

GUILLERMO F. QUINTEIRO  
 Departamento de Física  
 Universidad de Buenos Aires  
 Argentina  
 email: gquinteiro@df.uba.ar  
 http://www.df.uba.ar/users/gquinteiro

## EDUCATION

- Ph.D. in Physics. Michigan State University - USA, 2006.
- Master of Science - Physics. Michigan State University, USA, 2004.
- Licenciatura en Física. Universidad de Buenos Aires, Argentina, 2000.

## ACADEMIC EXPERIENCE

### Research Interests

- Semiconductors physics
- Quantum optics
- Quantum computing

### Research Positions

- Departamento de Fisica, Universidad de Buenos Aires, Argentina. Research associate. March 2009-Present.
- Departamento de Fisica, Universidad de Buenos Aires, Argentina. Postdoctoral Fellow. April 2008- March 2009.
- Instituto de Ciencias, Universidad Nacional de Gral. Sarmiento, Argentina. Research Associate, September 2007- December 2007.
- Departamento de Fisica, Universidad de Buenos Aires, Argentina. Postdoctoral Fellow. December 2006-August 2007.
- Michigan State University, USA. Graduate student (full-time research scholarship), 2003-2006.
- Universidad Nacional de Buenos Aires and Comision Nacional de Energia Atomica, Argentina. Graduate student (full-time research scholarship), 2000-2002.
- Comision Nacional de Energy Atomica, Argentina. Undergraduate student (full-time research scholarship), 1997-2000.

### Research visits

- Institut für Festkörpertheorie, Westfälische Wilhelms-Universität, Münster, Germany May 2011. 1 week stay in Prof. Tilmann Kuhn's group.
- Instituto Balseiro, Bariloche Argentina Marzo 2011. 1 week stay in Prof. Armando Aligia's group.
- Martin Luther Universität, Halle - Germany, Sept 15th 2010 - Dec 15th 2010. Three months stay in Prof. Jamal Berakdar's group.

- Martin Luther Universität, Halle - Germany, April 15th 2009 - July 15th 2009. Three months stay in Prof. Jamal Berakdar's group.
- National Research Council of Canada, Ottawa - Canada, January 2008 - March 2008. Two months stay in Prof. Pawel Hawrylak's group.
- Laboratório Nacional de Luz Sincrotron, Campinas - Brazil, September 2007. One week visit in Prof. Gilberto Madeiros' group.
- Universidad de Alicante, Alicante - Spain, May 2006. One month stay in Prof. Joaquin Fernandez-Rossier's group.

## Publications

- J. A. Andrade Hoyos, A. A. Aligia, and G. F. Quinteiro, Spin-spin indirect interaction at low energy excitation in zero-dimensional cavities, *J. Phys.: Condens. Matter* 23 (2011) 215304.
- G. F. Quinteiro, A O Lucero and P I Tamborenea, Electronic transitions in quantum dots and rings induced by inhomogeneous off- centered light beams, *J. Phys.: Condens. Matter* 22 (2010) 505802.
- G. F. Quinteiro, Below-bandgap excitation of bulk semiconductors by twisted light, *EPL* Volume 91, Number 2, July 2010.
- G. F. Quinteiro and P. I. Tamborenea Twisted-light-induced optical transitions in semiconductors: Free-carrier quantum kinetics, *Phys. Rev. B* 82, 125207 (2010).
- G. F. Quinteiro, J. Berakdar Electric currents induced by twisted light in Quantum Rings . *Opt. Express* 17, 20465-20475 (2009).
- G. F. Quinteiro, P. I. Tamborenea Electric currents induced by twisted light in bulk semiconductors . CLEO/Europe - EQEC 2009 - European Conference on Lasers and Electro-Optics and the European Quantum Electronics Conference , art. no. 5192760 (2009).
- G. F. Quinteiro, P. I. Tamborenea, Electronic transitions in disk-shaped quantum dots induced by twisted light. *Phys. Rev. B* 79, 155450 (2009).
- G. F. Quinteiro and P. I. Tamborenea, Theory of the optical absorption of light carrying orbital angular momentum by semiconductors, *Europhysics Letters*, 85 (2009) 47001.
- G. F. Quinteiro, Donor-donor interaction mediated by cavity-photons and its relation to interactions mediated by excitons and polaritons, *Phys. Rev. B* 77, 075301 (2008).
- C. Piermarocchi, G. F. Quinteiro, J. Fernandez-Rossier, Long-range spin-qubit interaction in planar microcavities, *Proceedings of the Quantum Electronics and Laser Science Conference* (2007).
- G. F. Quinteiro, J. Fernandez-Rossier, C. Piermarocchi, Long-range spin-qubit interaction mediated by microcavity polaritons, *Phys. Rev. Letters* 97, 97401 (2006).
- G. F. Quinteiro, C. Piermarocchi, Entanglement and errors in the control of spins by optical coupling. *Phys. Rev. B* 72, 045334 (2005).
- C. Piermarocchi, G. F. Quinteiro, Coherent optical control of spin-spin interaction in doped semiconductors. *Phys. Rev. B* 70, 235210 (2004).
- G. Quinteiro. Beam Optimization: Improving Methodology. *Annals of Nuclear Energy* 31 (2004) pp. 399-411.

