

Publications

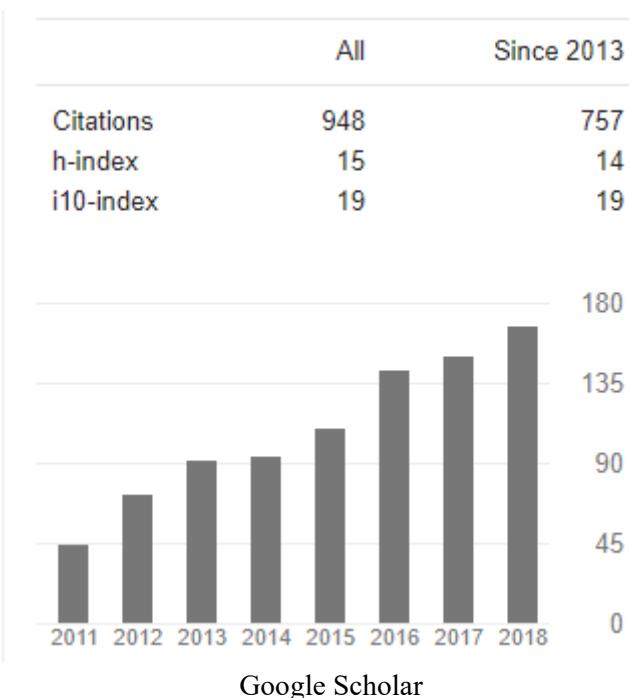
1. **Electrical tuning of nonlinearities in exciton-polariton condensates**, S.I. Tsintzos, A. Tzimis, G. Stavrinidis, A. Trifonov, Z. Hatzopoulos, J.J. Baumberg, H. Ohadi, and P.G. Savvidis. Phys. Rev. Lett. 121, 037401 (2018).
2. **Stochastic spin flips in polariton condensates: nonlinear tuning from GHz to sub-Hz**, Yago del Valle-Inclan Redondo, Hamid Ohadi, Yuri G Rubo, Orr Beer, Andrew J Ramsay, Symeon I Tsintzos, Zacharias Hatzopoulos, Pavlos G Savvidis, Jeremy J Baumberg, New J. Phys. 20,075008 (2018).
3. **Strain-assisted optomechanical coupling of polariton condensate spin to a micromechanical resonator**, O. Beer, H. Ohadi, YVI Redondo, A. J. Ramsay, S. I. Tsintzos, Z. Hatzopoulos, P. G. Savvidis and J. J. Baumberg, App. Phys. Lett. 111, 261104 (2017).
4. **Hybrid organic-inorganic polariton laser**, G.G. Paschos, N. Somaschi, S.I. Tsintzos, D. Coles, J.L. Bricks, Z. Hatzopoulos, D.G. Lidzey, P.G. Lagoudakis, P.G. Savvidis, Scientific Reports 7, 11377 (2017).
5. **Spin order and phase transitions in chains of polariton condensates**, H. Ohadi, A. J. Ramsay, H. Sigurdsson, Y. del Valle-Inclan Redondo, S. I. Tsintzos, Z. Hatzopoulos, T. C. H. Liew, I. A. Shelykh, Y. G. Rubo, P. G. Savvidis, and J. J. Baumberg, Phys. Rev. Lett. 119, 067401 (2017).
6. **Inverse-phase Rabi oscillations in semiconductor microcavities**, AV Trifonov, NE Kopteva, MV Durnev, I. Ya. Gerlovin, RV Cherbunin, A Tzimis, S.I. Tsintzos, Z Hatzopoulos, PG Savvidis and AV Kavokin, accepted Phys. Rev. B 95,115304 (2017).
7. **An attojoule electrical spin-switch based on optically trapped polariton condensates**. A Dreismann, H Ohadi, Y.V.I. Redondo, R. Balili, Y Rubo, S.I. Tsintzos, G. Deligeorgis, Z. Hatzopoulos, P.G. Savvidis, J.J. Baumberg, Nature Materials 15, 1074 (2016).
8. **Enhanced Stark Tuning of Single InAs (211)B Quantum Dots due to Nonlinear Piezoelectric Effect in Zincblende Nanostructures**, S. Germanis, C. Katsidis, S. I. Tsintzos, A. Stavrinidis, G. Konstantinidis, N. Florini, J. Kiouseoglou, G. P. Dimitrakopulos, Th. Kehagias, Z. Hatzopoulos, and N. T. Pelekanos, Phys. Rev. Applied 6, 014004 (2016).
9. **Tunable magnetic alignment between trapped exciton-polariton condensates**, H. Ohadi, Y.V. Redondo, A. Dreismann, Y.G. Rubo, F. Pinsker, S. I. Tsintzos, Z. Hatzopoulos, P.G. Savvidis, J.J. Baumberg, Phys. Rev. Lett. 116, 106403 (2016)
10. **Lasing in Bose-Fermi mixtures**. V. Kochereshko, M. Durnev, L. Besombes, H. Mariette, V. Sapega, A Askitopoulos, I Savenko, TC Liew, I Shelykh, A Platonov, S. Tsintzos, Z Hatzopoulos, P.G. Savvidis, V. Kalevich, M Afanasiev, V Lukoshkin, C Schneider, M. Amthor, C Metzger, M Kamp, S. Hoefling, A. Kavokin, Scientific Reports 6, 20091 (2016)
11. **Dynamics of the Energy Relaxation in a Parabolic Quantum Well Laser**, A. V. Trifonov, E. D. Cherotchenko, J. L. Carthy, I. V. Ignatiev, A. Tzimis, S. Tsintzos, Z. Hatzopoulos, P. G. Savvidis, A.V. Kavokin, Phys. Rev. B 93, 125304 (2016)
12. **On the condensation of exciton polaritons in microcavities induced by a magnetic field**, Kochereshko VP, Avdoshina DV, Savvidis P, Tsintzos SI, Hatzopoulos Z, Kavokin AV, Besombet L, Mariette H, Semiconductor 50, 1506 (2016)
13. **Strong coupling and stimulated emission in single parabolic quantum well micro cavity for terahertz cascade**, A. Tzimis, A. V. Trifonov, G. Christmann, S. I Tsintzos, Z.

