

Brief CV



Personal Information

Family name, First name: Platero Gloria

Married, one daughter

Date of birth: 09/02 /1956

Nationality: Spanish

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Education

1984 PhD in Physics, Faculty of Physics, Condensed Matter Theory, UAM, Madrid

1979 Master degree in Physics, UAM, Madrid

Current Position

2005–present Research Professor Material Science Institute of Madrid ICMM-CSIC, Spain

Previous Positions

1990-2005 Scientific Researcher at the ICMM (CSIC)

1994-1996 Director of the Condensed Matter Theory Department at the ICMM

1990-1995 Honorary Professor at the UAM (Universidad Autónoma Madrid)

1987-1990 Staff Researcher at the ICMM (CSIC)

Fellowships

1987 MPI Postdoctoral contract at MPI, Grenoble (France)

1985-1986 Postdoctoral Fellowship from NATO at MPI, Grenoble (France)

1984 Grant from the project DAJA 45-84-M-0378, USA army, at UAM

1980-1983 Pre-doctoral Fellowship from the Spanish Ministry, UAM PhD

1979 Pre-graduate Fellowship from the Spanish Ministry, Bachelor Thesis, UAM

Summary of publications

Around 190 publications in international journals JRC (72 in the last 10 years) with over 5330 cites and $h=39$ (Google scholar). From them 17 PRL, 1 Nature Nanotech, 1 Science Advances, 77 PRB (9 Rapid Comm.).

One Review: “Photo-assisted Transport in Nanostructures”, G. Platero and R. Aguado, Physics Reports, 395, 1-157 (2004), IF: 14,826, with more than 480 cites (google scholar).

More than 40 publications in conference proceedings and book chapters (9 in the last 10 years).

Editor of two books.

Distinctions

2017–2021 Mercator Fellow, CRC 1277: “Emergent Relativistic Effects in Condensed Matter, From Fundamental Aspects to Electronic Functionality”, Regensburg.

2017-present, Elected member of the IUPAP, C8 committee “Semiconductor Physics”.

2017-2018- Distinction from the CSIC (Spanish Research Council) for the scientific merits.

Mentoring (last 10 years)

Supervision of eight postdoctoral researchers: J. Villavicencio 2009-2010; M. Prada 2010-2011; M. Lunde 2009-2012; R. Sánchez 2012-2015; J. Huneke, ITN contract 2012/2013; Y. Ban 2017-2019; A. Gómez-León 2017-August 2020; M. Bello, January-September 2020.

Supervision of 13 PhD Students, 8 from 2010: Carlos López: "Spin dependent transport through quantum dots", cum Laude, UAM, 2011; Irene Maldonado: "Nano-electromechanical systems under the action of oscillating electric fields", co-advised with Prof. E. Cota, UNAM (Mexico), 2011; Maria Busl: "Nanoscale Systems Driven by Magnetic and Electric AC Fields", cum Laude, 2012. Award to the best theoretical PhD work 2012, Condensed Matter Division Spanish Royal Society; Fernando Domínguez: "Decoherence phenomena in quantum dot arrays and fractional Josephson effect", cum Laude, UAM, 2012; Álvaro Gómez: "Quantum Coherence in Semiconductor Qubits", cum Laude, UCM, 2014; Mónica Benito: "Floquet and Dissipative Engineering in Mesoscopic Systems", cum Laude, UAM 2017; Fernando Gallego: "Electronic, Heat and Ultra Cold Atoms Transport in Quantum Dot Systems", cum Laude, UCM, 2017; Miguel Bello: "Interplay between topology and driving in periodic lattices", cum Laude, UAM 2020.

From the 13 advised PhDs, 9 follow Academia Career, 4 with a permanent position (UC3M, UIB, CSIC) and 5 postdoctoral researchers (U. Basel, U. Braunschweig, UAM, ICM, MPI Quantum Optics, Garching (with Prof. Cirac from September 2020). PhDs in progress: Jordi Picó: "Transport in strongly correlated hybrid systems"; Beatriz Pérez: "Qubits manipulation in low dimensional systems with non trivial topology".

Also, nine Master thesis already defended (UAM and UCM); supervision of German undergraduate students through RISE program (DAAD), 2016 and 2017; mentoring of several undergraduate students for the bachelor, students with a "JAE intro" grant (CSIC) for introduction to research, supervision of several undergraduate students in the topic of "Introduction to Quantum Computation in Solid State Platforms" etc..

Teaching Activities

Honorary Professor at the UAM from 1990-1995; Teaching undergraduate courses for 8 years at the UAM; Professor in the postgraduate program at the Carlos III university 1996-98. Participation in the Master program on Quantum Information at the UCM of Madrid from 2015-present and in the Master Programs on Condensed Matter and on Theoretical Physics at the UAM as Master adviser. Participation in the Bachelor program at the UAM and UCM as Bachelor projects adviser. Tutorial lessons at the UCM for undergraduate students on "Spin Qubits in Quantum Dots for Quantum Computation".

Invited talks

More than 80 Invited Talks in International Conferences, Workshops and Scientific Schools, 40 in the last 10 years. Among them: ICPS 2014, Austin, USA; ICPS 2018 Montpellier; ICSNN 2016, Hong Kong; Fall Meeting of the Brazilian Physical Society, Iguazu, 2018; OPON2018, Münster 2018; "UK Quantum Dot Day", (IOP), Lancaster 2019; SPICE International Workshop: Topology Matters, Mainz 2017; XXIV Sitges Conference on Statistical Mechanics, Plenary Talk, 2014, Spain; International Workshop: Quantum Designer Physics, San Sebastian, 2019; "Quo vadis quantum simulators?", Wilczek Quantum Center, Shanghai 2019, Spin Qubit 2021, Switzerland.

