

CURRICULUM VITAE

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1 In Brief

I am an experimental physicist with broad interests and expertise in solid-state physics, optical spectroscopy (Raman scattering, photoluminescence, etc.), nano-science and technology, thermoelectricity, the physics of low-dimensional materials (superlattices, quantum wires and dots), highly correlated electron systems, and high-pressure techniques. As far as the materials are concerned, my core expertise lies in the optical, electronic and vibrational properties of semiconductors and their nanostructures. Nonetheless, I have also studied hybrid halide perovskites, high-T_c and type-II superconductors, oxides, conjugated polymers, ferrofluids, diluted magnetic semiconductors, and light-emitting proteins among others. Since my permanent appointment as ICREA Research Prof. at ICMAB-CSIC, I have secured public funding to create a facility for optical spectroscopy with micro- and nanometer-scale resolution consisting in a high-throughput, high-resolution micro-Raman spectrometer combined with a scanning near-field optical microscope (SNOM). I further set up a laboratory for high-pressure physics, which is now an internationally recognized reference center in Spain, consisting in several diamond anvil cells (DACs), a specially designed He-bath cryostat for the DAC and a piston-cylinder clamp cell for electrical transport measurements under pressure. I mainly aim at using light as a probe of the physical properties of nanomaterials, searching for new behaviors or phenomena that emerge as a direct consequence of the reduced dimensionality and/or size of the system under study. Concerning research projects, I have been the PI of the ICMAB group and workpackage leader in a consortium of nine Spanish groups active from Dec. 2010 to Dec. 2016. We successfully obtained 3.9M EUR funding from the Spanish Ministry within the Consolider-Ingenio 2010 program to work on nanostructuring materials to empower thermoelectricity. I am currently co-PI

of the three-years project HIBRI2 of the Plan Nacional I+D+I, devoted to the development of novel organic/inorganic hybrid materials for photovoltaic/thermoelectric hybrid applications. Although I am principally pursuing basic research, almost all my lines of investigation have a clear application in mind, such as to improve the performance of optoelectronic devices based on nano-materials, enhance thermoelectric properties, boost piezo-resistive coefficients, develop ultra-sensitive spectroscopic techniques, etc.

I graduated in physics in 1985 from the Balseiro Institute in Bariloche, Argentina, for which I was granted one of 30 yearly fellowships, competing with students from all over the country. In 1986 I moved to Germany for my PhD at the Max-Planck Institute FKF in Stuttgart with Prof. M. Cardona, which I finished in 1989. It followed a two-years postdoc at AT&T Bell Labs in Murray Hill, USA, working with A. Pinczuk pursuing pioneer research on elementary excitations (e.g. plasmons) of 1D electron gases formed in GaAs quantum wires. My most cited paper is an outcome of that work. After the postdoc I went back to the MPI Stuttgart for three years. In 1996 I switched to the Technical University of Berlin for an appointment as Research & Teaching Associate. I performed there my Habilitation as *Privat Dozent* in June 1998. I was awarded the Karl-Scheel Prize of the Physical Society of Berlin for my contributions to the field of high-pressure semiconductor physics in 1999. In November 2003 I finally joined ICREA for a permanent appointment. Since 1996 I am directing the thesis work of many Ph.D. physics students and regularly teach physics courses at undergraduate and graduate level. For a full account of my research and academic activities visit my ICREA webpage:

<https://www.icrea.cat/Web/ScientificStaff/Goni-Alejandro-R-254>

2 Academic Degrees

Performed my *Habilitation* at the Technical University of Berlin in June 1998 and obtained the degree of *Privat Dozent*. The habilitation thesis entitled *On the optical properties of semiconductors under pressure*, has been published as a review article in the *Semiconductors and Semimetals Series*, Vol. 54, 1998.

Obtained the degree of *Doktor der Naturwissenschaften* (Dr. rer. nat.) from the University of Stuttgart in July 1989. The thesis work was done with Prof. Cardona at the Max-Planck-Institut für Festkörperforschung, Stuttgart, on the topic of optical properties of bulk semiconductors under high hydrostatic pressure.

Grade Point Average: 1 "sehr gut" (5-1)

Duration: 3 years.

Graduated with the degree of *Licenciado en Física* (Sc.M. in Physics) from the National University of Cuyo at the Balseiro-Institute of the National Atomic Energy Commission in December 1985. I performed an experimental thesis (three semesters) on electron distributions emitted in the interaction of ion beams with solid foils.

Grade Point Average: 8.76 (0-10)

Duration: 3 1/2 years.

Study of physics at the Institute of Mathematics, Astronomy and Physics (IMAF) of the National University of Córdoba.

Grade Point Average: 9.42 (0-10)

Duration: 2 1/2 years.

3 High School

Graduated from the German School (Córdoba) in 1979.

Grade Point Average: 9.83 (0-10)

Duration: 5 years.

4 Courses

Two-days seminar in July 1999 on *Employee/Manager Personal Talks* within the framework of the *Employee-Development Program* of the Technische Universität Berlin.

Seminar (16 hours) on *Creation of a Technology-Based Enterprize* within the framework of the *CREIMAN Project* in May 2006 at the Universidad Autónoma de Barcelona.

5 Languages

Fluent in English, German and Spanish (mother tongue).

6 Fellowships(on the basis of merit)

From July 1982 to March 1986 I held a fellowship from the National Atomic Energy Commission of the Rep. Argentina.

From April 1986 to July 1989 I held a graduate student fellowship from the Max-Planck-Gesellschaft, Germany.

7 Awards

Karl-Scheel Prize of the Physical Society of Berlin, 1999.

8 Experience

ICREA Research Professor (Institució Catalana de Recerca i Estudis Avançats) at ICMAB (Institut de Ciència de Materials de Barcelona) since November 2003, studying physical properties of nanostructured materials like semiconductors, oxides, polymers, among others and low-dimensional systems by means of optical spectroscopy. I further run the facility for high pressure experiments and coordinate the activities in thermoelectricity. I am directing the thesis work of many Ph.D. physics students. Since 2007 I regularly teach every winter semester at the Univ. Autònoma de Barcelona the course on *Optical properties of nanostructured materials* within the block "Materiales a escalas nanométricas" of the Master on Material Science (duration 17 hours including 3 hours in the lab).

Senior Research and Teaching Associate at the Technical University of Berlin, Germany, from February 2002 to November 2003, conducting optical spectroscopy and transport experiments on condensed matter, semiconductor-superconductor hybrids and low-dimensional systems. I am directing the Master and Ph.D. thesis work of many physics students.

From February 2000 to February 2004 member of the Executive Board (Ressort *Colloquia*) of the Physical Society of Berlin.

Research and Teaching Associate at the Technical University of Berlin, Germany, from January 1996 to January 2002, conducting optical spectroscopy experiments on condensed matter, semiconductor-superconductor hybrids and low-dimensional systems. I directed the Master and Ph.D. thesis work of eight physics students. From October 1997 to April 1999 I taught at the Technical University of Berlin the Solid State Physics course for undergraduates in physics (two-semester lecture, 4 hours weekly) and from April 1998 to August 2002 I taught also at the TU Berlin the Physics Introductory Course for all engineering students (2 hours weekly, approx. 500 to 1000 students).

