Curriculum Vitae

Carlo PIERMAROCCHI, Ph.D.
Dept of Physics and Astronomy
Michigan State University
4263 Biomedical Physical Sciences
East Lansing, MI 48824

E-mail:piermaro@msu.edu
Tel.: +1 (517) 844 56 31
Fax: +1 (517) 353 45 00
http://www.pa.msu.edu/~carlo

Education	1998: Ph. D. in Theoretical Physics, Swiss Federal Institute of Technology (EPFL) Lausanne, Switzerland
	1994: *Laurea* Degree in Physics (110/110 *summa cum laude*), University of Pisa, Italy
	1988: Maturità Classica (60/60), Liceo Ginnasio A. Caro, Fermo, Italy
Research Interests and Activity	Condensed Matter Theory, Quantum Optics, Quantum Information, Control Theory in Quantum and Biological Systems
	75 publications in international journals, conference proceedings, and book chapters (1995-2012), 3173 citations (Google-citations), h-factor: 25
Appointments	2007-Present: Associate Professor of Physics, Michigan State University, East Lansing, MI
	2005-2006: Donald D. Harrington Visiting Faculty Fellow at the University of Texas at Austin, TX
	2002-2007: Assistant Professor of Physics, Michigan State University, East Lansing, MI
	1999-2002: Research Assistant in the group of Prof. L.J. Sham, University of California, San Diego, CA
Awards and Fellowships	2005/2006 Donald D. Harrington Faculty Fellowship at the University of Texas, Austin
	2003/2004 Lilly Teaching Fellowship for excellence in teaching. Project: Learning by problem solving
	2004 Thomas H. Osgood Memorial Faculty Teaching Award
	1999-2000 Swiss NSF Research Fellowship
Professional Activities	Co-organizer (with Prof. C.K. Shih, UT) of a Harrington Symposium on *Solid State Cavity Quantum Electrodynamics* in Austin, Texas (2006)
	Member of the Program Committee for the Quantum Electronics and Laser Science Conference (QELS) 2006, 2007, 2008 (Chair of the sub-committee on “Optical interactions with condensed matter and ultrafast phenomena)
	Panelist and reviewer for the NSF
Graduate Students, Undergraduate	G. F. Quinteiro Rosen (PhD Degree in 2006, currently Assistant Professor at the University of Buenos Aires, Argentina)
	M. V. Katkov (Ph.D. Degree in 2006, currently research associate at the

Students, and Research Associates	University of the Witwatersrand, Johannesburg, South Africa)
	E. M. Kessler (Masters Degree in 2007, currently PhD Student at the Max Planck Institute for Quantum Optics, Garching, Germany)
	Y. V. Pershin (research associate 2004-2006, currently Assistant Professor University of South Carolina)
	M. Grochol (research associate, 2007-2009, currently Software Engineer at Itk-engineering, Munich, Germany)
	M. Schuetz (Masters Degree in 2009, currently PhD Student at the Max Planck Institute for Quantum Optics, Garching, Germany)
	K. Xu (graduate student, 2007-present)
	REU Students supervised: A. Snow (2009), K. J. Wickey (2006), S. Cooper (2004)
	Undergraduate research projects: C. Harris (2010), T. Evans (2006), I. Wells (2011)
Research Grants	DOD CDMRP "Attractor Signaling Models for Discovery of Combinatorial Therapies" 09/30/12-09/29/13 ($108K role: PI)
	MSU CDFP "Quantum phases of light and Matter in Artificial Semiconductor Lattices" 12/1/09-6/30/2011 ($60K role: PI)
	NSF EMT-0829891 "The control landscape of selective cell death" 9/01/08-8/31/11 ($900K, role: co-PI)
	NSF DMR-0605801 "Information processing in doped semiconductors" 9/15/06-8/31/09 ($318K, role: PI)
	NSF OISE-0605801 International US-Greece research and education collaboration 9/15/06-8/31/09 ($12K, role: PI)
	NSF ITR-0312491 "Information processing in doped semiconductors" 8/1/03 to 7/31/06 ($291K, role:PI)
Teaching Activity	Spring 2011 Thermal and Statistical Physics, MSU
	Fall 2010, 2011 Advanced Condensed Matter (graduate level), MSU
	Spring 2007, 2008, 2009, 2010 Solid State Physics (graduate level), MSU
	Fall 2006, 2007 and 2008, 2009 Atomic, Molecular, and Solid State Physics, MSU
	Fall 2003 and 2004 Optics, MSU
	Spring 2003 and 2004 Introductory physics with calculus, MSU
	1999-2002 Assistant in Advanced Quantum Mechanics, UCSD
	1998-1999 Assistant in Quantum Mechanics, EPFL, Switzerland
	1995-1998 Assistant in Classical Mechanics, EPFL, Switzerland
Outreach	**"**Physics is fun!" presentation for the Montessori Center in East Lansing, MI, May 2007 and May 2010.
Conferences	Invited speaker at the *Indo-US-Canadian Advanced School on Quantum and Nano Computing Systems and Application*, at the Dayalbagh

