Additional Affiliations:

1991-2009 Key-Person, Fusion Tech. Division of US-Japan Science and Tech. Coop. Prog.

1993- Representative of Japan, Executive Committee of IEA Stellarator Agreement

1999-2003 Chair, Research Committee for Collaboration, National Inst. for Fusion Science
1999-2001 Member, Technical Committee, the Atomic Energy Commission of Japan
2001-2006 Editor, Fusion Engineering and Design
2002-2003 Member, Preparatory Committee for Natural Science Organization
2003-2009 Representative of Japan, Japan-China Core Univ. Collaboration Program Fusion
2003-2009 Member of Council, Research Institute for Applied Mechanics, Kyushu Univ.
2003-2004 Member Council, Okazaki National Research Inst., Inst. for Molecular Science
2003-2010 Expert Member, Atomic Energy Commission
2004-2009 Director, Department of Fusion Science, School of Physical Sciences, Graduate University for Advanced Studies
2004-2009 Technical Coordinator, Japan-Korea Research Collaboration Program in Fusion
2006- Member of Science Council of Japan
2006- Chairman, IEA Stellarator Executive Committee
2009-2010 Chair, Working Group on Fusion Research, Council for Science and Technology
2009-2010 Chair "Energy, and Science and Technology", Science Council of Japan

Received Awards

October, 1994, Research Paper Prize,
"The Dielectric Breakdown Property and the Forerunning Phenomenon of Pressurized Superfluid Helium," The Institute of Electrical Engineers of Japan.

November, 1997 Technical Progress Prize
"Experiments on a Single Inner Vertical Coil (EXSIV) for the Large Helical Device,"
The Japan Society of Plasma Science and Nuclear Fusion Research.

May, 200, Superconductivity Science and Technology Prize
"A Research and Development of the Superconducting Magnet System for the Large Helical Device as a Steady-state Fusion Plasma Experimental Device,"
The Society of Non-Traditional Technology.

June, 2002, Alfven Award
"Frontiers in Fusion Research from the Japanese Perspective,"
Alfven Laboratory, Royal Institute for Technology, Sweden.

December, 2004, 38th SDA Prize
Japan Sign Design Association Award Contest

April, 2006, Prizes for Science and Technology,
“Proof of Principle Experiments on High Temperature Steady State Plasmas by the Large Helical Device” The Minister of Education, Culture, Sports, Science and Technology

December, 2008, Distinguished Career Award 2008
“Dedication to Advancing the Prospects of Fusion Power” Fusion Power Associates, United States

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Carlos Alejandre Losilla

Director General Adjunto. Organización ITER. Cadarache. Francia (2006-)

Director General de Política Tecnológica. Ministerio de Educación y Ciencia (2004-2006)

Asesor Científico del “United Kingdom Engineering and Research Council Fusion Advisory Board” (2004-).

Asesor Científico del Instituto Max-Planck de Física de Plasma de Munich (2002-2008)

Vicepresidente del “European Strategic Forum Research Infrastructures” (2006)

Director del Laboratorio Nacional de Fusión por Confinamiento Magnético (CIEMAT) donde se construyó y se realiza la explotación científico-tecnológica de la “Gran Instalación” de fusión TJ-II. (Desde su creación-2004)

Director del Proyecto ITER-Spain .

Presidente del Comité Asesor Europeo de Ciencia y Tecnología de Fusión (1999-2004).

Miembro de la Delegación Europea de negociación internacional para ITER.

Miembro del “International Fusion Research Council” (IAEA).

Representante Español en el “Consultative Committee for the Fusion Program” del VI Programa Marco de la Unión Europea (1990-2006).

Presidente del “Executive Committee for the Implementing Agreement for the Stellarator Concept” de la Agencia Internacional de la Energía (2002-2006).

Miembro del “JET Scientific Council” (1996-hasta su disolución)

Miembro del Consejo (Board) de la “Plasma Physics Division” de la “European Physical Society” (1994-2000)

Presidente del “JET-EP Ad-Hoc Group”, miembro Europeo del “ITER Review Board (Physics)” y miembro de equipos de evaluación de los más importantes proyectos de fusión Europeos: “Joint Working Group”, Wendelstein 7–X, Textor ED, etc.