Hatzopoulos, I. V. Ignatiev, A. V. Kavokin, P. G. Savvidis. *Appl. Phys. Lett.* 107, 101101 (2015)

14. **Spontaneous spin bifurcations and ferromagnetic phase transitions in a spinorexciton-polariton condensate**, H. Ohadi, A. Dreismann, Y. G. Rubo, F. Pinsker, Y. del Valle-Inclan Redondo, S. I. Tsintzos, Z. Hatzopoulos, P. G. Savvidis, J. J. Baumberg. *Phys. Rev. X* 5,031002 (2015).
15. **Controllable structuring of exciton-polariton condensates in cylindrical pillar microcavities**. V.K. Kalevich, M.M. Afanasiev, V.A. Lukoshkin, D.D. Solnyshkov, G. Malpuech, K.V. Kavokin, S.I. Tsintzos, Z. Hatzopoulos, P.G. Savvidis and A.V. Kavokin *Phys. Rev. B* 91, 045305 (2015)
16. **Relaxation oscillations in the formation of a polariton condensate**, Milena De Giorgi, Dario Ballarini, George Deligeorgis, Simos I. Tsintzos, Zacharias Hatzopoulos, Pavlos G. Savvidis, Giuseppe Gigli, Fabrice P. Laussy, Daniele Sanvitto, *PRL* 112, 113602 (2014)
17. **Tuning the Energy of a Polariton Condensate via Bias-controlled Rabi Splitting**. P. Tsotsis, S. I. Tsintzos, G. Christmann, P.G. Lagoudakis, S. Kyrienko, I.A. Shelykh, J.J. Baumberg, A.V. Kavokin, Z. Hatzopoulos, P.S. Eldridge and P. G. Savvidis *Phys. Rev. Applied* 2, 014002 (2014)
18. **Ring-shaped polariton lasing in pillar microcavities**, V. K. Kalevich, M. M. Afanasiev, V. A. Lukoshkin, K. V. Kavokin, S. I. Tsintzos, P. G. Savvidis, and A. V. Kavokin, *Journal of Applied Physics* 115, 094304 (2014)
19. **Electrically controlled strong coupling and polariton bistability in double quantum wells**, C. Coulson, G. Christmann, P. Christofolini, C. Grossmann, JJ Baumberg, SI Tsintzos, G. Konstantinidis, Z. Hatzopoulos, PG Savvidis, *Phys. Rev. B* 87, 045311 (2013)
20. **Coupling Quantum Tunneling with Cavity Photons**, P. Cristofolini, G. Christmann, S. I. Tsintzos, G. Deligeorgis, G. Konstantinidis, Z. Hatzopoulos, P.G. Savvidis and J.J. Baumberg, *Science* 336, 704 (2012)
21. **Polariton Condensate Transistor Switch**, T.Gao, P.S. Eldridge, T.C.H. Liew, S.I. Tsintzos, G. Stavrinidis, G. Deligeorgis, Z. Hatzopoulos, and P.G. Savvidis, *Phys. Rev. B* 85, 235102 (2012)
22. **Lasing threshold doubling at the crossover from strong to weak coupling regime in GaAs microcavity**, P. Tsotsis, P. S. Eldridge, T. Gao, S. I. Tsintzos, Z. Hatzopoulos, P. G. Savvidis, *New Journal of Physics* 14, 023060 (2012)