and Workshops (Invited)

Educational Institute, Agra, India, December 2009

Invited speaker at the meeting on *Communication and Control in Biology and Engineering* organized by ISSNAF *(*Italian Scientists and Scholars in North America Foundation*);* La Jolla, California, November 2009

Invited speaker at the Workshop on *Nonequilibrium nanostructures* at the Max-Planck Institute for the Physics of Complex systems in Dresden, Germany, December 2008

Invited Speaker at Symposium on *Advanced Optical Concepts in Quantum Computing, Memory, and Communication*" as part of Photonics West, San Jose, California, January 2008

Invited Speaker at Workshop on *Fundamental Optical Properties in Semiconductors,* Big Sky, Montana, July 2007

Invited Speaker at the Harrington Symposium on *Solid State Cavity Quantum Electrodynamics* in Austin, Texas, October 2006

Invited speaker at the Workshop on *Non-equilibrium dynamics in Interacting Systems* at the Max-Planck Institute for the Physics of Complex systems in Dresden, Germany, April 2006

Invited speaker at the *Donald D. Harrington Symposium*, Amarillo, Texas, April 2006

Invited Speaker at the Korean Magnetics Society Conference on *Quantum Computing and Spintronics* in YongPyung, Korea, December 2004

Invited speaker at the *Optical Society of America IQEC04* meeting in San Francisco California, May 2004

Invited speaker at the SPIE Conference on *NOISE AND INFORMATION IN NANOELECTRONICS, SENSORS AND STANDARDS* in Gran Canaria, Spain, May 2004

Invited speaker at the *XXXIII Winter Colloquium of Quantum Electronics*, Snowbird, Utah, January 2003

Invited speaker at the International School of Physics "Enrico Fermi", Varenna, Italy, on *"Electron and Photon Confinement in Semiconductor Nanostructures",* Varenna, Italy, July 2002

Invited speaker at the Conference on *Control and its Application* organized by the Society for Industrial and Applied Mathematics (SIAM),San Diego, California, July 2001

Invited speaker at the American Physical Society March Meeting on Condensed Matter Physics ,Seattle, Washington, March 2001

Invited speaker at the Symposium on Microcavities: *Quantum Electrodynamics and Devices*, Loveno, Italy, May 1998

Contributed talks to many international conferences in Switzerland, Germany, Italy, USA, Japan, Israel

Invited Seminars and Colloquia

September 30th 2011 University of Michigan-Dearborn, Department of Natural Sciences, Colloquium: Optical lattices in semiconductors

April 27th 2011 University of South Carolina, Department of Physics, Colloquium: Optical potentials in semiconductor materials

April 4th 2011, Oregon Center for Optics, University of Oregon, Seminar:

Optical lattices for carriers and excitons in semiconductors

June 22nd 2010, Institut des Nanosciences de Paris, Paris VI, France, Seminar: Optical Potentials for Carriers in Semiconductors

December 21st 2009, Jawaharlal Nehru University, School of Physical Sciences, Seminar: Optical Quantum Control of Excitons and Spins in Semiconductor Quantum Dots

June 18th 2009, Ecole Normale Superieure de Cachan, Paris, France, Seminar, Quantum control of spins and excitons in semiconductors quantum dots

February 10 2009, University of Michigan, Condensed Matter and AMO Seminar, Spins and excitons in quantum dot lattices.

November 10 2008, Ohio State University. Condensed Matter Theory Seminar, Quantum control of spins in semiconductor quantum dots.

