

Salvatore Savasta: Lista delle pubblicazioni

- 1) Scully-Lamb quantum laser model for parity-time-symmetric whispering-gallery microcavities: Gain saturation effects and nonreciprocity, I.I. Arkhipov, A. Miranowicz, O. Di Stefano, R. Stassi, S. Savasta, F. Nori, and Ş.K. Özdemir, *Phys. Rev. A* **99**, 053806 (2019)
- 2) Near-field imaging of surface-plasmon vortex-modes around a single elliptical nanohole in a gold film, C. Triolo, S Savasta, A Settineri, S. Trusso, R. Saija, N.R. Agarwal, S. Patanè, *Sci. Rep.* **9**, 5320 (2019)
- 3) Interaction of Mechanical Oscillators Mediated by the Exchange of Virtual Photon Pairs, O. Di Stefano, A. Settineri, V. Macrì, A. Ridolfo, R. Stassi, A.F. Kockum, S. Savasta, F. Nori, *Phys. Rev. Lett.* **122**, 030402 (2019)
- 4) Ultrastrong coupling between light and matter, A.F. Kockum, A. Miranowicz, S. De Liberato, S. Savasta, F. Nori, *Nat. Rev. Phys.* **1**, 19 (2019)
- 5) Photodetection probability in quantum systems with arbitrarily strong light-matter interaction, O. Di Stefano, A.F. Kockum, A. Ridolfo, S. Savasta, F. Nori, *Scientific reports* **8**, 17825 (2018)
- 6) Dissipation and thermal noise in hybrid quantum systems in the ultrastrong-coupling regime, A. Settineri, V. Macrì, A. Ridolfo, O. Di Stefano, A.F. Kockum, F. Nori, S. Savasta, *Phys. Rev. A* **98**, 053834 (2018)
- 7) Bright Polariton Coumarin-Based OLEDs Operating in the Ultrastrong Coupling Regime, A. Genco, A. Ridolfo, S. Savasta, S. Patanè, G. Gigli, M. Mazzeo, *Adv. Opt. Mater.* **6**, 1800364 (2018)
- 8) Nonperturbative Dynamical Casimir Effect in Optomechanical Systems: Vacuum Casimir-Rabi Splittings, V. Macrì, A. Ridolfo, O. Di Stefano, A.F. Kockum, F. Nori, S. Savasta, *Phys. Rev. X* **8**, 011031c(2018)
- 9) Cavity QED in the ultrastrong coupling regime: photon bunching from the emission of individual dressed qubits, L Garziano, A Ridolfo, S De Liberato, S Savasta, *ACS Photonics* **4**, 2345 (2017)
- 10) Quantum nonlinear optics without photons, R. Stassi, V. Macrì, A. F. Kockum, O. Di Stefano, A. Miranowicz, S. Savasta, F. Nori, *Phys. Rev. A*, DOI: 10.1103/PhysRevA.00.003800 (2017)
- 11) Feynman-diagrams approach to the quantum Rabi model for ultrastrong cavity QED: stimulated emission and reabsorption of virtual particles dressing a physical excitation, O. Di Stefano, R Stassi, L Garziano, A F. Kockum, S Savasta, F Nori, *New J. Phys.* **19**, 053010, (2017)
- 12) Spin-Momentum Locking in the Near Field of Metal Nanoparticles, C. Triolo, A. Cacciola, S. Savasta, S. Patanè, R. Saija, F. Nori, *ACS Photonics*, **4**,2242 (2017) (on the Cover – September issue)
- 13) Frequency conversion in ultrastrong cavity QED, A. F. Kockum, V. Macrì, L. Garziano S. Savasta, F. Nori, *Sci Rep.* **7**, 5313 (2017).