23. **Exciton Polaritons in Microcavities**, Simeon I. Tsintzos, Nikolaos T. Pelekanos, Pavlos G. Savvidis, Book Chapter, Springer Series in Solid-State Sciences, Edited by Daniele Sanvitto and Vladislav Timofeev, Springer (2012)
24. **Oriented polaritons in strongly-coupled assymetricdouble quantum well microcavities**, G. Christmann, A. Askitopoulos, G. Deligeorgis, Z. Hatzopoulos, S.I. Tsintzos, P.G. Savvidis, J.J. Baumberg. *Appl. Phys. Lett.* 98, 081111 (2011)
25. **Control of polariton scattering in resonant-tunneling double-quantum-well semiconductor microcavities**, G. Christmann, C. Coulson, J. J. Baumberg, N.T. Pelekanos, Z. Hatzopoulos, S.I. Tsintzos, P.G. Savvidis, *Phys. Rev. B* 82, 113308 (2010).
26. **Room temperature GaAs exciton-polariton light emitting diode**, S.I. Tsintzos, P. G. Savvidis, G. Deligeorgis, Z. Hatzopoulos, N. T. Pelekanos, *Appl. Phys. Lett.* 94, 071109 (2009), selected also to appear in the March 2, 2009 issue of the Virtual Journal of Nanoscale Science & Technology.

27. **InAs nanostructures on polar GaAs surfaces**, G. E. Dialynas, A. Pantazis, Z. Hatzopoulos, M. Androulidaki, K. Tsagaraki, G. Konstantinidis, C. Xenogianni, E. Trichas, S. Tsintzos, P. G. Savvidis, N. T. Pelekanos, Int. Journal of Nanotechnology, special issue on Nanotechnology in Greece, IJNT 6, p.124-136 (2009)
28. **A GaAs polariton light-emitting diode operating near room temperature**, S. Tsintzos, N. T. Pelekanos, G. Konstantinidis, Z. Hatzopoulos, P. G. Savvidis, Nature 453, 372 (2008).
29. **Towards electrically-pumped microcavity polariton lasers**, S. Tsintzos, P. G. Savvidis, G. Konstantinidis, Z. Hatzopoulos, N. T. Pelekanos, phys. stat. sol. (c) 5, 3594 (2008).
30. **Single dot spectroscopy on InAs/GaAs piezoelectric quantum dots**, G. E. Dialynas, N. Hadjidimitriou, S. Kalliakos, S. Tsintzos, P. G. Savvidis, Z. Hatzopoulos, N. T. Pelekanos, phys. stat. sol. (a) 205, 2566 (2008).
31. **Anti-binding of bi-excitons in (211)B InAs/GaAs piezoelectric quantum dots**, G.E. Dialynas, C. Xenogianni, S. Tsintzos, E. Trichas, P.G. Savvidis, G. Konstantinidis, J. Renard, B. Gayral, Z. Hatzopoulos, N.T. Pelekanos, Physica E 40, 2113 (2008).