July 11,14 and 15 2008 University of Pisa Italy, Lecture series at the School of Graduate Studies "Galileo Galilei", Quantum computation with spins and excitons in semiconductor quantum dots.

March 27 2008 Michigan State University, Seminar at Center for Nanomaterials Design and Assembly, Introduction to excitons and their role in photovoltaic processes

Oct 1 2007 Virginia Polytechnic and State University, Condensed Matter Physics Seminar, Cavity Quantum Electrodynamics and Quantum Computing Architectures

Oct 16 2006 Michigan State University, MI, Physics Colloquium, Cavity Quantum Electrodynamics and Quantum Computing Architectures

Oct 13 2006 Michigan State University, Science at the Edge Interdisciplinary Seminar, Optical Quantum Control of Spin interaction in Nanostructures

Sept 6 2005 University of Texas, Austin, TX, Condensed Matter Physics Seminar, Controlling semiconductor nano-systems with photons

March 17 2005 Oakland University, Rochester, MI, Physics Colloquium, Optical quantum control in semiconductors nano-system

April 1 2004 Central Michigan University, Mount Pleasant MI, Physics Colloquium, Optical quantum control of localized spins in semiconductors.

Sept 22 2003 Michigan State University, East Lansing MI, Condensed Matter Physics Seminar, Quantum control in semiconductor nanostructures.

Sept 8 2003 University of Texas, Austin TX, Condensed Matter Physics Seminar, Quantum control of excitons and spins in semiconductors

Dec 18 2002 University of Michigan, Ann Arbor MI, Seminar, Quantum control of spins and excitons in semiconductors

Apr 10 2002 California State University, Northridge CA, Condensed Matter Physics Seminar, Optical quantum control in semiconductor nanodots

Mar 25 2002 Purdue University, West Lafayette IN, Condensed Matter Physics Seminar, Optical quantum control in semiconductor nanodots

Mar 12 2002 Rice University, Houston TX, Electrical and Computer Engineering Colloquium, Optical quantum control in semiconductor

nanodots

Feb 21 2002 Michigan State University, East Lansing MI, Condensed Matter Physics Seminar, Optical quantum control in semiconductor nanodots

Feb 18 2002 State University of New York, Buffalo NY, Condensed Matter Physics Seminar, Optical quantum control in semiconductor nanodots

Feb 6 2002 University of California, San Diego CA, Condensed Matter Physics Seminar, Optical quantum control in semiconductor nanodots

Jan 31 2002 NASA Ames Research Center, Moffet Field CA , Seminar, Optical quantum control in semiconductor nanodots

Jan 24 2002 McGill University, Montreal Canada, Physics Colloquium, Optical quantum control in semiconductor nanodots

Jan 24 2001 University of California San Diego, La Jolla, CA, Condensed Matter Physics Seminar, Ultrafast optical control of spin-excitons in quantum dots: application to Quantum Computing

May 31 2000 University of California San Diego, La Jolla CA, Condensed Matter Physics Seminar, Dressing excitons with light: from micro-cavities to quantum dots

May 10 1999 Condensed Matter Physics Seminar, University of Modena, Modena Italy

Full publication list

1. J. D. Feala, J. Cortes, P. M. Duxbury, A. D. McCulloch, C. Piermarocchi, and G. Paternostro, *Statistical Properties and Robustness of Biological Controller-Target Networks*. PLoS ONE 7, e29374 (2012).
2. Yu. Gladush Yu, C. Piermarocchi, and V. Agranovich, *Dynamics of excitons and free carriers in hybrid organic-inorganic quantum well structures*, Phys. Rev. B 84, 205312 (2011).
3. C. Piermarocchi, *Materials spectroscopy: What would Schrödinger's cat see?*, Nature Physics 7, 746 (2011).
4. K. J. Xu and C. Piermarocchi, *Dynamics of elastic and inelastic energy transfer between quantum dots in a microcavity*, Phys. Rev. B 84, 115316 (2011).
5. M. D. Kapetanakis, P. C. Lingos, C. Piermarocchi, J. Wang, and I. E. Perakis, *All-optical four-state magnetization reversal in (Ga,Mn)As ferromagnetic semiconductors*, Appl. Phys. Lett. 99, 091111 (2011).
6. M. Combescot, M. G. Moore, and C. Piermarocchi, *Optical Traps for Dark Excitons*, Phys. Rev. Lett. 106, 206404 (2011).
7. M. Combescot, M. G. Moore, and C. Piermarocchi, *Optical traps for electrons produced by Pauli blocking*, Europhys. Lett. 4, 47012 (2011).
8. M. J. A. Schuetz, M. G. Moore, and C. Piermarocchi*, Trionic Optical Potential for Electrons in Semiconductors*, Nature Physics 6, 919, (2010).
9. M. Grochol, E. M. Kessler, and C. Piermarocchi, *Exciton and Spin Coherence in Quantum Dot Lattices*, in G. Slavcheva and P. Roussignol (eds.), *Optical Generation and Control of Quantum Coherence in Semiconductor Nanostructures*, NanoScience and Technology 146, 181, Springer-Verlag Berlin Heidelberg (2010)