- 14) Deterministic quantum nonlinear optics with single atoms and virtual photons, A. F. Kockum, A. Miranowicz, V. Macrì, S. Savasta, and Franco Nori, *Phys. Rev. A* **95**, 063849 (2017)
- 15) Output field-quadrature measurements and squeezing in ultrastrong cavity-QED, R Stassi, S Savasta, L Garziano, B Spagnolo, F Nori, *New Journal of Physics* **18**, 123005 (2016)
- 16) One Photon Can Simultaneously Excite Two or More Atoms, L Garziano, R Stassi, V Macrì, O Di Stefano, F Nori, S Savasta, *Phys. Rev. Lett.* **117**, 043601 (2016) (Featured in Physics, Editors' Suggestion)
- 17) Deterministic synthesis of mechanical NOON states in ultrastrong optomechanics, V Macrì, L Garziano, A Ridolfo, O Di Stefano, S Savasta, *Phys. Rev. A* **94**, 013817 (2016)
- 18) Multiphoton quantum Rabi oscillations in ultrastrong cavity QED, L Garziano, R Stassi, V Macrì, A Frisk Kockum, S Savasta, F Nori, *Phys. Rev. A* **92**, 063830 (2015)

- 19) Plasmonic Absorption Enhancement of a Single Quantum Dot, S Arena, F Cucinotta, O Di Stefano, A Cacciola, R Saija, S Savasta, *Plasmonics* **10**, 955 (2015)
- 20) Quantum control and long-range quantum correlations in dynamical Casimir arrays, R Stassi, S De Liberato, L Garziano, B Spagnolo, S Savasta, *Phys. Rev. A* **92**, 013830 (2015)
- 21) Subdiffraction Light Concentration by J-Aggregate Nanostructures, A Cacciola, C Triolo, O Di Stefano, A Genco, M Mazzeo, R Saija, S Patanè, S Savasta, *ACS Photonics* **2**, 971-979 (2015)
- 22) Single-step arbitrary control of mechanical quantum states in ultrastrong optomechanics, L Garziano, R Stassi, V Macrí, S Savasta, O Di Stefano, *Phys. Rev. A* **91**, 023809 (2015)
- 23) Ultrastrong coupling of plasmons and excitons in a nanoshell, A Cacciola, O Di Stefano, R Stassi, R Saija, S Savasta, *ACS nano* **8**, 11483 (2014)
- 24) Vacuum-induced symmetry breaking in a superconducting quantum circuit, L Garziano, R Stassi, A Ridolfo, O Di Stefano, S Savasta, *Phys. Rev. A* **90**, 043817 (2014)
- 25) Exploring Light–Matter Interaction Phenomena under Ultrastrong Coupling Regime, S Gambino, M Mazzeo, A Genco, O Di Stefano, S Savasta, S Patanè, D. Ballarini, F. Mangione, G. Lerario, D. Sanvitto, G. Gigli, *ACS Photonics* **1**, 1042 (2014)
- 26) Designing light emission with multiple organic based microcavities, S Stelitano, S Savasta, S Patané, *Thin Solid Films* **564**, 401 (2014)
- 27) Ultrastrong light-matter coupling in electrically doped microcavity organic light emitting diodes, M Mazzeo, A Genco, S Gambino, D Ballarini, F Mangione, O Di Stefano, S Patanè, S Savasta, D Sanvitto, G Gigli, *Appl. Phys. Lett.* **104**, 233303 (2014)
- 28) Switching on and off of ultrastrong light-matter interaction: Photon statistics of quantum vacuum radiation, L Garziano, A Ridolfo, R Stassi, O Di Stefano, S Savasta, *Phys. Rev. A* **88**, 063829 (2013)
- 29) Spontaneous conversion from virtual to real photons in the ultrastrong-coupling regime, R Stassi, A Ridolfo, O Di Stefano, MJ Hartmann, S Savasta, *Phys. Rev. Lett.* **110**, 243601 (2013)
- 30) Nonclassical radiation from thermal cavities in the ultrastrong coupling regime, A Ridolfo, S Savasta, MJ Hartmann, *Phys. Rev. Lett.* **110**, 163601 (2013)
- 31) Photon blockade in the ultrastrong coupling regime, A Ridolfo, M Leib, S Savasta, MJ Hartmann, *Phys. Rev. Lett.* **109**, 193602 (2012)
- 32) Delayed-choice quantum control of light-matter interaction, R Stassi, A Ridolfo, S Savasta, R Girlanda, O Di Stefano, *EPL* **99**, 24003 (2012)