Around 60 invited seminars in other research institutions (25 from 2010). Invited outreach lectures, among others: at Open Doors of Ottawa University (www.uottawa.ca/vr-recherche/research/frontier/lectures.html) 2002 and at the Spanish Student Residence of CSIC, Madrid, "Ágora para la Ciencia": "Artificial Atoms and Molecules for Quantum Information", 2013.

Organization of Scientific Meetings

Participation in the program, advisory, steering and/or organizing committee of 29 international conferences and workshops, 21 of them from 2010 (last 10 years). Among others: "International Conference on Low Temperature Physics", 2014, Buenos Aires, 2017, Stockholm; EDISON'19 Buffalo, 2017; "International Workshop on Nano-magnetism and Superconductivity at the Nanoscale", Comaruga (Spain) 2017, 2018, 2019; "Silicon Quantum Electronic Workshop", San Sebastian, 2019; ICSNN-2016, Hong Kong, ICSNN-2022 Vietnam; Chairwoman of ICSNN 2018, Madrid, Spain. Co-chair (with Prof. D. Loss) of the International Spin Qubit 2020 Conference, postponed to spring 2021, Switzerland.

Institutional Responsibilities (last 10 years)

Founder of the research group at ICMM, CSIC: “Novel Platforms and Nano-devices for Quantum Simulation and Computation”.

1997-present Leader (CSIC) of the consortium between the CSIC and the Applied Mathematics Department of the Carlos III University, UC3M (Madrid).

Member of the Gregorio Millán University Institute on Nanoscience and Industrial Mathematics (UC3M).

2013-2018 member of the National Agency (ANEP) as responsible of Condensed Matter.

2008-2011 member of the national committee of Materials Science (CSIC).

Referee Duties (last 10 years)

Member of an expert panel on Graphene, ESF 2009/2010.

Expert panel (Physics) member for the Research Foundation of Flanders, FWO, 2012-2014.

Panel member for evaluating excellence centers in Germany (DFG): Bonn 2011, Aachen 2015 and in DK (Danish NRF), Copenhagen, 2016.

Referee “Helmholtz Young Investigators Group Grants”, Germany 2017.

Member of the Hong Kong PhD Fellowship Scheme (HKPFS) Selection Panel for Science, Medicine, Engineering and Technology 2017/2018 and 2018/2019.

Member of the P3 panel of the ERC Starting Grants, 2018/2019.

External referee of ERC Consolidator projects, 2019.

Referee of research projects from different foreign agencies: DFG (Germany); NSF (USA); CNRS (France); NSRC (Canada); NCN (Poland), FONDECYT (Chile); DNRF (Denmark); CONICET (Argentina); PRACE (Advanced Computing in Europe) etc...

Member of Several Expert Panels in Spain.

External referee of full professor positions in Aalto (2013) and Würzburg (2016). Member of committees for several permanent positions and of PhD committees in countries: Sweden, Germany, Denmark, Spain...

Regular referee of several scientific journals, among them: Nature Physics, Nature Comm., Nature Photonics, Nanoletters, Physical Review Letters, Physical Review X, Applied Physics Letters, New Journal of Physics, Reports of Progress in Physics, Nanotechnology, Phys. Rev. B, EPL, Phys. Rev. Applied, ...

Co-editor of Europhysics Letters (from 2018).

Membership of Scientific Societies

European Physical Society (EPS); American Physical Society (APS) number 60033722; Spanish Royal Society of Physics (RSEF), 3082; German Physical Society (DPG), 193367; Spanish Condensed Matter Division (GEFES); Spanish Nanotechnology Network (Nano Spain); Quantum Information Network in Spain (RICE); CSIC Network on Quantum Nanotechnologies PTI-001.

Major Collaborators

Prof. A. Sachrajda, NRC, Ottawa: spin qubits; Prof. M. Grifoni: transport in quantum dots with superconducting contacts, Prof. D. Weiss: Majorana Fermions in quantum wires (U. Regensburg); Prof. I. Cirac (MPI Garching) and Dr. A. González-Tudela (IFF-CSIC): topological quantum optics; Prof. J. Cao, MIT and Dr. G. Engelhardt, Beijing U: ac driven systems; Prof. H. Xu: superconductors/quantum dot hybrid systems, U. of Lund and U. Beijing; Prof. F. Domínguez Adame (UCM) and Dr. R. Molina (IEM-CSIC): driven topological insulators; Dr. C. Creffield: interacting bosons in photonic lattices, UCM (Spain); Dr. Y. Ban and Prof. Xi Chen: inverse engineering techniques for quantum state transfer and spin qubits, U. Bilbao (Spain); Dr. R. López: Kondo effect in quantum dots, UIB (Spain).

Research Areas: Theoretical Condensed Matter Physics

Spin qubits in semiconductor quantum dots: spin relaxation and decoherence, quantum state transfer and quantum transport in quantum dot arrays; AC driven transport in nanostructures; Strongly correlated electrons: Kondo effect in quantum dots; Topological properties of low dimensional systems; Floquet Topological systems; Quantum simulation of bosonic and fermionic lattices.