10. J. D. Feala, J. Cortes, P. M. Duxbury, C. Piermarocchi, A. D. McCulloch, and G. Paternostro, *Systems approaches and algorithms for discovery of combinatorial therapies*, Wiley Interdisciplinary Reviews: Systems Biology and Medicine 2, 127 (2010).
11. M. D. Kapetanakis, I. E. Perakis, K. J. Wickey, C. Piermarocchi, and J. Wang, *Femtosecond coherent control of spins in (Ga,Mn)As ferromagnetic semiconductors using light*, Phys. Rev. Lett. 103, 047404 (2009).
12. K. J. Xu, Y. P. Huang, M. G. Moore, and C. Piermarocchi, *Two-Qubit Conditional Phase Gate in Laser-Excited Semiconductor Quantum Dots Using the Quantum Zeno Effect*, Phys. Rev. Lett. 103, 037401 (2009)
13. M. Grochol and C. Piermarocchi, *Multi-spin errors in the optical control of a spin quantum lattice,* Phys. Rev. B 78, 165324 (2008).
14. S. H. Tessmer ,I. Kuljanishvili, C. Kayis, J. F. Harrison, C. Piermarocchi, and T. A. Kaplan, *Nanometer-scale capacitance spectroscopy of semiconductor donor molecule (review paper),*Physica B 403, 3774 (2008).
15. M. Grochol and C. Piermarocchi, *Microcavity polaritons in disordered exciton lattices*, Phys. Rev B 78 035323 (2008).
16. I.Kuljanishvili, C. Kayis, J. F. Harrison, C. Piermarocchi, T. A. Kaplan, S. H. Tessmer, L. N. Pfeiffer, K. W. West, *Scanning-probe spectroscopy of semiconductor donor molecules*, Nature Physics 4 227, doi:10.1038/nphys855 (2008).
17. E. M. Kessler, M. Grochol, and C. Piermarocchi, *Light-mass Bragg cavity polaritons in planar quantum dot lattices*, Phys. Rev. B. 77, 085306 (2008).
18. D. Calzolari, G. Paternostro, P. L. Harrington Jr., C. Piermarocchi, and P. M. Duxbury, *Selective control of the apoptosis network in heterogeneous cell populations*, PLoS ONE 2(6): e547, (2007).
19. Y. V. Pershin and C. Piermarocchi, *Radiation-induced current in quantum wires with side-coupled nanorings,* Phys. Rev. B 75, 035326 (2007).
20. M. V. Katkov, Y. V. Pershin, and C. Piermarocchi, *Theory of cavity-polariton self-trapping and optical strain in polymer chains*, Phys. Rev. B 74, 224306 (2006).
21. G. Quinteiro Rosen, J. Fernández-Rossier, and C. Piermarocchi, *Long-range spin-qubit interaction mediated by microcavity polaritons,* Phys. Rev. Lett. 97, 097401 (2006).
22. A.Muller, P. Bianucci, C. Piermarocchi, M. Fornari, I. C. Robin, R. André and C. K. Shih, *Time-resolved photoluminescence spectroscopy of individual Te impurity centers in ZnSe*, Phys. Rev. B 73, 081306 (R) (2006).
23. M. V. Katkov and C. Piermarocchi, *Coherent control of lattice deformations in quantum wires by optical self-trapping,* Phys. Rev. B 73, 033305 (2006).
24. Y. V. Pershin and C. Piermarocchi, *Photovoltaic effect in bent quantum wires in the ballistic transport regime,* Phys. Rev B 72,195340 (2005).
25. B. Deveaud, L. Kappei. J. Berney, F. Morier-Genoud, M. T. Portella-Oberli, J. Szczytko, and C. Piermarocchi, *Excitonic effects in the*

luminescence of quantum wells, Chem. Phys. 318, 104 (2005).