Publication citation metrics



Conference Proceedings

1. **"Hybrid organic inorganic strongly coupled microcavities"**, G. Paschos, N. Somaschi, G. Christmann, D. Coles, D. G. Lidzey, Z. Hatzopoulos, P. G. Lagoudakis, S. I. Tsintzos, P. G. Savvidis. ICCMSE 2015, Athens, Greece, **(Invited)**
2. **"Bias controlled bistability in dipole oriented polariton system"**, P.K. Sharma, S.I. Tsintzos, G. Christmann, A. Tzimis, Z. Hatzopoulos, J. J. Baumberg and P.G. Savvidis, International Conference on Physics of Light-Matter Coupling in Nanostructures (PLMCN 2014) Montpellier, France

3. “**Strongly coupled hybrid Frenkel Wannier-Mott exciton polaritons in a high Q microcavity**”, N. Somaschi, S. Tsintzos, D. Coles, D.G. Lidzey, Z. Hatzopoulos, P. Lagoudakis and P. Savvidis, CLEO: San Jose, California United States, June 9-14, (2013)
4. “**Polariton condensation in a planar Hybrid GaAs microcavity**”, P. Tsotsis, P. S. Eldridge, S. I. Tsintzos, N. Somaschi, Z. Hatzopoulos, P. G. Lagoudakis and P. G. Savvidis, International Conference on Physics of Light-Matter Coupling in Nanostructures (PLMCN14), May 2013, Hersonissos, Greece.
5. “**Strongly Coupled Hybrid Frenkel/Wannier-Mott Exciton Polaritons in a High Q Microcavity**”, N. Somaschi, S. Tsintzos, D. Coles, D. G. Lidzey, Z. Hatzopoulos, P. G. Lagoudakis and P. G. Savvidis, International Conference on Physics of Light-Matter Coupling in Nanostructures (PLMCN14), May 2013, Hersonissos, Greece.
6. “**Anharmonic Oscillations in the formation of a polariton condensate**”, M. De Giorgi, D. Ballarini, F. Laussy, P. Cazzato, S. I. Tsintzos, Z. Hatzopoulos, P. G. Savvidis, G. Gigli, and D. Sanvitto, International Conference on Physics of Light-Matter Coupling in Nanostructures (PLMCN14), May 2013, Hersonissos, Greece.
7. “**Electric field tuning of a polariton condensate**”, S. I. Tsintzos, P. Tsotsis, P. S. Eldridge, Z. Hatzopoulos, and P. G. Savvidis, International Conference on Physics of Light-Matter Coupling in Nanostructures (PLMCN14), May 2013, Hersonissos, Greece. (invited)
8. “**Lasing threshold doubling at the crossover from strong to weak coupling regime in GaAs microcavity**”, P. Tsotsis, P. S. Eldridge, T. Gao, S. Tsintzos, Z. Hatzopoulos and P. G. Savvidis International Conference on Physics of Semiconductors (ICPS) Zurich, Switzerland, July 2012
9. “**Ultralow threshold crossover from polariton to photon lasing in GaAs microcavity**”, P. Tsotsis, T. Gao, P. S. Eldridge, S. I. Tsintzos, Z. Hatzopoulos, P. G. Savvidis, International Conference on Optics of Excitons in Confined Systems (OECS 12), Paris, France, Sept 2011
10. “**Ultralow threshold crossover from polariton to photon lasing in GaAs microcavity**”, P. Tsotsis, T. Gao, P. S. Eldridge, S. I. Tsintzos, Z. Hatzopoulos and P. G. Savvidis. International Conference on Physics of Light-Matter Coupling in Nanostructures (PLMCN11), Berlin, Germany, April 2011
11. “**Oriented polaritons in strongly-coupled asymmetric double quantum well microcavities**”, G. Christmann,¹ A. Askopoulos,² G. Deligeorgis, Z. Hatzopoulos, S. I. Tsintzos, P. G. Savvidis, J. J. Baumberg, 5th International Conference on Spontaneous Coherence in Excitonic Systems (ICSCE-5), Lausanne, Switzerland, Feb. 2011
12. “**Relaxation dynamics in polariton light emitting devices**”, S. I. Tsintzos, Tingge Gao, N. T. Pelekanos, Z. Hatzopoulos, P. G. Savvidis, Book of Abstracts of the International Conference on Physics of Semiconductors 2010, ICPS 10, Seoul.
13. “**Ultrafast control of polariton stimulated scattering in semiconductor MCs**”, G. Christmann, C. Coulson, J.J. Baumberg, N. T. Pelekanos, Z. Hatzopoulos, S. I. Tsintzos, P. G. Savvidis, CLEO/QELS Conference 2010 Technical Digest, San Jose (2010).
14. “**Polariton light emitting devices: efficiency and relaxation dynamics**”, S.I. Tsintzos, P.G. Savvidis, Tingge Gao, G. Deligeorgis, P. Tsotsis, Z. Hatzopoulos, N.T. Pelekanos, Book of Abstracts of PLMCN 2010, Guernavaca, Mexico.