- G. Quinteiro, R. Calabrese. Characterization and Optimization Analysis of a BNCT Biological Facility. *Annals of Nuclear Energy* 29/15 (2002) pp. 1779-1794.
- G. Quinteiro, Study of kinetic parameters in the RA-4 reactor by means of computational modeling and neutron noise measurements. *Annals of Nuclear Energy* 28 (2001) pp. 913-921.
- G. Quinteiro, H. Corti, M. Marconi. Diffusion in aqueous solutions containing disaccharides using laser techniques (2001). *Proceedings of the SPIE*, Vol SPIE 4419, 244.
- G. Quinteiro, R. Calabrese. Modeling of the RA-1 Reactor Using a Monte Carlo Code. (2000) *Proceedings of the Asociacion Argentina de Tecnologia Nuclear*.
- C. Calabrese, H. Scolari, C. Grizutti, J. Castillo, G. Quinteiro, F. Cantargi. Thermal Facility for BNCT in the RA1 Argentine Research Reactor. *Proceedings of the International Symposium on Research Reactor Utilization, Safety and Management*, (1999) IAEA-SM-360/4P.

### **Teaching and Tutoring**

- Tutoring of a visiting student in collaboration with Prof. Pablo Tamborenea at Universidad de Buenos Aires - Argentina, August 2010.
- Tutoring of a PHD student in collaboration with Prof. Pablo Tamborenea at Universidad de Buenos Aires - Argentina, September 2008 - September 2010.
- Instructor. Departamento de Física, Universidad de Buenos Aires - Argentina, August 2007 - Present.
- Instructor. Instituto de Ciencias, Universidad Nacional de Gral. Sarmiento - Argentina, September 2007 - December 2007.
- Tutoring of an undergraduate student in collaboration with Prof. Piermarocchi at Michigan State University - USA, Summer 2004.
- Graduate Teaching Assistant. Department of Physics and Astronomy, Michigan State University - USA, 2002-2003.
- Tutoring of two undergraduate students in collaboration with Prof. Buera and Prof. Corti at Universidad de Buenos Aires - Argentina, Spring 2002.
- Graduate Teaching Assistant. Physics Department. Universidad de Buenos Aires - Argentina, 2001-2002.
- Student Teaching Assistant. Physics Department. Universidad de Buenos Aires - Argentina, 2000-2001.

### **International Schools**

- Manipulating Quantum Coherence in Solid State Systems, Cluj Napoca - Romania, September 2005.
- Semiconductor Quantum Dots: Physics and Devices, Ascona - Switzerland, August 2004.
- Modern Challenges in Statistical Mechanics PASI, Bariloche - Argentina, July 2002.
- Modeling of Biological Systems, MBL Woods Hole, MA - USA, March - May 2000.
- El Leoncito School on Solar Physics MPE-MPAE-OAFA-IAFE; El Leoncito, San Juan - Argentina, February 2000.

## Conferences and Talks

- Invited talk at Institut für Festkörpertheorie, Westfälische Wilhelms-Universität, Münster, Germany May 2011.
- Invited talk at Instituto Balseiro, Bariloche Argentina Marzo 2011.
- The 23rd General Conference of the Condensed Matter Division of the European Physical Society, Warsaw Sept 2010.
- SOLIDOS'09, Valparaiso, Chile, November 2009.
- European Conference on Lasers and Electro-Optics and the XIth European Quantum Electronics Conference (CLEO/Europe-EQEC), Munich - Germany, 2009.
- Invited talk at National Research Council of Canada Ottawa - Canada, February 2008.
- Coherent Spintronics Workshop, Waterloo University, Waterloo - Canada, January 2008.
- Invited talk at Laboratrio Nacional de Luz Sincrotron, Campinas - Brazil, September 2007.
- Invited talk at the Max-Planck-Institut für Mikrostrukturphysik - Germany, 2006.
- Invited talk at the Universidad de Alicante - Spain, 2006.
- Manipulating Quantum Coherence in Solid State Systems, Cluj Napoca - Romania, 2005.
- Invited talk at the University of Michigan - USA, 2004.
- Semiconductor Quantum Dots: Physics and Devices, Ascona - Switzerland, 2004.
- APS March Meeting 2004, Montreal - Canada, 2004.
- XII Congreso Argentino de Fisicoquímica y Química Inorgánica, San Martín de los Andes - Argentina, 2001.
- Asociación Argentina de Tecnología Nuclear, Buenos Aires - Argentina, 2000.
- International Symposium on Research Reactor Utilization, Safety and Management, Lisbon - Portugal, 1999.
- Asociación Argentina de Tecnología Nuclear, Buenos Aires - Argentina, 1998.
- Asociación Física Argentina, La Plata - Argentina, 1998.
- Asociación Física Argentina, San Luis - Argentina, 1997.

## AWARDS

- Fulbright fellowship, USA 2011.
- DAAD fellowship, Germany 2010.
- DAAD fellowship, Germany 2009.
- Student Award and fellowship by Ministerio Nacional de Educación, Argentina 1997.

## OTHERS

**Patents** #AR059047B4 "Exprimidor de limon a membrana permeable" Granted by the Argentine government, 2010.

**Referee** Phys. Rev. Letters, Phys. Rev. A and B.

**Language** Spanish: Native / English: Fluent / German: gut reading - gut conversation / French: basic reading

**Computer coding** Fortran / C / Visual Basic / MCNP / Mathematica.