26. A.Fedorov, Y. V. Pershin and C. Piermarocchi, *Spin-photovoltaic effect in quantum wires due to inter-subband transitions*, Phys. Rev. B, 72 245327 (2005).
27. Y. V. Pershin and C. Piermarocchi, *Persistent and radiation-induced currents in distorted quantum rings*, Phys. Rev. B 72, 125348 (2005).
28. G. F. Quinteiro and C. Piermarocchi, *Entanglement and errors in the control of spins by optical coupling*, Phys. Rev. B 72, 045334 (2005).
29. Y. V. Pershin and C. Piermarocchi, *Spin photovoltaic effect in quantum wires with Rashba interaction*, Applied Physics Letters 86, 212107 (2005).
30. Y. V. Pershin and C. Piermarocchi, *Laser-controlled local magnetic field with semiconductor quantum rings*, Phys. Rev. B 72, 245331 (2005).
31. Q. Q. Wang, A. Muller, P. Bianucci, E. Rossi, Q. K. Kue, T. Takagahara, C. Piermarocchi, A. H. MacDonald, and C. K. Shih, *Decoherence processes during active manipulation of excitonic qubits in semiconductor quantum dots*, Phys. Rev. B, 72 035306 (2005) .
32. C. Piermarocchi and G. F. Quinteiro, *Coherent optical control of spin-spin interaction in doped semiconductors*, Phys. Rev. B 70, 235210 (2004).
33. T. A. Kaplan and C. Piermarocchi, *Spin swap versus double occupancy in quantum gates*, Phys. Rev. B 70, 161311(R) (2004).
34. J. Fernández-Rossier, C. Piermarocchi, Pochung Chen, A. H. MacDonald, and L. J. Sham, *Coherently photo-induced ferromagnetism in diluted magnetic semiconductors*, Phys. Rev. Lett. 93, 127201 (2004).
35. C. Piermarocchi, *Optical quantum control of localized spins in semiconductors*, in Noise and Information in Nanoelectronics, Sensors, and Standards II, Proceedings of SPIE vol. 5472 (SPIE, Bellingham, WA, 2004) p. 36.
36. P. Bianucci, A. Muller, C. K. Shih, Q. Q. Wang, X. K. Xue, C. Piermarocchi, *Experimental realization of the one qubit Deutsch-Jozsa algorithm in a quantum dot*, Phys. Rev. B 69, 161303 (R) (2004).
37. Pochung Chen, C. Piermarocchi, L. J. Sham, D. Gammon, and D. G. Steel, *Theory of Quantum Optical Control of Single Spin in a Quantum Dot*, Phys. Rev. B 69 075320 (2004).
38. X. Li, Y. Wu, D. G. Steel, D. Gammon, T. H. Stievater, D. S. Katzer, D. Park, L. J. Sham, and C. Piermarocchi, *An all-optical quantum gate in a semiconductor quantum dot*, Science 301, 809 (2003).
39. C. Piermarocchi, Pochung Chen, L. J. Sham, and D. G. Steel, *Quantum Control of Spins and Excitons in Semiconductor Quantum Dots*, in Proceedings of the International School of Physics "Enrico Fermi", Course CL, edited by B. Deveaud, A. Quattropani, and P. Schwendimann, Vol. 150 (IOS Press, Amsterdam, 2003) pp. 289-302.
40. Gang Chen, T. H. Stievater, J. R. Guest, D. G. Steel, D. Gammon, Pochung Chen, C. Piermarocchi, and L. J. Sham, *Coherent Optical Spectroscopy and Manipulation of Single Quantum Dots*, in Quantum Coherence, Correlation, and Decoherence in Semiconductor Nanostructures, T. Takagahara (Ed.) Academic Press, San Diego 2003.
41. C. Piermarocchi, Pochung Chen, L. J. Sham, and D. G. Steel, *Optical*

RKKY Interaction between Charged Semiconductor Quantum Dots, Phys. Rev. Lett. 89,167402 (2002).