Licenciado en Ciencias Físicas por la Universidad de Zaragoza

Doctor en Ciencias Físicas por el “Polytechnic Institute of New York” donde trabajó como Profesor hasta su regreso a España, tras ocho años de estancia en Nueva York.

Ha publicado numerosos trabajos de investigación y divulgación en las revistas internacionales más prestigiosas e impartido conferencias sobre fusión en todo el mundo. Ha trabajado en diversos organismos de investigación extranjeros, tanto en Universidades como en Centros de Investigación Aplicada: Instituto Politécnico de Nueva York, Oak Ridge National Laboratory, Courant Institute for Mathematical Sciences de la Universidad de Nueva York, Max Planck Institute Munich, Aeroflex Laboratories, etc.

Condecorado con la Encomienda de la Orden de Isabel la Católica y la Encomienda con Placa de la Orden Civil de Alfonso X el Sabio

Natural de Zaragoza (1952).

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Tomás Díaz de la Rubia

Tomás Díaz de la Rubia is the Deputy Director for Science and Technology at Lawrence Livermore National Laboratory. In this capacity, he is the senior executive of the Laboratory responsible for the quality and strategic direction of the enabling science and technology portfolio of activities and leads the Laboratory-wide strategic planning related to these activities. The Science and Technology organizations at LLNL comprise a multidisciplinary staff of over 3300 people encompassing all major scientific fields including chemistry, physics, biology, geoscience, applied mathematics and computing, materials science, and the engineering disciplines. In his capacity as Deputy Director, he oversees a \$150M portfolio of internally funded R&D activities aimed at positioning the Laboratory at the forefront of science, technology and engineering to support existing activities and enable future missions. In addition, he is also responsible for a portfolio that includes approximately \$140M of government and privately funded fundamental science and applied engineering activities. As deputy director for science and technology he is responsible for the recruitment, retention and the overall quality of the scientific personnel, and interacts broadly with the scientific and technical community. As a senior executive of the Lawrence Livermore National Security, LLC, he represents the Laboratory on these areas in Washington, DC at all relevant government agencies and with the Congress.

The focus of his scientific work has been on the development of multiscale models of materials properties and performance in extreme environments and the application of these models, on High Performance Computing platforms, to the development of advanced materials for energy and other applications. Prior to becoming the Deputy Director for Science and Technology in 2010, he was the Associate Director for Chemistry and Materials Science from 2002 to 2007, the Associate Director for Chemistry, Materials, Earth and Life Sciences from 2008 to 2009 and the Laboratory Chief Research and Development Officer from 2009 to 2010. He has published more than 150 peer-reviewed articles in the scientific literature and has co-edited several books.

He belongs to the editorial board of five major scientific journals and continues to serve in numerous national and international panels. He was elected a fellow of the American Physical Society in 2002, and a fellow of the American Association for the Advancement of Science in 2007. He was elected a member of the Board of Directors of the Materials Research Society and served between 2002 and 2005. He was also the Vice Chair (chair elect) of the Division of Computational Physics of the APS in 2008. Díaz de la Rubia received his B.S. (summa cum laude) in physics in 1984 and his Ph.D. also in physics in 1989 from the State University of New York where he received the presidential award for academic research after completing his Ph.D. research at the University of Illinois at Urbana-Champaign and Argonne National Laboratory.

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Serge Paidassi

He is currently advising the Director of Energy Research and Innovation, for the EU Fusion Programme in the European Commission.

He entered the Ecole Normale Supérieure in 1971, studying physical chemistry and becoming Professor of Chemistry in 1974. He was then awarded a PhD in materials science from Grenoble University in 1979. In 1981 he joined the French Atomic Energy Commission to lead research activities on materials science and engineering until 1996.

He joined the European Commission in 1996 to be involved in the European Fusion Programme. He has been Head of the "ITER" Unit in Directorate General Research and Innovation from 2007 until 2010.