Research Associate at Max-Planck-Institut FKF, Stuttgart, Germany, from November 1992 to December 1995, conducting optical spectroscopy measurements on condensed matter under high pressure. In parallel to my research activities I co-directed the thesis work of two Ph.D. students at the Max-Planck Institute. I taught a graduate physics course (duration: 30 hours) on *Optical Properties of Semiconductors under Pressure* at the University of Valencia, Spain, in November 1993, and at the National University of Córdoba, Argentina, in December 1994. I also taught a physics course for undergraduates (duration: 30 hours) on *Optical Spectroscopies on Semiconductors* at the Technical University of Berlin, Germany, between April-June 1995.

Postdoctoral Research Associate at AT&T Bell Labs, Murray Hill, USA, from September 1990 to November 1992. I carried out optical spectroscopy measurements on low dimensional semiconductor microstructures in a magnetic field.

Postdoctoral Research Associate at Max-Planck-Institut FKF, Stuttgart, Germany, from August 1989 to August 1990. I pursued optical spectroscopy measurements on condensed matter under high pressure.

Research Assistant, Max-Planck-Institut FKF, Stuttgart, Germany, April 1986- July 1989. I carried out experimental research on the optical properties of bulk semiconductors under high hydrostatic pressure. I assisted in all facets of constructing an optical setup for absorption measurements at low temperatures and high pressures. I developed an experimental technique for electrical measurements with the diamond-anvil high-pressure cell.

Research Assistant, Atomic Collisions Group, Balseiro Institute, Centro Atómico Bariloche, Argentina, August 1984 to March 1986, conducting measurements on secondary electron emission by the interaction of an ion beam with solid foils. Assisted in designing and constructing an electrostatic electron analyzer and target chamber.

From July 1984 to July 1985 I was involved as teacher of mathematics and geometry in the *Campaña Nacional de Alfabetización* for the alphabetization of adults in Bariloche, Argentina.

From March 1981 to July 1982 I was the person in charge of the Physical-Chemical Laboratory of the German School (Córdoba) and was a teaching assistant in the physics course.

9 Grants and Funding

Support from the Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V. for a one-month stay at Valencia University, Spain, November 1993, under the project *Wissenschaftliche Zusammenarbeit mit dem Consejo Superior de Investigaciones Científicas*.

Acciones Integradas Hispano-Alemanas 1995 Grant No. AI95-36 from the Kernforschungszentrum Karlsruhe/Internationale Beziehungen-koordinierten WTZ-Vorhaben (1995 - 1997).

Start-up funding (200.000,- u\$s) from *Fondo de Superconductividad* of the Fundación Balseiro, Argentina, for setting up an optical spectroscopy laboratory at the Centro Atómico Bariloche, Argentina (1996-1997).

Acciones Integradas Hispano-Alemanas 1999 Grant from the Deutsche Akademische Austauschdienst (DAAD) for travel expenses DM 20.000,- for 2 years (1999 - 2000).

PROALAR 2000 Grant for a scientific collaboration between Germany (Technische Universität Berlin) and Argentina (Centro Atómico Bariloche) from the DAAD and FONCYT. DM 40.000,- for two years (2000 - 2001) to work on light-induced effects in high-Tc superconductors. One further year extension DM 20.000,- (2002).

Co-director of project B10 of Sonderforschungsbereich Sfb-296 from the Deutsche Forschungsgemeinschaft (DFG). Research grant, DM 240.000,- for 3 years (2001 - 2003).

Research grant GO 676/9-1 from the Deutsche Forschungsgemeinschaft (DFG). EUR 180.000,- for 3 years (September 2001 - June 2004).

Convenio 01AR0001 Grant for a scientific collaboration between Spain and Argentina from the CSIC and CONICET, project no. 2004AR0076 . EUR 6.500,- for two years (November 2003 - December 2005).

Project *Optoelectronic properties of Si-based semiconductor nanostructures grown by Molecular-Beam Epitaxy*, funded by MATGAS-Air Products and Chemicals, Inc. Total: 58.204,80 U\$S (-19% CSIC overhead), period: February 2003 - January 2004.

Project Ref. MAT-2003-00738, *Propiedades optoelectrónicas de nanoestructuras tensadas epitaxiales de semiconductores tipo IV* (PONTES-IV), from the Dirección Gral. de Investigación - Ministerio de Ciencia y Tecnología. Total: 144.900,00 EUR for the period December 2003 - November 2006.

Project *Optoelectronic properties of Si-based semiconductor nanostructures grown by Molecular-Beam Epitaxy*, funded by MATGAS-Air Products and Chemicals, Inc. Total: 50.000,- EUR (-19% CSIC overhead), period: October 2004 - September 2005.

Project *Micro/nano-optical spectroscopy facility* within the Nanotechnology Laboratory at Matgas 2000 AIE. Total: 215.000,00 EUR for equipment to set up the lab.

Complements for the Micro/nano-optical spectroscopy facility at Matgas 2000 AIE from the Ministry of Sciences and Education (MEC) of Spain within the program *Ayudas para Parques Científicos y Tecnológicos*. Total: 49.000,00 EUR for equipment.

Our research group at ICMAB has been recognized as *Singular Research Group* under 2005SGR01032 by the Agencia de Gestio d'Ajuts Universitaris i de Recerca of the Generali-

tat de Catalunya, October 2005.

Project Ref. MAT-2006-02680, *Nanoestructuras epitaxiales de SiGe para nanofonónica y aplicaciones termoeléctricas* (SiGe-NANOFONO), from the Ministerio de Educación y Ciencia. Total: 126.000,00 EUR for the period December 2006 - November 2009.

Funding for the organization (chairman) of the 12th International Conference on High Pressure Semiconductor Physics (HPSP12) in CosmoCaixa Museum, Barcelona, Spain, August 2006, from different Spanish sources: 5.000,- EUR from the Ministerio de Educación y Ciencia (MEC), 4.500,- EUR from CSIC, 3.000,- EUR from Fundación BBVA, 2.300,- EUR from the Generalitat Valenciana, 1.200,- EUR from Universidad de La Laguna (ULL), and 500,- EUR from M.T. Brandao S.R.L. Total: 16.500,00 EUR.

PROALAR 2007 Grant for a scientific collaboration between Germany (Technische Universität Berlin) and Argentina (Universidad Nacional de Córdoba, FaMAF) from the DAAD and FON-CYT to work on ferrofluids. Total: 10.000,- EUR for two years (2007 - 2008).

Project Ref. HA2007-0084, *Acciones Integradas Hispano-Alemanas 2007, High pressure study of the lattice and carrier dynamics in self-assembled InAs/GaAs quantum dots*. Grant from the Spanish Ministry of Science & Education for travel expenses in the framework of a collaboration between our group at ICMAB and the group of Prof. Axel Hoffmann at the TU Berlin. Total: 7.000,- for 2 years (2008 - 2009).

Funding for the organization (co-chairman) of the ICREA Phonon Engineering Workshop 2010 in Sant Feliu de Guíxols, Barcelona, Spain, to be held from 25 to 27th May 2010, from ICREA. Total: 25.000,- EUR.