15. **“Ultrafast control of polariton stimulated scattering in semiconductor MCs**, G.Christmann, C. Coulson, C. Grossmann, J. J. Baumberg, N. T. Pelekanos, Z. Hatzopoulos, S. I. Tsintzos, P. G. Savvidis, Book of Abstracts of PLMCN 2010, Guernavaca, Mexico.
16. **“Room temperature GaAs polariton LED: A first step towards a polariton laser”**, S. I. Tsintzos, P.G. Savvidis, G. Deligeorgis, P. Tsotsis, Z. Hatzopoulos, N.T. Pelekanos, ICO- Photonics-2009 Conference on “Emerging Trends and Novel Materials in Photonics”, Delphi, Greece, October 2009.
17. **“Room temperature polariton light emitting diode”**, P.G. Savvidis, S.I. Tsintzos, G.Deligeorgis, Z. Hatzopoulos, N.T. Pelekanos, International Conference on Optics of Excitons in Confined Systems (OECS 11), Madrid, Spain, (2009)
18. **“Large anti-binding of bi-excitons in (211)B InAs/GaAs piezoelectric quantum dots”**, G. E. Dialynas, N. Chadzidimitriou, S. Kalliakos, S. Tsintzos, P. G. Savvidis, Z. Hatzopoulos, N. T. Pelekanos, Abstract Book of International Conference on the Physics of Semiconductors 2008, ICPS 08, Rio de Janeiro.
19. **“Near room temperature GaAs polariton LED”**, S.I. Tsintzos, P.G. Savvidis, G.Konstantinidis, Z. Hatzopoulos, N.T. Pelekanos, Abstract Book of International Conference on the Physics of Semiconductors 2008, ICPS 08, Rio de Janeiro. (Invited)
20. **“Near Room Temperature Polariton Electroluminescence in Strongly Coupled MC LED”**, P. Savvidis, S. Tsintzos, G. Konstantinidis, Z. Hatzopoulos, N. Pelekanos, International Conference on Physics of Light-Matter Coupling in Nanostructures (PLMCN8), Tokyo, Japan, (2008)
21. **“Novel ultra-efficient polariton light emitting devices”**, P.G. Savvidis, S.I. Tsintzos, G. Konstantinidis, Z. Hatzopoulos, N.T. Pelekanos, XXIV Panhellenic Conference on Solid State Physics and Materials Science, Heraklion, Crete, (2008), (Invited).

Publicity

1. Intertwining Electron Tunneling with Light. Marzena H. Szymanska, *Science* **336**, 679 (2012)
2. Article about the group in "Eleftheros Typos".
3. News and Views article, "Solid-state physics: Polartronics in view", *Nature* **453**, 297 (2008).
4. New Scientist, "Quantum lasers: Half-light, half-matter", April (2009)
5. Photonics Spectra, "Polariton LEDs Deliver Quantum Efficiency", July (2008)
6. Physics World, "Polaritonics' forges ahead", May 19 (2008)
7. Laser Focus World, "Polariton LED is electrically pumped", July (2008)
8. Chemical & Engineering News, "Exotic Lighting", Vol. **86**, May (2008)