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Francesco Romanelli

Francesco Romanelli is the Leader of the Joint European Torus the largest magnetic fusion experiment in the world. The JET exploitation is carried out within the European Fusion Development Agreement (EFDA). Since 2010 he is also EFDA Leader, in charge of the coordination of physics and technology activities in the European fusion laboratories. He has directed the activities in Physics of Magnetic Confinement Fusion at ENEA Frascati from 1996 to 2006, mostly related with the exploitation of the Frascati Tokamak Upgrade experiment, the theory activities and the participation to JET. From 2003 to 2006 he has been Chairman of the Science and Technology Advisory Committee of EFDA. His main area of scientific activity has been the theoretical investigation of small-scale plasma turbulence.

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Alfonso Tarancón Lafita

Doctor en Ciencias Físicas, Catedrático de Física Teórica en la Universidad de Zaragoza y del Instituto de Bio-computación y Física de sistemas Complejos (BIFI).

Sus primeras investigaciones fueron en el área de la Física de Altas Energías en el estudio de la Teoría que describe con precisión las interacciones entre partículas elementales (QCD). Tras varias estancias en centros internacionales, de vuelta en España, junto a investigadores de Zaragoza, Madrid y Extremadura, ha formado parte de un grupo especializado en el estudio de sistemas complejos, sistemas magnéticos, simulaciones de Monte Carlo, y otros temas relacionados. Las necesidades de cálculo de este grupo no podían ser cubiertas solamente por ordenadores comerciales, de modo que comenzaron a desarrollar ordenadores dedicados: máquinas que solo pueden trabajar en un conjunto de problemas reducidos, pero que en ese conjunto pueden alcanzar velocidades miles de veces superiores a los convencionales.

Ha participado en la creación y desarrollo del BIFI, Instituto multidisciplinar donde investigadores de diferentes áreas aúnan sus esfuerzos en aras de una mayor eficiencia. Dentro del BIFI ha creado un grupo especializado en Supercomputación, Computación Distribuida y Computación Voluntaria. Dirige el nodo de la Red Española de Supercomputación en Aragón, los proyectos PirGRID y AraGRID de computación distribuida en GRID. Es director del proyecto IBERCIVIS, una plataforma de cálculo compuesta por miles de ordenadores de ciudadanos conectados a través de Internet y donde más de 10 grupos de investigación de todo el mundo ejecutan sus aplicaciones.

También ha puesto en marcha diferentes proyectos de transferencia de tecnología: Sistema de corte de Ferralla para Obra Civil y Pública, Optimización de Sistemas de Regadío Controlados por Internet o un Sistema de Optimización para Fotolitos de Caucho.

El trabajo científico de Alfonso Tarancón ha llevado a la publicación de más de 150 artículos científicos en revistas internacionales, dirección de 10 Tesis doctorales más de 40 proyectos como Investigador Principal en Investigación Básica, Desarrollo Tecnológico, Difusión y Divulgación de la Ciencia.

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Fernando Moreno-Insertis

CURRENT POSITION: Full Professor of Astrophysics at University of La Laguna (Tenerife, Spain) and Associate Senior Research Scientist at Instituto de Astrofísica de Canarias (Tenerife)

DOCTORATE: Max-Planck-Institut für Astrophysik (Munich, Germany).

DOCTOR DEGREE: University of Munich, March 1984.

RESEARCH FIELDS: Theoretical and Computational Astrophysics, Fluid Dynamics and Plasma physics, Solar Physics

MANAGEMENT OF EUROPEAN PROJECTS:

- General Coordinator of the SOLAIRE European Network, financed by the European Commission (June 2007-May 2011), with 13 participating institutions and about 170 researchers.
- Team leader at the IAC of the European Research Training Network PLATON, financed by the European Commission (4 years)

OTHER MANAGEMENT and ADVISORY POSITIONS held in the past:

- Member of the Board of Directors of the scientific journal Astronomy & Astrophysics (12 years)
- Scientific Advisory Committee of the Kiepenheuer-Institut, Freiburg (8 years)
- Director of the Department of Astrophysics at University of La Laguna (2 years)
- Head of the Postgraduate Studies Division of the Instituto de Astrofísica de Canarias (2 years)
- Member of the Director's Board at the Instituto de Astrofísica de Canarias (2 years)
- Member of the Board of the Opticon Consortium (1 year)
- Steering Committee of the Spanish Astronomical Society (4 years)
- Commission of the International Union for Pure and Applied Physics (4 years)
- Commission of the International Astronomical Union

PUBLICATIONS: more than 100 scientific publications (40 of them as first author), with 1800 citations.