Project within the 5th GICSERV program for access to the Lithography/Microfabrication Facility of CNM, *Nanocantilevers of Si/SiGe heterostructures with enhanced piezoresistivity*, from CSIC, Spain. Total: 3.000,00 EUR for the period November - December 2009.

Project Ref. MAT-2009-09480, *Piezoresistencias extremas en estructuras de Si/Ge por modulado de tensiones: Nuevos sensores de nanovigas* (PIEZOHM), from the Ministerio de Ciencia e Innovación (MICINN) of Spain. Total: 193.600,00 EUR for the period February 2010 - January 2013.

Our research group *Propietats Optoelectròniques i Superficials de Materials Nanoestructurats* (NANOPTO) at ICMAB-CSIC has been recognized as *Consolidated Research Group* under 2009SGR558 by the Agencia de Gestio d'Ajuts Universitaris i de Recerca of the Generalitat de Catalunya, July 2009.

Project Ref. CSD2010-00044, *Tailoring electronic and phononic properties of nanomaterials: Towards improved thermoelectricity* (NanoTHERM), in the framework of the CONSOLIDER-INGENIO 2010 Program from the Ministerio de Ciencia e Innovación (MICINN) of Spain. Total: 3.900.000,00 EUR for the period January 2011 - December 2015 (plus one year extension till Dec. 2016) for a consortium of nine research groups in Spain.

Project Ref. MAT2012-37776, *Investigación y optimización de dispositivos fotovoltaicos orgánicos nanoestructurados mediante un método de procesado inspirado en el análisis combinatorial* (PHOTOCOMB), from the Ministerio de Economía y Competitividad (MINECO) of

Spain. Total: 121.000,00 EUR for the period January 2013 - December 2015 plus a FPI grant to contract a PhD. student to work on the project.

Project Ref. PICT-2012-2286, *Propiedades ópticas de nanoestructuras plasmónicas generadas por química coloidal, nanolitografía láser y por procesos de sinterizado a muy altas presiones: Aplicación a espectroscopías ultrasensibles*, from FONCYT of Argentina. Total: 398.840 \$AR for the period June 2013 - June 2016.

Our research group *Materials Nanoestructurats per Optoelectrònica i Generació d'Energia* (NANOPTENER) at ICMAB-CSIC has been recognized as *Consolidated Research Group* under 2014SGR1637 by the Agencia de Gestio d'Ajuts Universitaris i de Recerca of the Generalitat de Catalunya, September 2014.

Principal Investigator (Responsable) at ICMAB-CSIC of the research project to be developed by Dr. Joffre Gutiérrez Royo, recipient of a Beatriu de Pinós 2014 (BP-DGR) grant, Ref. 2014 BP-B 00211, by the Agencia de Gestio d'Ajuts Universitaris i de Recerca of the Generalitat de Catalunya. Total: 91.022,40 EUR for the period September 2015 - August 2017.

Project Ref. MAT2015-70850-P, *Híbridos de materiales orgánicos e inorgánicos para aplicaciones híbridas fotovoltaica y termoeléctrica* (HIBRI2), from the Ministerio de Economía y Competitividad (MINECO) of Spain. Total: 149.314,00 EUR for the period January 2016 - December 2018 plus a FPI grant to contract a PhD. student to work on the project.

Personnel grant of Formación de Personal de Investigación (FPI) from the Ministerio de Economía y Competitividad (MINECO) of Spain in the framework of the *Severo Ochoa* Programme for Centres of Excellence in R&D (SEV- 2015-0496) to hire a PhD student for four years (86.500,- EUR) to work on the project: *Engineering the Solar Spectrum with Photonic Architectures for Improved Solar Energy Conversion*. Co-direction with Dr. A. Mihi.

10 Professional Affiliations

Member of the Argentine Physical Society (AFA).

Member of the American Physical Society (APS).

Member of the German Physical Society (DPG).

Ex-Board Member of the Physical Society of Berlin (PGzB).

11 Invited Presentations

- March Meeting of the APS, Indianapolis, USA, March 1992.
Inelastic Light Scattering by the 1D Electron Gas in GaAs Quantum Wires.
- NATO Advanced Research Workshop on Phonons in Nanostructures, St-Feliu de Guixols, Spain, September 1992.
Inelastic Light Scattering by Free Electrons in GaAs Quantum Wires.
- The 6th HPSP International Conference, Vancouver, Canada, August 1994.

Electron-Electron Interactions in 2D Electron Gases: Inelastic Light Scattering Studies at High Pressure.

- Physikalisches Kolloquium, Technische Universität Berlin, Germany, October 1994.
Über das eindimensionale Elektronengas in GaAs Quantendrähten.
- Seminar of the Solid State Physics Department, University of Aarhus, Denmark, October 1994.
Electron-electron interactions in 2D electron gases: Inelastic light scattering studies at high pressure.
- Seminario del Grupo de Bajas Temperaturas, Centro Atómico Bariloche, Argentina, December 1994.
Propiedades ópticas de alambres cuánticos dopados en estructuras semiconductoras de GaAs/AlGaAs.
- Seminar *Spezielle Probleme der Halbleiterphysik*, Universität Würzburg, Germany, July 1995.
Electron-electron interactions in 2D electron gases: Inelastic light scattering studies at high pressure.
- The Joint XV AIRAPT & XXXIII EHPRG International Conference, Warsaw, Poland, September 1995.
High-Pressure Study of Electron-Electron Interactions in Double-Layer 2D Electron Gases.
- Kolloquium der AG Thomsen, Technische Universität Berlin, Germany, April 1996.
Druck-Temperatur Phasendiagramm von CuGeO_3 (mit Videodemonstration).
- Seminar *Moderne Probleme der Festkörperphysik*, Institut für Theoretische Physik (AG Bennemann), Freie Universität Berlin, Germany, June 1997.
Inelastische Lichtstreuung an elementaren Anregungen des 2D Elektronengases unter hohem Druck.
- The 10th International Conference of Superlattices, Microstructures and Microdevices (IC-SMM), Lincoln, Nebraska, U.S.A., July 1997.
Lasing Properties of a Single, Highly Strained InAs Monolayer in Bulk GaAs.
- Seminario conjunto del Grupo de Bajas Temperaturas y de Teoría de Sólidos, Centro Atómico Bariloche, Argentina, August 1997.
La interacción electrón-electrón en gases de electrones bidimensionales: Un estudio espectroscópico a altas presiones.
- The 14th Latinamerican Symposium in Solid State Physics (SLAFES), Oaxaca, Mexico, January 1998.
Lasing and electronic properties of single InAs monolayers embedded in bulklike GaAs.