42. C. Piermarocchi, Pochung Chen, Y. S. Dale, and L. J. Sham, *Theory of Fast Quantum Control of Excitons Dynamics in Semiconductor Quantum Dots*, Phys. Rev. B 65, 075307 (2002).
43. C. Piermarocchi, *Theory of efficient quantum control in a single semiconductor quantum dot*, in Radiation Matter interaction in confined Systems, Società Italiana di Fisica, Bologna (2002).
44. F. Tassone and C. Piermarocchi, *Optical signatures of bound pairs in highly excited semiconductors: excitonic gain and high-density emission bands*, in Electrons and Photons in Solids, a Volume in Honor of Franco Bassani, Quaderni della Scuola Normale Superiore, Pisa 2001.
45. T. H. Stievater, X. Li, D. G. Steel, D. Gammon, D. S. Katzer, D. Park, C. Piermarocchi, and L. J. Sham, *Rabi Oscillations of Excitons in Single Quantum Dots*, Phys. Rev. Lett. 87, 133603 (2001).
46. Pochung Chen, C. Piermarocchi, L. J. Sham, *Control of Spin Dynamics of Excitons in Nanodots for Quantum Operations*, Phys. Rev. Lett. 87, 067401 (2001).
47. Pochung Chen, C. Piermarocchi, L. J. Sham, *Theory of Optical Control of Exciton Spin Dynamics in a Semiconductor Dot*, Physica E 10, 7 (2001).
48. C. Piermarocchi, F. Tassone, *Role of bound pairs in the optical properties of highly excited semiconductors: a self consistent ladder approximation approach*, Phys. Rev. B 63, 245308 (2001).
49. C. Piermarocchi, F. Tassone, C. Ciuti, V. Savona, P. Schwendimann, and A. Quattropani, *One-dimensional Model of Many-Exciton effects in Photoluminescence spectra*, phys. stat. sol. (a) 178, 435 (2000).
50. C. Ciuti, C. Piermarocchi, V. Savona, P. E. Selbmann, P. Schwendimann, and A. Quattropani, *Strongly Driven Exciton Resonances in quantum Wells: Light-Induced Dressing versus Coulomb Scattering*, Phys. Rev. Lett. 84, 1752 (2000).
51. G. Grosso, G. Pastori Parravicini, and C. Piermarocchi, *Energy levels of Ge quantum wells embedded in Si: A tight-binding approach*, Phys. Rev. B 61 15 585 (2000).
52. G. Rochat, C. Ciuti, V. Savona, C. Piermarocchi, A. Quattropani and P. Schwendimann, *Excitonic Bloch equations for a two-dimensional system of interacting excitons*, Phys. Rev. B 61, 13 856 (2000).
53. G. Cassabois, A. L. C. Triques, F. Bogani, C. Delalande, Ph. Roussignol, and C. Piermarocchi, *Polariton-acoustic-phonon interaction in a semiconductor microcavity*, Phys. Rev. B 61, 1696 (2000).
54. C. Ciuti, C. Piermarocchi, V. Savona, P. E. Selbmann, P. Schwendimann, and A. Quattropani, *Coherence versus Coulomb Scattering in Resonantly Excited Quantum Wells*, phys. stat. sol. (a) 178, 417 (2000).
55. F. Tassone, and C. Piermarocchi, *Electron-hole correlation effects in the emission of light from quantum wires*, Phys. Rev. Lett. 82, 843 (1999).
56. C. Piermarocchi, R. Ambigapathy, D. Y. Oberli, E. Kapon, B. Deveaud, and F. Tassone, *Excitonic Corrections and band gap renormalization in quantum wires*, Solid State Commun. 112 , 433 (1999).
57. V. Savona, C. Piermarocchi, A. Quattropani, P. Schwendimann, and F.

Tassone, *Optical properties of microcavity polaritons*, in Phase Transitions, Special Issue on New Aspects in Optical Properties of Nanostructures, 68 n. 1 169-279 (1999).