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Ana Inés Gómez de Castro

Doctora en CC Físicas (Astrofísica) por la UCM en 1989, se incorporó al cuerpo docente de la UCM en 1994 como Profesora titular (actualmente acreditada a Cátedra) de la Facultad de Ciencias Matemáticas, en la Sección Departamental de Astronomía y Geodesia del Departamento de Física de la Tierra, Astronomía y Astrofísica I.

Sus líneas de investigación son la astrofísica ultravioleta y el estudio de la formación estelar: desde la formación y evolución temprana de estrellas de tipo solar a los motores gravitacionales de plasma y la generación de chorros de gas de alta velocidad. Su trabajo en astrofísica ultravioleta y espacial incluye la dirección de campañas de observación con el telescopio espacial Hubble, el XMM-Newton y el IUE y técnicas de minería de datos para el análisis masivo de bases de datos astronómicos. Ha publicado más de 120 trabajos en revistas de investigación y ha editado/publicado 8 libros sobre astronomía ultravioleta y la física de la formación estelar.

Como docente, participa en diversos máster de la Universidad Complutense, Autónoma y Carlos III de Madrid y ha participado en cursos del programa ERASMUS sobre "Supercomputación en astrofísica". Colabora con la Universidad de Leicester (Reino Unido) para la creación de un Centro de Excelencia para la formación de jóvenes investigadores en ciencias del espacio, planetarias y astrofísicas. Como educadora lidera en España el proyecto educativo *HANDS-On Universe* (www.houspain.com/) para implementar el uso de la nuevas tecnologías / metodologías para la educación científica en ESO y Bachillerato y el Galileo Teacher Training Program, programa europeo de formación de profesores.

Como divulgadora científica es autora de numerosas publicaciones sobre astrofísica, formación de estrellas, plasmas, etc. y participa activamente en el blog *Cosmic Diary* (www.cosmicdiary.org/). Es además autora de diversas aplicaciones educativas accesibles en Internet: talleres, ejercicios, basados en las matemáticas y en la Astronomía y dirigidas a estudiantes de Secundaria y Bachillerato.

Como investigadora y en el campo de la Astrofísica, es coordinadora y responsable en España de la red europea NUVA (Network for Ultraviolet Astronomy. www.ucm.es/info/nuva/). Entre los proyectos de investigación de los que es o ha sido investigadora principal, figuran proyectos nacionales e internacionales relacionados con Archivos Astronómicos, sistemas inteligentes de búsqueda y operación, Física de Plasmas y Formación del Sistema Solar. La participación en algunos de estos proyectos incluye la gestión de diversos contratos con la Industria Aeroespacial. Es miembro de diversos Comités Nacionales e Internacionales de Astronomía de Astrofísica y Educación.

Actualmente y desde 2002, es la responsable científica de la participación española en la construcción del Telescopio Espacial Ultravioleta WSO-UV (World

Space Observatory Ultraviolet). La misión WSO-UV es un proyecto internacional liderado por la Agencia Espacial Rusa, ROSCOSMOS, y con participación de España, Alemania, Ucrania y China. El telescopio cubrirá el espacio dejado por el Hubble al final de su misión, convirtiéndose en el único observatorio astronómico ultravioleta del planeta durante su vida útil. Los dos observatorios del telescopio espacial estarán situados, uno en la Universidad Complutense de Madrid bajo la responsabilidad científica de la Profesora Gómez de Castro y otro en el Instituto de Astronomía de la Academia de Ciencias Rusa.

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Volker Naulin

Dr. Volker Naulin studied theoretical physics at Heinrich Heine University in Düsseldorf, and was awarded his PhD in theoretical physics in 1995. In 1996 he went to work at Risø National Laboratories in Denmark under a Marie Curie Fellowship and was made Senior Scientist there two years later. He has been teaching at Universities Kiel, Innsbruck, Nancy, Düsseldorf, and Danish Technical University. Under the Sino Danish agreement for graduate education he is responsible for educational activities in the subject Fusion Energy.