- Habilitationsvortrag (multimedia presentation with live high-pressure experiment) Technische Universität Berlin, Germany, June 1998.
Über die supraleitenden Eigenschaften von Silizium.
- Seminarvortrag am Paul-Drude-Institut, Berlin, Germany, October 1998.
Lasing and electronic properties of single InAs monolayers in bulklike GaAs.
- Seminar of the Department of Superconductivity and Magnetism, Universität Leipzig, Germany, November 1998.
Flußschlauchbewegung in Form von Filamenten und Kanälen in Pb/In-Supraleiterschichten.
- SCIENCE-Seminar der Universität Hamburg, Germany, December 1998.
Many-body effects in 2D electron gases: Inelastic light scattering studies at high pressure.
- Karl-Scheel-Prize Session of the Physical Society of Berlin, Germany, May 1999.
Druckinduzierte Übergänge in Halbleiter- und Spinleitersystemen.
- Physikalisches Kolloquium der Universität des Saarlandes, Saarbrücken, Germany, July 1999.
Über den Einfluß hoher Drücke auf die elektronischen Eigenschaften niederdimensionaler Halbleiterstrukturen.
- Vorstellungsvortrag an der Albert-Ludwigs-Universität Freiburg, Germany, July 1999.
Über den Einfluß hoher Drücke auf die elektronischen Eigenschaften niederdimensionaler Halbleiterstrukturen.
- 2nd TMR workshop on *Quantum Transport in the Frequency and Time Domains*, Genova, Italy, October 1999.
Inelastic light scattering on a two-dimensional electron gas with variable density.
- The 15th Latinamerican Symposium in Solid State Physics (SLAFES), Cartagena, Colombia, November 1999.
Eddy-current vortex damping in superconductor-semiconductor hybrid systems.
- Seminario del Grupo de Bajas Temperaturas, Centro Atómico Bariloche, Argentina, August 2000.
Dinámica de vórtices en híbridos super-semiconductores.
- Coloquios sobre Física del Sólido, Instituto Balseiro, Bariloche, Argentina, August 2000.
Efectos de muchos cuerpos en gases bidimensionales de electrones de densidad variable.
- Seminarios sobre Temas Actuales de la Física, FAMAF, Universidad Nacional de Córdoba, Argentina, August 2000.
Disipación por generación de corrientes de Foucault en híbridos super-semiconductores.

- Coloquios en Física de la Materia Condensada, UBA, Buenos Aires, Argentina, August 2000.
Efectos de muchos cuerpos en gases bidimensionales de electrones de densidad variable.
- Elektrotechnisches Kolloquium der Universität des Saarlandes, Saarbrücken, Germany, December 2000.
Über stimulierte Emission und optische Eigenschaften von Halbleiter-Nanostrukturen.
- Coloquios sobre Física del Sólido, Instituto Balseiro, Bariloche, Argentina, February 2001.
El rol de la interacción electrón-fonón en la renormalización de transiciones ópticas en una monocapa de InAs en bulk GaAs.
- Seminarios sobre Temas Actuales de la Física, FAMAF, Universidad Nacional de Córdoba, Argentina, February 2001.
Propiedades electrónicas de puntos cuánticos auto-organizados de InAs/InGaAs en altos campos magnéticos.
- Kolloquium der Abteilung Keimer, MPI für Festkörperforschung, Stuttgart, Germany, April 2001.
Many-body effects in 2D electron gases of variable density studied by optical spectroscopy.
- Coloquio de Física del Instituto de Ciencias de Materiales, Universidad de Valencia, Spain, October 2001.
Inestabilidad del gas bidimensional de electrones y otros efectos de muchos cuerpos relacionados con la interacción de intercambio.
- Seminarios de Física del Estado Sólido, Universidad Autónoma de Madrid, Spain, October 2001.
Inestabilidad del gas bidimensional de electrones y otros efectos de muchos cuerpos relacionados con la interacción de intercambio.
- Coloquios sobre Física del Sólido, Instituto Balseiro, Bariloche, Argentina, November 2001.
El rol de la interacción de intercambio en el comportamiento de gases bidimensionales de electrones a altas densidades.
- Seminarios sobre Temas Actuales de la Física, FAMAF, Universidad Nacional de Córdoba, Argentina, November 2001.
El rol de la interacción de intercambio en el comportamiento de gases bidimensionales de electrones a altas densidades.
- Department of Physics, Texas Tech University, Lubbock, Texas, USA, May 2002.
High-pressure effects on the electronic and optical properties of low-dimensional semiconductor structures.

- Instituto de Ciencias de Materiales de Barcelona (ICMAB), Barcelona, Spain, June 2002.
Lasing and optical properties of low-dimensional semiconductor nanostructures.
- 87th meeting of the Argentine Physical Society (AFA), Huerta Grande, Córdoba, Argentina, September 2002.
Espectroscopía Raman en ferrofluidos.
- Coloquios sobre Física del Sólido, Instituto Balseiro, Bariloche, Argentina, October 2002.
Espectroscopía Raman en ferrofluidos.
- Coloquio General de Física del Instituto Balseiro, Bariloche, Argentina, February 2003.
Sobre ferromagnetismo en gases bidimensionales de electrones.
- The 2nd Euroconference on Quantum Optoelectronics for Nanotechnology (EQUONT-2), Toledo, Spain, June 2003.
On the electronic structure of quantum dots in external magnetic and stress fields.
- Conferència a Càrrec, ICMAB, Barcelona, Spain, May 2004.
Does the 2D electron gas become ferromagnetic?
- Seminario General del ICMM, Madrid, Spain, June 2004.
Does the two-dimensional electron gas become ferromagnetic?
- Coloquio General de Física del Instituto Balseiro, Bariloche, Argentina, November 2004.
Recombination dynamics in self-assembled InP/GaP quantum dots under high hydrostatic pressure.
- 17th ICREA Colloquium, Barcelona, Spain, October 2005.
Squeezing Light from Ge/Si Quantum Dots: A Challenge of Semiconductor Nanotechnology.
- Jornadas de Física Bariloche 2005 - Conmemorando los 50 años del Instituto Balseiro, Bariloche, Argentina, December 2005.
Squeezing Light from Ge/Si Quantum Dots: A Challenge of Semiconductor Nanotechnology.
- 3rd International Workshop on Multifunctional Materials, Bariloche, Argentina, March 2006.
Carbon-induced Ge/Si Quantum Dots for Strain-Engineered Semiconductor Microdevices.
- Jornadas de Ciencia y Sociedad a los 50 Años de Fa.M.A.F., Córdoba, Argentina, December 2006.
Opto-electrónica a base de silicio/germanio? Un sueño convertido en desafío nanotecnológico.
- Jornada de Microscòpies de Proximitat ICMAB-CSIC, Barcelona, Spain, April 2007.
Principios generales y aplicaciones de la microscopía óptica de campo cercano (SNOM).