- 33) Surface-enhanced Raman scattering of SnO₂ bulk material and colloidal solutions, E Fazio, F Neri, S Savasta, S Spadaro, S Trusso, *Phys. Rev. B* **85**, 195423 (2012)
- 34) Quantum complementarity of cavity photons coupled to a three-level system, R Vilardi, A Ridolfo, S Portolan, S Savasta, O Di Stefano, *Phys. Rev. A* **84**, 063842 (2011)
- 35) Test of the all-optical control of wave–particle duality of cavity photons by ordinary photodetection, O Di Stefano, A Ridolfo, S Portolan, S Savasta, *Opt. Lett.* **36**, 4509 (2011)
- 36) Dynamics and extraction of quantum discord in a multipartite open system, B Bellomo, G Compagno, R Lo Franco, A Ridolfo, S Savasta, *Int. J. Quantum Inf.* **9**, 1665 (2011)
- 37) Interference with coupled microcavities: Optical analog of spin 2 π rotations, O Di Stefano, R Stassi, A Ridolfo, S Patanè, S Savasta, *Phys. Rev. B* **84**, 085324 (2011)

- 38) Fano-doppler laser cooling of hybrid nanostructures, A Ridolfo, R Saija, S Savasta, PH Jones, MA Iati, OM Marago, ACS Nano **5**, 7354 (2011)
- 39) Entanglement dynamics of two independent cavity-embedded quantum dots, B Bellomo, G Compagno, RL Franco, A Ridolfo, S Savasta, Phys. Scr. **2011**, 014004 (2011)
- 40) All optical switch of vacuum Rabi oscillations: The ultrafast quantum eraser, A Ridolfo, R Vilardi, O Di Stefano, S Portolan, S Savasta, Phys. Rev. Lett. **106**, 013601 (2011)
- 41) Quantum plasmonics with quantum dot-metal nanoparticle molecules: influence of the Fano effect on photon statistics, A Ridolfo, O Di Stefano, N Fina, R Saija, S Savasta, Phys. Rev. Lett. **105**, 263601 (2010)
- 42) Nanopolaritons: vacuum rabi splitting with a single quantum dot in the center of a dimer nanoantenna, S Savasta, R Saija, A Ridolfo, O Di Stefano, P Denti, F Borghese, ACS Nano **4**, 6369 (2010)
- 43) Calculation of the local optical density of states in absorbing and gain media, O Di Stefano, N Fina, S Savasta, R Girlanda, M Pieruccini, J. Phys. Cond. Matter **22**, 315302 (2010)
- 44) Photoluminescence of photonic polaritons, A Ridolfo, S Stelitano, S Patané, S Savasta, R Girlanda, Phys. Rev. B **81**, 075313 (2010)
- 45) Emergence of entanglement out of a noisy environment: The case of microcavity polaritons, S Portolan, O Di Stefano, S Savasta, V Savona, EPL **88**, 20003 (2009)
- 46) Vertical coupled double organic microcavities, S Stelitano, G De Luca, S Savasta, LM Scolaro, S Patané, Applied Physics Letters **95**, 093303 (2009)
- 47) Origin of giant polarization splitting in high quality organic microcavities, S Stelitano, S Savasta, S Patané, G De Luca, LM Scolaro, Journal of Applied Physics **106**, 033102 (2009)
- 48) Polarized emission from high quality microcavity based on active organic layered domains, S Stelitano, G De Luca, S Savasta, S Patané, Appl. Phys. Lett. **93**, 193302 (2008)
- 49) Time and spatially resolved, photoluminescence of quantum structures with interfacial roughness: a theoretical description, G. Pistone, S. Savasta, O. Di Stefano, R. Girlanda, S. Portolan, Phys. Stat. Sol. B. **245**, 1067 (2008)
- 50) Dynamics-controlled truncation scheme for quantum optics and nonlinear dynamics in semiconductor microcavities, S. Portolan, O. Di Stefano, S. Savasta, F. Rossi, R. Girlanda, Phys. Rev. B **77**, 035433 (2008)
- 51) Near-field light emission from dark states excitonic occupations, G. Pistone, S. Savasta, O. Di Stefano, G. Martino, R. Girlanda, Appl. Phys. Lett. **92**, 173114 (2008)