While his work focuses on plasma turbulence and transport using numerical simulations in 2003 he became deputy and later leader of the EFDA JET Taskforce Transport responsible for the JET experimental program. At present he is deputy chair of the European topical group Transport. Dr Naulin is reviewer for several funding bodies and member of the scientific committees of several international conferences. Dr. Naulin is author/co-author of more than 80 papers in peer reviewed international journals.

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Raúl Sánchez Fernández

Personal Data

Name: Sánchez Fernández, Luis Raúl D.O.B.: 10/30/1969 Nationality: Spanish
University: U. Carlos III de Madrid Department: Physics Position: Full Professor
Postal address: Avda. de la Universidad 30, 28911, Leganés, Madrid, SPAIN
Phone: +34 91 6248735 Fax: +34 91 6248749 e-mail: raul.sanchez@uc3m.es

Academic & Previous Research Career information

B.Sc. (1992) and Ph.D. (1997) in Physics from Universidad Complutense de Madrid. Summer Student at C.E.R.N. (Geneva, Switzerland) in 1992. Physics Assistant (1993-2003) and Associate (2003-2010) Professor at Universidad Carlos III de Madrid (UC3M). Post-doctoral researcher (1998-99) at the Fusion Energy Division of Oak Ridge Natl. Lab. (ORNL, TN, USA). Staff (2006-08) and Senior Staff Member (2008-10) at Fusion Energy Division, ORNL (TN, USA). Affiliate Associate Profesor, Physics Department, University of Alaska, Fairbanks, AK, USA (04/06)

Topics of research

Plasma Physics. Thermonuclear fusion. Magnetohydrodynamics. Turbulence. Gyro-kinetics. Plasma Simulation. Runaway electrons. Fractional kinetics. Complex Systems.

Publication record

Author of 83 peer-reviewed publications (78 in Science Citation Index journals). Three (3) key publications:

1. Sánchez R, Newman DE, Carreras BA, "On the waiting-time statistics of Self-Organized Critical systems", Physical Review Letters 88, 068302 (2002)
2. Sánchez R, van Milligen BP, Newman DE, Carreras BA, "Quiet-time statistics of edge turbulent fluxes in the JET tokamak and the W7-AS and TJ-II stellarators", Physical Review Letters 90, 185005 (2003)
3. Sánchez R, Newman DE, Leboeuf JN, Carreras BA, Decyk VK, "Nature of transport across sheared zonal flows in gyro-kinetic ITG tokamak turbulence", Physical Review Letters 101, 205002 (2008)

Awards

2001 Best Scient. Research by a Group UT-BATTELLE Award, awarded by ORNL (USA)
2007 Significant Achievement Award, awarded by Oak Ridge Natl. Lab. (TN, USA)
2007 Outstanding Mentor Award, awarded by Department of Energy (USA)
2009 "Miguel Catalán" Award, awarded by Govt. of Madrid Region, SPAIN.
2010 Excellence Award, awarded by the Universidad Carlos III de Madrid, SPAIN.

Committees

Member of Executive Committee of US Task Transport Force (2008 – 2011);

Member of Advisory Committee of the Center of Complex System Studies at University of Alaska (2006–); Program Committee Member of Eur. Phys. Soc. (2010) and Amer. Phys. Soc. (2011) Annual Meetings; Serve in Seed Money Fund Proposal Review Committee at ORNL (2006-2007); Reviewer of grants and proposals for US-Department of Energy (2006–), Spanish ANEP (2003 –) and Argentinian FONCyT (2007–)

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Joaquín Sánchez

Joined CIEMAT in 1986, after obtaining the PhD in Physics at the “Universidad Complutense”. Fusion career developed as CIEMAT visiting scientist at the Max Planck IPP (Garching, Germany) during 1987-89. Between 1989 and 2004 served as Head of Plasma Diagnostics, in charge of CIEMAT Diagnostics projects and coordinator of collaborative projects at ORNL (US), Princeton University (US), MIT (US) and NIFS (Japan). In January 2000 appointed as Task Force Leader for Diagnostics at JET, world largest Fusion experiment. Since June 2004, Director at the “Laboratorio Nacional de Fusión”, CIEMAT.