- Invited address at the Slovak Academy of Sciences, Bratislava, Slovakia, July 2007.
Probing the strain status of self-assembled quantum dots using high pressure.
- Plenary talk at Sólidos 2007, Huerta Grande, Córdoba, Argentina, November 2007.
Sensing strain at the nanoscale with optical phonons: SiGe alloys & quantum dots.
- The 13th Int. Conf. on High Pressure Semiconductor Physics (HPSP13), Fortaleza, Brazil, July 2008.
Phonon Pressure Coefficient as Nanoscale Probe of Strain in SiGe Alloys & Quantum Dots.
- Seminarios sobre Temas Actuales de la Física, FaMAF, Universidad Nacional de Córdoba, Argentina, August 2008.
Sensing Light at the Nanoscale: Scanning Near-Field Optical Microscopy (SNOM).
- II Barcelona Workshop on Optical Characterization of Materials, Barcelona, Spain, October 2008.
SNOM: Applications for the Characterization of Nanocavities and Nanostructures.
- Seminarios sobre Temas Actuales de la Física, FaMAF, Universidad Nacional de Córdoba, Argentina, March 2010.
Ferrofluids in Action: Dynamics of Magnetic-Field Induced Structure Formation.
- The 14th Int. Conf. on High Pressure Semiconductor Physics (HPSP14), Changchun, China, August 2010.
Reduction of the Transverse Effective Charge of Optical Phonons in ZnO under High Pressure.
- ICMAB Periodical Seminars, Institut de Ciencia de Materials de Barcelona (ICMAB-CSIC), Spain, November 2010.
Ferrofluids in Motion: Dynamics of Magnetic-Field Induced Structure Formation.
- V Encuentro de Altas Presiones, La Laguna, Tenerife, Spain, June 2011.
Sensing Strain at the Nanoscale with Optical Phonons: Application to SiGe Alloys & Ge Quantum Dots.
- 2nd EULASUR Summerschool, La Plata, Argentina, September 2011.
Scanning Near-Field Microscopy: Fundamentals & Applications.
- V Meeting of Consolider NanoTHERM, San Sebastián, Spain, October 2012.
High Thermoelectric Performance of P3HT/Carbon Nanotube Composites.
- ICMAB Scientific Workshop on *Optical Characterization*, Bellaterra, Spain, November 2012.
Optical Spectroscopy under High Hydrostatic Pressure.

- 3rd RBNI-Technion / CIC-Nanogune / BNC-B Symposium, Bellaterra, Spain, November 2012.
Using High Pressure to Settle the Quantum Confinement Model of Visible Emission from Si/SiO_x Nanocrystals.
- 1st UFMA International Meeting on Characterization and Modeling of Materials, São Luis, Brazil, June 2013.
Using Raman Scattering for Sensing Strain at the Nanoscale: Application to SiGe Alloys and Ge Quantum Dots.
- FOTON-INSA Séminaire, Rennes, France, August 2013.
Using High Pressure to Unravel the Mechanism of Visible Emission in Amorphous Si Nanoparticles Embedded in a SiO_x Matrix.
- Seminario de Física de FaMAF, Córdoba, Argentina, March 2014.
Using High Pressure to Unravel the Mechanism of Visible Emission in Amorphous Si/SiO_x Nanoparticles.
- 2nd Imperial College London-ICMAB Workshop on Organic Photovoltaics, Barcelona, Spain, June 2014.
Effects of High Pressure on Electronic & Optical Properties of Conjugated Polymers.
- The 16th Int. Conf. on High Pressure Semiconductor Physics (HPSP16), Mexico D.F., Mexico, August 2014.
Using High Pressure to Unravel the Nature of Optical Transitions in (In,Ga)As/GaP Quantum Dots.
- EUPHONON Workshop on Phonons & Fluctuations, Le Mans, France, September 2014.
Tailoring Thermal Conductivity in Multilayered Ge/Si Nanostructures.
- CECAM Workshop Advanced Thermoelectrics at Nanoscale: from Materials to Devices, Paris, France, July 2015.
Polymer/Carbon Nanotube Composites with Positive-to-Negative Tunable Seebeck Coefficient.
- Recordant Manuel Cardona, Barcelona, Spain, July 2016.
A personal view to the figure of Manuel Cardona from a few disperse, little stories.
- International Workshop *What is bright with light?* (Bright2016), S.C. de Bariloche, Argentina, December 2016.
The Role of Dynamic Disorder in the Vibrational Spectra of Hybrid Methylammonium Lead Halide Perovskites.
- ICMAB Periodical Lecture, Barcelona, Spain, January 2017.
What is Dynamic Disorder and how manifests itself in Hybrid Halide Perovskites?.

- International Conference and Expo on Condensed Matter Physics, Valencia, Spain, September 2017.

On the effect of high pressure on transverse effective charges of optical phonons in group-III nitrides and ZnO.

- Research Workshop Fundamental Processes in Thin Film Solar Cells (EMTECH2017-Seville), Seville, Spain, October 2017.

Dynamic disorder and the vibrational spectra of hybrid halide perovskites.

- Current trends in Optical and X-Ray metrologies of key enabling nanomaterials/devices for the Ubiquitous Society, renewable energy and health (OptoX NANO), Okayama, Japan, November 2017.

Using pressure to unravel the nature of optical transitions in quantum dots.

12 Dissemination

- Talk for a broad audience (ca. 300 high-school students), including projection of a video and realization of a life experiment, in the framework of *Dia de la ciència a les escoles 2015 - La ciència en primera persona*, Institut Miquel Biada, Mataró, Spain, 18th November 2015, organized by Fundació Catalana per a la Recerca i la Innovació (FCRI).

'Apretando' materiales para sonsacarles información: Física a muy altas presiones.

- Talk for a broad audience (ca. 100 high-school students), including projection of a video and realization of a life experiment, in the framework of *Dia de la ciència a les escoles 2016 - La ciència en primera persona*, Instituto Maremar, Masnou, Spain, 15th November 2017, organized by Fundació Catalana per a la Recerca i la Innovació (FCRI).

La magia de la termoelectricidad: materiales que transforman calor en electricidad.

13 Ph.D. Thesis Directed

1. Paula Giudici, *On the spin instability and magnetic phases of the two-dimensional electron gas*, directors: A.R. Goñi, C. Thomsen, Inst. für Festkörperphysik, TUB - Technische Universität Berlin, 28/09/2004, 1 (sehr gut) mit Auszeichnung.
2. Sabine Bahrs, *Persistent photo-induced effects in high-temperature superconducting $R\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$* , directors: A.R. Goñi, C. Thomsen, Inst. für Festkörperphysik, TUB - Technische Universität Berlin, 25/11/2005, 1 (sehr gut) mit Auszeichnung.
3. Christian Kristukat, *High-pressure study of the electronic structure of self-assembled InAs/GaAs and InP/GaP quantum dots*, directors: A.R. Goñi, C. Thomsen, Inst. für Festkörperphysik, TUB - Technische Universität Berlin, 10/02/2006, 1 (sehr gut) mit Auszeichnung.