- 52) Nonequilibrium Langevin approach to quantum optics in semiconductor microcavities, S. Portolan, O. Di Stefano, S. Savasta, F. Rossi, R. Girlanda, Phys. Rev. B **77** 035433 (2008)
- 53) Quantum optics with interacting polaritons, S. Savasta, O. Di Stefano, Phys. Stat. Sol. B **243**, 2322 (2006)
- 54) Spatially resolved photoluminescence in quantum wells with interface roughness: a theoretical description, G. Martino, G. Pistone, S. Savasta, O. Di Stefano, R. Girlanda, J. Phys. Cond-Mat. **18**, 2367 (2006)
- 55) Decoherence-free emergence of macroscopic local realism for entangled photons in a cavity, S. Portolan, O. Di Stefano, S. Savasta, F. Rossi, R. Girlanda, Phys. Rev. A **73**, (rapid) 020101 (2006)
- 56) Quantum complementarity of microcavity polaritons, S. Savasta, O. Di Stefano, V. Savona, W. Langbein, Phys. Rev. Lett. **94**, 246401 (2005)

- 57) Nanoprobe control of morphology-dependent resonances of microspheres: A theoretical description, A. Giusto, S. Savasta, R. Saija, Phys. Rev. B **71**, 113415 (2005)
- 58) Coherence and correlation in semiconductor microcavities, O. Di Stefano, S. Savasta, R. Girlanda, Laser Phys. Lett. **1**, 586 (2004)
- 59) Comment on "Imaging the local density of states of optical corrals", S. Savasta, O. Di Stefano, R. Girlanda, M. Pieruccini Phys. Rev. Lett. **93** 069701 (2004)
- 60) Microscopic quantum theory of spatially resolved photoluminescence in semiconductor quantum structures, G. Pistone, S. Savasta, O. Di Stefano, R. Girlanda, Appl. Phys. Lett. **84**, 2971 (2004)
- 61) Optical mapping of amplitude and phase of excitonic wave functions in a quantum dot system, O. Di Stefano, S. Savasta, G. Pistone, G. Martino, R. Girlanda Phys. Rev. B **68**, 165329 (2003)
- 62) Many-body and correlation effects in semiconductor Microcavities, S. Savasta, O. Di Stefano, R. Girlanda, Semicond. Sci. Technol. **18** S294–S300 (invited contribution: special issue on semiconductor microcavities) (2003)
- 63) Near-field light emission from nano- and micrometric complex structures, M. Pieruccini, S. Savasta, R. Girlanda, R. C. Iotti, F. Rossi, Appl. Phys. Lett **83**, 2480 (2003)
- 64) Spatially resolved spectra in semiconductor quantum structures: Spatially averaged spectra compared to far-field spectra, G. Pistone, S. Savasta, O. Di Stefano, R. Girlanda, Phys. Rev. B **67**, 153305 (2003)
- 65) Many-body and correlation effects on parametric polariton amplification in semiconductor microcavities, S. Savasta, O. Di Stefano, R. Girlanda Phys. Rev. Lett. **90**, 096403 (2003)
- 66) Light quantization for arbitrary scattering systems, S. Savasta, O. Di Stefano, R. Girlanda, Phys. Rev. A **65**, 043801 (2002)
- 67) Three-dimensional quantum-optical input-output relations for arbitrary planar dielectrics, S. Savasta, O. Di Stefano, R. Girlanda, JOSA **19**, 304 (2002)
- 68) Theory of local optical spectroscopy in quantum wires with interface fluctuations, O. Di Stefano, S. Savasta, R. Girlanda, J. of Appl. Phys **91**, 2302 (2002)
- 69) Microscopic calculation of noise current operators for electromagnetic field quantization in absorbing material systems, O. Di Stefano, S. Savasta, R. Girlanda, J. of Opt. B **3**, 288 (2001)
- 70) Spectroscopy of four particle correlations in semiconductor microcavities, S. Savasta, O. Di Stefano, R. Girlanda, Phys. Rev. B **64**, 073306-1 (2001)