J. Sánchez is vice chairman of the European Fusion Committee CCE-FU, member of the Spanish delegation to the joint undertaking for ITER “Fusion for Energy” and chairman of the strategic discussion group “Group of Chairpersons” within the EU Fusion Programme. He is also the Coordinator of a Fusion Technology Programme within the Spanish programme of excellence “CONSOLIDER” and chairman of the Spanish “Fusion Technology Platform”.

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Uwe Reinhard Czarnetzki

Personal Data

name: Prof. Dr. Uwe Reinhard Czarnetzki

date of birth: 21.01.1959, Recklinghausen / Germany

Present position: Institute for Plasma and Atomic Physics, Faculty for Physics and Astronomy, Ruhr-University Bochum, Germany

family status: married, two children

citizenship: German

Career

since 08 dean of the Faculty for Physics and Astronomy of the Ruhr-University Bochum

06 - 08 chair of the Intern. Center of Excellence in Plasma Science and Technology Network

since 05 member of the Scientific Advisory Board of the Institute for Low-Temperature Plasma Physics (INP) in Greifswald

05 - 09 deputy speaker of the DFG research training group 1051

since 04 member of the editorial boards of Journal of Physics D: Applied Physics (section editor since 2008) and Japanese Journal of Applied Physics,

04 – 06 managing director of the Institute for Experimental Physics at the Faculty for Physics and Astronomy, Ruhr-University Bochum

since 01 full professor for physics at the Ruhr-University Bochum

99 - 01 assistant professor for physics at the University of Essen

95 - 03 chairman of the German JSPS-Fellow Alumni Association

93 - 99 research associate at the University of Essen

92 - 93 JSPS/Humboldt postdoc fellowship at Kyushu University, Fukuoka/Japan

86 - 92 research associate at the University of Essen

Education

93 – 99 habilitation in experimental physics at the University of Essen

86 – 91 PhD in experimental physics at the University of Essen

79 – 85 studies and diploma in physics at the University of Essen

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Carmen García-Rosales

Dr. Carmen García-Rosales is Senior Researcher in the Materials Department of CEIT and Professor of Solid State Physics at the School of Engineering (Tecnun) of the University of Navarra.

She obtained her degree (1987) in Physics at the University of Münster, Germany, and her PhD (1991) in Physics at the Technical University Aachen (RWTH), Germany, after spending three years with a doctoral grant at the Institute for Reactor Materials of the Research Centre Jülich, Germany. She moved to the Max-Planck-Institute for Plasma Physics in Garching, Germany, for a two years post-doctoral position at the Plasma-Wall-Interaction Division. Afterwards she spent two and a half years as staff scientist at the fusion experiment ASDEX-Upgrade of the Max-Planck-Institute for Plasma Physics in Garching, Germany, working in the field of plasma-wall interaction processes and materials selection for the first wall of the tokamak ASDEX-Upgrade. 1995 she joined CEIT and the School of Engineering of the University of Navarra in Spain, where she has been conducting research mainly on the development of materials for nuclear fusion application, especially of doped carbon-based materials, tungsten alloys and SiC-based materials, using mainly powder metallurgical routes.

She has supervised eleven projects, most of them international collaborative projects, and has participated in about ten other projects. She is author or co-author of more than 130 scientific papers and communications in conferences, more than 70 of them in international refereed journals.

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Francisco J. Gordillo Vázquez

Francisco J. Gordillo Vázquez es doctor en Ciencias Físicas por la Universidad de Sevilla (1995) y Científico Titular del Consejo Superior de Investigaciones Científicas (CSIC) desde 2004. Realizó su tesis doctoral en física atómica y molecular de plasmas de baja temperatura entre la Universidad de Sevilla, el Centro de Física de Plasmas y sus Aplicaciones de Toulouse (CNRS) en Francia, ahora llamado LAPLACE, así como en el Departamento de Ingeniería Mecánica y Aeroespacial de la Universidad del Sur de California (USC) en Los Ángeles

(EE.UU.). Entre 1995 y finales de 1997 realizó una estancia postdoctoral en el Departamento de Ingeniería Mecánica y Aeroespacial (USC) donde profundizó en estudios sobre la físico-química de plasmas moleculares de aire de interés en diferentes aplicaciones científico-tecnológicas. Posteriormente ha realizado diversas estancias en, entre otros, el Center for Plasma Science and Technology de la Universidad del Ruhr en Bochum (Alemania) en 2005 y 2006.