4. Juan Sebastián Reparaz, *Optical Properties of Low-Dimensional Semiconductor Nanostructures under High Pressure*, directors: A.R. Goñi, M.I. Alonso, Dept. of Physics, UAB - Universitat Autònoma de Barcelona, 18/11/2008, Excelente "cum laude".
5. Paul D. Lacharmoise, *Optical techniques with high spatial resolution and sensitivity for nanostructure characterization*, directors: A.R. Goñi, M.I. Alonso, Dept. of Physics, UAB - Universitat Autònoma de Barcelona, 05/05/2009, Excelente "cum laude".
6. Dirk Heinrich, *Strukturbildung in Ferrofluiden unter Einfluss magnetischer Felder*, directors: A.R. Goñi, C. Thomsen, Inst. für Festkörperphysik, TUB - Technische Universität Berlin, 02/09/2010, 1 (sehr gut).
7. Ioana Carmen Marcus, *Growth, optical and structural investigation of SiGe nanostructures*, directors: M.I. Alonso, A.R. Goñi, Dept. of Physics, UAB - Universitat Autònoma de Barcelona, 20/04/2012, Apta.
8. Lucas Romano Muniz, *Propiedades Ópticas de Semiconductores bajo Altas Presiones Hidrostáticas*, directors: A.R. Goñi, M.I. Alonso, Dept. of Physics, UAB - Universitat Autònoma de Barcelona, 28/09/2012, Apto.
9. Malte Schmidt, *Understanding the optical and electronic properties of organic semiconductors using high pressure*, directors: M. Campoy-Quiles, A.R. Goñi, M.I. Alonso, Dept. of Physics, UAB - Universitat Autònoma de Barcelona, 21/06/2013, Apto.
10. Alessandro Bernardi, *Growth and optical characterization of strain-engineered semiconductor nanostructures*, directors: M.I. Alonso, A.R. Goñi, Dept. of Physics, UAB - Universitat Autònoma de Barcelona, 05/02/2016, Excelente "cum laude".

14 Chairman

1. *12th Int. Conf. on High Pressure Semiconductor Physics* (HPSP12), CosmoCaixa Museum, Barcelona, Spain, July 31 - August 3, 2004, co-chairmen: A.R. Goñi & A. Cantarero.
2. *Joint 18th Int. Conf. on High Pressure Semiconductor Physics* (HPSP18) and *2nd Workshop on High-pressure Study of Superconductors* (WHS2), CosmoCaixa Museum, Barcelona, Spain, July 23 - 27, 2018, co-chairmen: A.R. Goñi & F. Rodríguez.

15 Editor

1. Section Editor of the online peer-reviewed international scientific journal *Papers in Physics*.
2. *Proceedings of the 7th Int. Conf. on High Pressure Semiconductor Physics* (HPSP7), Schwäbisch Gmünd, Germany, July 1996, edited by K. Syassen, R.A. Stradling, and A.R. Goñi (Akademie, Berlin, 1996). Reprinted from *phys. stat. sol. (b)* **198**, Number 1 (1996).

3. *Proceedings of the 11th Int. Conf. on High Pressure Semiconductor Physics (HPSP11)*, Berkeley, USA, August 2004, edited by U. Venkateswaran and A.R. Goñi (Wiley, Berlin, 2004). Reprinted from *phys. stat. sol. (b)* **241**, Number 14 (2004).
4. *Proceedings of the 15th Int. Conf. on High Pressure Semiconductor Physics (HPSP15)*, Montpellier, France, July 2012, edited by A.R. Goñi, P.Y. Yu, and A. San Miguel (Wiley, Berlin, 2012). Reprinted from *phys. stat. sol. (b)* **250**, Number 4 (2013).
5. *Proceedings of the Joint 17th Int. Conf. on High Pressure Semiconductor Physics (HPSP17)* and Workshop on High-pressure Study on Superconducting (WHS), Tokyo, Japan, August 2016, edited by A.R. Goñi and K. Matsuishi (Wiley, Berlin, 2016). To be published in *phys. stat. sol. (b)*.
6. *Proceedings of the Joint 18th Int. Conf. on High Pressure Semiconductor Physics (HPSP18)* and 2nd Workshop on High-pressure Study of Superconductors (WHS2), Barcelona, Spain, July 2018, edited by A.R. Goñi, A. Cantarero and J.S. Reparaz, to be published as *Focus Series* in *Papers in Physics* (2018).

16 Patents

1. Ref. ES1641.1145 registered 2015-11-24 in Spain: *A process of obtainment of an n-type organic semiconductor by irradiating a p-type organic semiconductor with UV-VIS radiation*, M. Campoy-Quiles, A.R. Goñi, B. Döring, C. Müller, and J. Ryan, granted to CSIC.

International application according to Patent Cooperation Treaty, Ref. PCT/EP2016/078459, presented on 2016-11-22 at European Patent Office, The Hague: *A process of obtainment of an n-type or a p-type organic semiconductor by UV-VIS irradiation*, on behalf of CSIC.

17 Publications

A total of 192 publications in international peer-reviewed journals and proceedings, including 3 book chapters, altogether with more than 4500 citations (last update: 06/03/2018). To date, my Hirsch number is h=35 (Google Scholar) or h=30 (Web of Knowledge). For a full citation report see <http://scholar.google.de/citations?user=WaFhKNYAAAAJ> and, alternatively, authors=(goni ar* not goni art* not goni are* not goni arr* or goni alej*) in the Web of Knowledge.

Review Articles

1. *Optical Fermi Edge Singularities of the One-Dimensional Electron Gas in Semiconductor Quantum Wires*.

J.M. Calleja, J.S. Weiner, A.R. Goñi, and A. Pinczuk; in *Optics of Semiconductor Nanostructures*, edited by F. Henneberger, S. Schmitt-Rink, and E.O. Göbel (Akademie, Berlin, 1993), p. 335.

2. *Optical Properties of Semiconductors under Pressure.*

A.R. Goñi and K. Syassen, in *High Pressure in Semiconductor Physics I*, edited by T. Suski and W. Paul, *Semiconductors and Semimetals Series*, Vol. 54 (Academic, San Diego, 1998), p. 247-425.

Divuligation "Broad Audience" Articles

1. *A Personal View to the Figure of Manuel Cardona from a Few Disperse, Little Stories.*

Alejandro R. Goñi, in *Manuel Cardona: Memories and Reminiscences*, edited by K. Ensslin and L. Viña (Springer, Cham, 2016), p. 45-48. DOI: 10.1007/978-3-319-20343-0

Publications in Conference Proceedings

1. *Effect of Pressure on the Thermally and Optically Activated Electrical Conductivity in AlGaAs:Si.*

T. Suski, A. R. Goñi, K. Syassen, and V. Mosser; Proc. of the IV International Conference on *High Pressure in Semiconductor Physics*, Porto Carras, Greece, August 1990, edited by D.S. Kyriakos and O.E. Valassiades, pp. 225.

2. *Resonance Raman and Optical Absorption Study of a GaInAs/AlInAs MQW-System under Pressure.*

C. Abraham, A.R. Goñi, D.S. Jiang, K. Syassen, Y. Zhang, and K. Ploog; Proc. of the IV International Conference on *High Pressure in Semiconductor Physics*, Porto Carras, Greece, August 1990, edited by D.S. Kyriakos and O.E. Valassiades, pp.96.

3. *Optical Singularities in GaAs/AlGaAs Multiple Quantum Wires*(extended abstract).

J.M. Calleja, A.R. Goñi, B.S. Dennis, J.S. Weiner, A. Pinczuk, S. Schmitt-Rink, L.N. Pfeiffer, K.W. West, J.F. Müller, and A.E. Ruckenstein; Proc. of the *Quantum Electronics and Laser Sciences Conference*, Baltimore, Maryland, May 1991.