- 71) Mode expansion and photon operators in dispersive and absorbing dielectrics, O. Di Stefano, S. Savasta, R. Girlanda, J. Mod. Opt., **48**, 67 (2001)
- 72) Imaging spectroscopy of quantum wells with interfacial fluctuations: A theoretical description, O. Di Stefano, S. Savasta, G. Martino, R. Girlanda, Appl. Phys. Lett., **77**, 2804 (2000)
- 73) Beyond spatial averaging: Simulations of scanning near-field spectroscopy in of quantum structures with interfacial disorder, O. Di Stefano, S. Savasta, G. Martino, R. Girlanda, Phys. Rev. B **62**, 11071 (2000)
- 74) Propagation of nonclassical light through a semiconductor microcavity, O. Di Stefano, S. Savasta, R. Girlanda, Phys. Stat. Sol. (a) **158**, 577 (2000)
- 75) Near-field optical spectroscopy of an extended interacting electron-system, S. Savasta, G. Martino, R. Girlanda, , Phys. Rev. B **61**, 13852 (2000)

- 76) Three-dimensional electromagnetic field quantization in absorbing and dispersive bounded dielectrics, O. Di Stefano, S. Savasta, R. Girlanda, Phys. Rev. A **61**, 023803 (2000)
- 77) Comment on "Quantum theory of secondary emission in optically excited semiconductor quantum wells", S. Savasta, G. Martino, R. Girlanda, Phys. Rev. Lett. **83**, 4674 (1999)
- 78) S. Savasta, R. Girlanda, Signatures of the electromagnetic field quantization in the nonlinear response of excitons, J. Phys.: Cond-Mat, **11**, 6045 (1999)
- 79) Electromagnetic field quantization in absorbing confined systems, O. Di Stefano, S. Savasta, R. Girlanda, Phys. Rev. A, **60**, 1614 (1999)
- 80) Entangled photon pairs from the optical decay of biexcitons, S. Savasta, G. Martino, R. Girlanda, Solid. State Commun., **111**, 495, (1999)
- 81) Hyper Raman scattering in semiconductors, a quantum optical process in the strong coupling regime, S. Savasta, R. Girlanda, Phys. Rev. B, **59**, 15409 (1999)
- 82) Quantum description of the electromagnetic field in a confined polarizable medium, R. Girlanda, S. Savasta, B. Azzerboni, La Rivista del Nuovo Cimento, 21, 1, (1998)
- 83) A. Arena, S. Patanè, G. Saitta, S. Savasta, R. Girlanda, R. Rinaldi, Silicon-based organic-inorganic microcavity and its dispersion curve from angle-resolved photoluminescence, Appl. Phys. Lett. **72**, 2571 (1998)
- 84) Hyper Raman scattering in microcavity quantum wells: quantum optical process in the strong coupling regime, S. Savasta, G. Martino, R. Girlanda, Phys. Stat. Sol. A **164**, 85 (1997)
- 85) Quantum optical effects and nonlinear dynamics in interacting electron systems, S. Savasta, R. Girlanda, Phys. Rev. Lett. **77**, 4736 (1996)
- 86) S. Savasta, R. Girlanda, Quantum description of the input and output electromagnetic field in a confined polarizable system, Phys. Rev. A. **53**, 2716 (1996)
- 87) Cavity polaritons beyond the boson approximation, S. Savasta, R. Girlanda Il Nuovo Cimento D, **17**,1705 (1995)
- 88) The particle-photon interaction in systems described by model Hamiltonians in second quantization, S. Savasta, R. Girlanda, Solid State Commun. **96**, 517 (1995)
- 89) Polariton fusion and second harmonic generation in semiconductors, R. Girlanda, S. Savasta, Solid State Commun. **91**,157 (1994)
- 90) Theory of exciton-polaritons in semiconductors with nearly degenerate exciton levels, R. Girlanda, S. Savasta, A. Quattropani, Solid State Commun. **90**, 267 (1994)
- 91) Exciton-polariton relaxation in ZnSe single crystals, F. Bogani, L. Carraresi, A. Filoramo, S. Savasta, Phys. Rev. B **46**, 9461 (1992)