A comienzos de 1998 regresa a España y se incorpora al Instituto de Ciencia de Materiales de Madrid (ICMM) del CSIC donde trabaja hasta finales del año 2000 en proyectos relacionados con la síntesis y procesado de materiales mediante plasmas fríos. Durante este período fue el responsable de realizar tareas de modelización y diagnóstico de plasmas de hidrocarburos (principalmente metano y acetileno) utilizados para la síntesis y procesado de láminas delgadas de materiales basados en carbono. Por estas investigaciones sobre plasmas de hidrocarburos, de interés para la síntesis de materiales nanoestructurados de carbono, recibió el Premio Ayuda a la investigación 2007 de la Fundación Domingo Martínez. A finales del año 2000, se traslada al Instituto de Óptica del CSIC en Madrid donde, entre 2001 y 2006, trabaja en el desarrollo de modelos cinéticos así como en diagnóstico mediante técnicas espectroscópicas y de imagen de plasmas fríos generados durante la interacción de láseres pulsados con materiales dieléctricos con el objetivo de obtener capas delgadas de materiales con aplicaciones en fotónica y óptica integrada. A partir de 2007 comienza una nueva línea de trabajo centrada en el estudio de la físico-química y electrodinámica de plasmas de aire que tienen lugar en la alta atmósfera terrestre como consecuencia de la actividad de los Fenómenos Luminosos Transitorios cuya presencia en la mesosfera terrestre fue descubierta en 1990. A finales de 2008 se traslada al Instituto de Astrofísica de Andalucía (IAA) del CSIC en Granada donde actualmente lidera el grupo de Plasmas Transitorios en Atmósferas Planetarias.

Ha participado en 25 proyectos de investigación desde 1993, habiendo sido Investigador Principal (IP) en 10 de ellos financiados por agencias regionales (Proyectos Comunidad de Madrid, Proyectos de Excelencia de la Junta de Andalucía), nacionales (Plan Nacional), europeas (ESF) e internacionales (EOARD-AFOSR). Ha impartido charlas invitadas en congresos internacionales tanto en el ámbito de la físico-química y tecnología de plasmas fríos (EUROCV, SAPP, ICPIG) como en el de la geofísica en relación con plasmas en atmósferas planetarias (Conferencias CHAPMAN de la American Geophysical Union (AGU) y AGU Fall Meeting en EE.UU.). Ha participado en Comités Científicos de congresos internacionales en el ámbito de la físico-química y tecnología de plasmas fríos (EUROCV, ESCAMPIG, EPS - Plasma Conference). En 2008 organizó en Granada la "European Sectional Conference on Atomic and Molecular Physics of Ionized Gases" (ESCAMPIG), siendo la primera vez que ESCAMPIG se organizaba en España. Es autor de más de 45 artículos de investigación en revistas especializadas y de más de 10 artículos de divulgación.

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Carlos Hidalgo

Carlos, born in Madrid in 1956, received his PhD degree from the Madrid Complutense University in 1984 with his work on structural defects in solids and positron annihilation spectroscopy. His next area of research was related to plasma turbulence, transport and diagnostics where he is currently leading the Experimental Plasma Physics Division at CIEMAT (Centro Nacional de Investigaciones Mediambientales y Tecnológicas).

He has worked in different international laboratories, initially as a PhD student (Technical University of Denmark, Nuclear Research Centre of Grenoble, Technical University of Helsinki) and later as a visiting scientist (Fusion Centre at the University of Austin, Oak Ridge National Laboratory, JET, Max Planck Institute, National Institute Fusion Studies). Teaching experience, including his present involvement at the Plasma Physics and Nuclear Fusion Master, complements his research activity.

He has been leading different international research teams including the European Transport Task Force on Turbulence between 1994 and 2000 and the European Transport Topical Group between 2008 and 2010. At present he is leading the Plasma Physics Division of the European Physical Society since 2008 and the Plasma Physics Group under the Real Sociedad Española de Física (RSEF) since 2010.

He is author of more than 150 peer-reviewed publications on solid-state physics, plasma physics, magnetic fusion confinement in tokamaks and stellarators, plasma diagnostics and turbulence.

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