4. *Low-Dimensional Electronic Systems. New Concepts.*

L.N. Pfeiffer, H.L. Stormer, R.C. Ashoori, A.R. Goñi, A. Pinczuk, K.W. Baldwin, and K.W. West; Proc. of the 7th International Winterschool on Low-Dimensional Electronic Systems, Mauterndorf, Austria, February 1992, edited by G. Bauer, F. Kuchar and H. Heinrich (Springer, Berlin, 1992), Ser. Solid-State Sci. v.111, p.143.

5. *Quantum Wires and other Novel Structures by MBE Overgrowth on the Cleaved Edges of Multilayer Substrates.*

L.N. Pfeiffer, H.L. Stormer, A.R. Goñi, A. Pinczuk, K.W. Baldwin, and K.W. West; Proc. of the SPIE **1676**, 83 (1992).

6. *Inelastic Light Scattering by Free Electrons in GaAs Quantum Wires.*
A.R. Goñi, A. Pinczuk, J.S. Weiner, J.M. Calleja, B.S. Dennis, L.N. Pfeiffer, and K.W. West; in *Phonons in Semiconductor Nanostructures*, edited by J.P. Leburton, J. Pascual and C.M. Sotomayor-Torres, NATO ASI Series, Series E: Appl. Sci.-Vol. 236 (Kluwer, Dordrecht, 1993), p. 287.
7. *Optical Properties of Semiconductor Quantum Well Wires.*
J.M. Calleja, A.R. Goñi, J.S. Weiner, B.S. Dennis, A. Pinczuk, L.N. Pfeiffer, and K.W. West; in *Frontiers of Optical Phenomena in Semiconductor Structures of Reduced Dimensions*, (Kluwer, New York, 1993).
8. *Effect of Pressure on the Photoluminescence from InAs Monolayers in GaAs.*
G.H. Li, A.R. Goñi, C. Abraham, K. Syassen, A. Cantarero, P.V. Santos, O. Brandt, and K. Ploog; in Proc. of the 22nd ICPS, Vancouver, Canada, August 1994, edited by D.J. Lockwood (World Scientific, London, 1995), p. 1189.
9. *Optical Fermi-Edge Singularities under Magnetic Fields in GaAs Quantum Wires.*
J.M. Calleja, A.R. Goñi, A. Pinczuk, B.S. Dennis, J.S. Weiner, L.N. Pfeiffer, and K.W. West; in Proc. of the 22nd ICPS, Vancouver, Canada, August 1994, edited by D.J. Lockwood (World Scientific, London, 1995), p. 1671.
10. *Optical Singularities in Quantum Wires in High Magnetic Fields.*
J.M. Calleja, A.R. Goñi, A. Pinczuk, B.S. Dennis, J.S. Weiner, L.N. Pfeiffer, and K.W. West; in Proc. of the 11th Int. Conf. on High Magnetic Fields in the Physics of Semiconductors, Cambridge, USA, August 1994, edited by D. Heiman (World Scientific, Singapore, 1995), p. 528.
11. *Effect of Pressure on Direct Optical Transitions of InSe from Photoreflectance Spectroscopy.*
C. Ulrich, A.R. Goñi, K. Syassen, O. Jepsen, A. Cantarero, and V. Muñoz; in *High Pressure Science and Technology*, edited by W.A. Trzeciakowski (World Scientific, Singapore, 1996), p. 612.
12. *Photoreflectance Spectroscopy of GaAs/Al_xGa_{1-x}As SQW Structures under Pressure.*
C. Ulrich, A.R. Goñi, K. Eberl, and K. Syassen; in *High Pressure Science and Technology*, edited by W.A. Trzeciakowski (World Scientific, Singapore, 1996), p. 647.
13. *High-Pressure Study of Electron-Electron Interactions in Double-Layer 2D Electron Gases.*
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14. *Phase Transitions of CuGeO₃ at High Pressures.*
T. Zhou, A.R. Goñi, S. Ves, R. Kremer, and K. Syassen; in *High Pressure Science and Technology*, edited by W.A. Trzeciakowski (World Scientific, Singapore, 1996), p. 423.

15. *Interacting 2D Electron Gases in Double Quantum Wells at Low Electron Densities.*
A.R. Goñi, K. Syassen, and K. Eberl; in *Proc. of the 23rd ICPS*, Berlin, Germany, July 1996, edited by M. Scheffler and R. Zimmermann (World Scientific, Singapore, 1996) p. 2303.
16. *High-Pressure Raman Scattering of Biaxially Strained GaN on GaAs.*
H. Siegle, A.R. Goñi, C. Thomsen, C. Ulrich, K. Syassen, B. Schöttker, D.J. As, and D. Schikora, in *Gallium Nitride and Related Materials II*, ed. by C.R. Abernathy, H. Amano, and J.C. Zolper (Mater. Res. Soc., Pittsburgh, 1997), p. 225.
17. *Electronic Inelastic Light Scattering in a Periodic δ -Doping GaAs Multiple Quantum Well Structure.*
C. Kristukat, A.R. Goñi, S. Rutzinger, W. Wegscheider, G. Abstreiter, and C. Thomsen, Proc. 25th Int. Conf. Phys. Semicond., Osaka 2000, ed. by N. Miura and T. Ando (Springer, Berlin, 2001), p. 727.
18. *Resonant Raman Scattering in an InAs/GaAs Monolayer Structure.*
J. Maultzsch, S. Reich, A.R. Goñi, and C. Thomsen, Proc. 25th Int. Conf. Phys. Semicond., Osaka 2000, ed. by N. Miura and T. Ando (Springer, Berlin, 2001), p. 697.
19. *Eddy-Current Damping of Vortices in Superconductor-2D-Electron-Gas Hybrid Structures.*
A.R. Goñi, H. Scheel, M. Danckwerts, C. Thomsen, K. Eberl, J. Baker, and A.G. Rojo, Proc. 25th Int. Conf. Phys. Semicond., Osaka 2000, ed. by N. Miura and T. Ando (Springer, Berlin, 2001), p. 1809.
20. *Transport Measurements on Magnetically Coupled Superconductor-2D-Electron-Gas Hybrids.*
H. Scheel, A.R. Goñi, C. Thomsen, and K. Eberl, Proc. 26th Int. Conf. Phys. Semicond. (ICPS), Edinburgh, UK, July 2002, eds. A.R. Long and J.H. Davies (Institute of Physics, Bristol, 2003), D125.
21. *Exchange-Driven Instability and Spin Polarization of the Two-Dimensional Electron Gas.*
P. Giudici, A.R. Goñi, U. Haboeck, C. Thomsen, K. Eberl, F.A. Reboredo, and C.R. Proetto, Proc. 26th Int. Conf. Phys. Semicond. (ICPS), Edinburgh, UK, July 2002, eds. A.R. Long and J.H. Davies (Institute of Physics, Bristol, 2003), H63.
22. *Optical properties and carrier dynamics of InP quantum dots embedded in GaP.*
F. Hatami, W.T. Masselink, L. Schrottke, J.W. Tomm, V. Talalaev, C. Kristukat, and A.R. Goñi, Proceedings of SPIE, The Int. Soc. Opt. Eng. 5352, 77-89 (2004).
23. *SNOM Characterization of Self-Assembled Organic Nanocrystals.*
P.D. Lacharmoise, J.O. Ossó, A.R. Goñi, M.I. Alonso, M. Garriga, E. Barrena, D.G. de Oteyza, and H. Dosch, Proc. 28th Int. Conf. Phys. Semicond. (ICPS), Vienna, Austria, July 2006, eds. W. Jantsch and F. Schäffler, AIP Conf. Proc. **893**, 337 (2007).