58. C. Ciuti, C. Piermarocchi, V. Savona, P. Selbmann, A. Quattropani, P. Schwendimann, *Dressed semiconductor Bloch equations: coherence versus Coulomb scattering in resonantly excited quantum wells*, Physica B 272, 335 (1999).
59. C. Piermarocchi, V. Savona, A. Quattropani, P. E. Selbmann, P. Schwendimann, and F. Tassone, *Photoluminescence spectra in semiconductor confined systems: effects of Coulomb correlation*, phys. stat. sol. (b) 206, 455 (1998).
60. C. Ciuti, V. Savona, C. Piermarocchi, A. Quattropani, and P. Schwendimann, *Role of the exchange of carriers in elastic exciton-exciton scattering in quantum wells*, Phys. Rev. B 58 7926 (1998).
61. C. Ciuti, V. Savona, C. Piermarocchi, A. Quattropani, and P. Schwendimann, *Threshold behavior in the collision broadening of microcavity polaritons*, Phys. Rev. B 58, R10 123 (1998).
62. J. Tignon, O. Heller, P. Roussignol, G. Bastard, C. Piermarocchi, R. Planel R and V. Thierry-Mieg, *Carrier dynamics in shallow GaAs/AlGaAs quantum wells*, Physica E 2, 126 (1998).
63. C. Piermarocchi, F. Tassone, V. Savona, A. Quattropani, and P. Schwendimann, *Exciton formation rates in GaAs quantum wells*, Phys. Rev B 55, 1333 (1997).
64. C. Piermarocchi, V. Savona, A. Quattropani, P. Schwendimann, and F. Tassone, *Photoluminescence and carrier dynamics in GaAs quantum wells*, phys. stat. sol. (a) 164, 221 (1997).
65. C. Piermarocchi, V. Savona, A. Quattropani, P. Schwendimann, and F. Tassone, *Role of carrier phonon interaction on the exciton formation in quantum wells*, phys. stat. sol. (b) 204, 191 (1997).
66. V. Savona, and C. Piermarocchi, *Microcavity polaritons: Homogeneous and Inhomogeneous broadening in the strong coupling regime*, phys. stat. sol. (a) 164, 45 (1997).
67. V. Savona, C. Piermarocchi, A. Quattropani, F. Tassone, and P. Schwendimann, *Microscopic theory of motional narrowing of microcavity polaritons in a disordered potential*, Phys. Rev. Lett. 78, 4470 (1997).
68. F. Tassone, C. Piermarocchi, V. Savona, A. Quattropani, and P. Schwendimann, *Bottleneck effects in the relaxation and photoluminescence of microcavity polaritons*, Phys. Rev. B 56, 7554 (1997).
69. M. Di Ventra, G. Grosso, G. Pastori Parravicini, and C. Piermarocchi, *Electronic structure of n-i-p-i Si superlattices*, Journal of Physics, Cond. Matt. 9, L657 (1997).
70. C. Piermarocchi, F. Tassone, V. Savona, A. Quattropani, and P. Schwendimann, *Nonequilibrium dynamics of free quantum well excitons in time resolved photoluminescence*, Phys. Rev B 53, 15834 (1996).
71. F. Tassone, C. Piermarocchi, V. Savona, A. Quattropani, and P. Schwendimann, *Photoluminescence decay times in strong coupling semiconductors microcavities*, Phys. Rev. B 53, R7642 (1996)

72. V. Savona, F. Tassone, C. Piermarocchi, A. Quattropani and P. Schwendimann, *Theory of polariton photoluminescence in arbitrary semiconductor microcavity structures*, Phys. Rev. B 53, 13 051 (1996).

73. G. Grosso, G. Pastori Parravicini, and C. Piermarocchi, *Valley splitting in triangular Si(001) quantum wells*, Phys. Rev. B 54, 16 393 (1996).

74. C. Piermarocchi, F. Tassone, V. Savona, A. Quattropani, and P. Schwendimann, *Effect of the scattering by phonons on the temperature dependence of the free QW excitons radiative lifetimes*, Il Nuovo Cimento 17 D, 1663 (1995).

75. G. Grosso, and C. Piermarocchi, *Tight-binding model and interaction scaling laws for silicon and germanium*, Phys. Rev. B 51, 16772 (1995).

76. V. Savona, F. Tassone, C. Piermarocchi, A. Quattropani, P. Schwendimann, and L. C. Andreani, *Light emission from quantum well excitons in semiconductor microcavities*, Il Nuovo Cimento 17 D, 1713 (1995).