24. *Nature of the Optical Transition in (In,Ga)As(N)/GaP Quantum Dots (QDs): Effect of QD Size, Indium Composition and Nitrogen Incorporation.*
C. Robert, C. Cornet, K. Pereira da Silva, P. Turban, S. Mauger, T. Nguyen Thanh, J. Even, J.M. Jancu, M. Perrin, H. Folliot, T. Rohel, S. Tricot, A. Balocchi, P. Barate, X. Marie, P.M. Koenraad, M.I. Alonso, A.R. Goñi, N. Bertru, O. Durand, and A. Le Corre, Proc. 25th Int. Conf. Indium Phosphide and Related Materials (IPRM), Kobe, Japan, May 2013, IEEE Conf. Proc. (2013). DOI: 10.1109/ICIPRM.2013.6562587
25. *Retrieving the Spatial Distribution of Cavity Modes in ZnO Nanowires by Near-Field Imaging and Electrodynamics Simulations.*
F. Güell, A. R. Goñi, J. O. Ossó, L. A. Pérez, E. A. Coronado, and J. R. Morante, Proc. Int. Conf. on Lasers and Electro-Optics Europe & Int. Quantum Electronics Conference (CLEO/Europe-IQEC), Munich, Germany, May 2013, IEEE Conf. Proc. (2013). ISBN: 978-1-4799-0594-2.
26. *Composition Dependent Nature of the Fundamental Optical Transition in (In,Ga)As/GaP Quantum Dots.*
C. Robert, C. Cornet, T. Nguyen Thanh, M.O. Nestoklon, K. Pereira da Silva, M.I. Alonso, A.R. Goñi, S. Tricot, P. Turban, M. Perrin, H. Folliot, T. Rohel, L. Pedesseau, J.-M. Jancu, J. Even, S. Mauger, P.M. Koenraad, A. Balocchi, P. Barate, X. Marie, N. Bertru, A. Le Corre, and O. Durand, Proc. 26th Int. Conf. Indium Phosphide and Related Materials (IPRM), Montpellier, France, May 2014, IEEE Conf. Proc. (2014). DOI: 10.1109/ICIPRM.2014.6880555

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1. *A Dimerised Kronig-Penney Model.*
A. R. Goñi, A. G. Rojo, and E. N. Martínez; Am. J. Phys. **54**, 1018 (1986).
2. *Diffraction of Low-Energy Ion-Induced Secondary Electrons Emitted in the Forward Direction from a Solid Foil.*
A.R. Goñi, S. Suárez, P. Focke, G.C. Bernardi, and W. Meckbach; Phys. Rev. Lett. **57**, 1584 (1986).
3. *Effects of the Wannier Ridge on Secondary Electron Spectra in Proton-Helium Collisions.*
W. Meckbach, P. Focke, A. R. Goñi, and S. Suárez; J. Macek and M. G. Menéndez; Phys. Rev. Lett. **57**, 1587 (1986).
4. *Ion-Induced Ridge-Electrons and their Diffraction in Solid Foil Targets.*
A. R. Goñi, W. Meckbach, S. Suárez, P. Focke, and G.C. Bernardi; Z. Phys. D -Atoms, Molecules and Clusters **4**, 253 (1987).
5. *Do Solid Surface Potential Barriers Retard Convoy-Peak-Electrons?*
S. Suárez, A.R. Goñi, W. Meckbach, and P. Focke; Z. Phys. D. -Atoms, Molecules and Clusters **6**, 55 (1987).

6. *Pressure Dependence of Direct and Indirect Optical Absorption in GaAs.*
A. R. Goñi, K. Ströbner, K. Syassen, and M. Cardona; Phys. Rev. B **36**, 1581-1587 (1987).
7. *Calculated Convoy-Electron Distributions due to Electron Loss Collisions inside Solid Targets.*
R.O. Barrachina, A.R. Goñi, P. Focke, and W. Meckbach; Nucl. Instr. Meth. B **33**, 330 (1988).
8. *Effects of Pressure on the Optical Absorption in GaP and Ga_xIn_{1-x}P (x = 0.36 and 0.5).*
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9. *Direct Band Gap Absorption in Germanium under Pressure.*
A.R. Goñi, K. Syassen, and M. Cardona; Phys. Rev. B **39**, 12 921 (1989).
10. *Pressure Dependence of Direct Band Gaps and Refractive Index of Ge and GaAs.*
A.R. Goñi, K. Ströbner, K. Syassen, and M. Cardona; Semicond. Sci. Technol. **4**, 246 (1989).
11. *High-Pressure Low-Temperature Study of the Exciton Absorption in GaAs.*
A.R. Goñi, A. Cantarero, K. Syassen, and M. Cardona; High Pressure Res. **3**, 81 (1990).
12. *Effect of Pressure on the Refractive Index of Ge and GaAs.*
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13. *Effect of Pressure on the Low-Temperature Excitonic Absorption in GaAs.*
A.R. Goñi, A. Cantarero, K. Syassen, and M. Cardona; Phys. Rev. B **41**, 10111-10119 (1990).
14. *Large Optical Singularities of the Electron Gas in Semiconductor Quantum Wires.*
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15. *One-Dimensional Plasmon Dispersion and Dispersionless Intersubband Excitations in GaAs Quantum Wires.*
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16. *Structural Phase Transition and Electronic Properties of InSe under Pressure.*
U. Schwarz, A.R. Goñi, K. Syassen, and A. Chevy; High Pressure Res. **8**, 396 (1991).
17. *Low-Temperature Exciton Absorption in InSe under Pressure.*
A.R. Goñi, A. Cantarero, U. Schwarz, K. Syassen, and A. Chevy; Phys. Rev. B **45**, 4221 (1992).

18. *Pressure Dependence of the Exciton Absorption and the Electronic Subband Structure of a $Ga_{0.47}In_{0.53}As/Al_{0.48}In_{0.52}As$ Multiple-Quantum-Well System.*
A.R. Goñi, K. Syassen, Y. Zhang, K. Ploog, A. Cantarero, and A. Cros; Phys. Rev. B **45**, 6809 (1992).
19. *Optical Singularities of the One-Dimensional Electron Gas in Semiconductor Quantum Wires.*
J.M. Calleja, A.R. Goñi, B.S. Dennis, J.S. Weiner, A. Pinczuk, S. Schmitt-Rink, L.N. Pfeiffer, K.W. West, J.F. Müller, and A.E. Ruckenstein; Surf. Sci. **263**, 346 (1992).
20. *Observation of Quantum Wire Formation at Intersecting Quantum Wells.*
A.R. Goñi, L.N. Pfeiffer, K.W. West, A. Pinczuk, H.L. Stormer, and H.U. Baranger; Appl. Phys. Lett. **61**, 1956-1958 (1992).
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