

Prof Pavlos Lagoudakis

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Executive Summary

Pavlos Lagoudakis is Professor of Physics at the University of Southampton. He moved to the UK in 2006 from LMU, Munich, to setup a new experimental research activity on Hybrid Photonics. He setup and directs ULTRASPEC, a suite for ultrafast spectroscopies. His research has been supported by 8 EPSRC, four EU projects and other bodies such as the Royal Society, the British Council, and the Japanese Society for the Promotion of Science (JSPS fellowship). He has pioneered in the field of polaritonics with the first demonstration of polariton laser at room temperature and he is recognized for the realization of the theoretical proposals of Dexter (1979) and Agranovich (1998) on hybrid organic-inorganic photonic devices for light harvesting and light emission respectively. His work in hybrid photonics includes the first demonstration of hybrid LED and PV devices utilizing resonance energy transfer, a patented mechanism now adapted by relevant industries (LUXTALTEK, TSMC). For his contribution in the field of polaritonics and hybrid photonics he obtained the IUPAP award on Quantum Electronics (Sydney 2011).

Research/Employment

Deputy Head of School for Research (http://www.phys.soton.ac.uk)	06/2013 – present
Visiting Professor at EPFL, Switzerland (http://topo.epfl.ch/)	06/2013 – 06/2014
Head of Solid State & Photonics Division (http://www.qim.soton.ac.uk/)	06/2012 – 08/2014
Chair: Southampton Nanoscience Group (http://www.soton.ac.uk/nano/)	03/2011 – 08/2014
Personal Chair, University of Southampton, UK (http://www.hybrid.soton.ac.uk/)	01/2008 - present
Lecturer, Physics & Astronomy, University of Southampton, UK	01/2006 - 12/2007
Postdoctoral Research Fellowship: Ludwig-Maximilians University of Munich	01/2004 - 12/2005
Project: Optoelectronic properties of organic semiconductors	

Education/Other

Inaugural IUPAP Quantum Electronics Young Scientist Prize (awarded at IQEC Sydney)	08/2011
Awarded Academic Fellowship, RCUK (Roberts Fellowship)	2006
Offer of Assistant Professorship (Brown University, Division of Engineering, US)	2005
Ph.D. in Physics, University of Southampton, Southampton, UK	2003
Dissertation title: <u>Exciton-Polariton Dynamics in Semiconductor Microcavities</u>	
Bachelor of Science degree in Physics, University of Athens, Athens, Greece	2000
Diploma Thesis: " <u>Path Integral Approach to Quantum Field Theory</u> ", with the mark 10/10	

Teaching/supervisory experience

1. Coordinator of MPHYS (Hons) Physics with NanoScience	2008-present
2. Teaching "Introduction to Nanoscience", first year undergraduate course 60-70 UGs.	2008-present
3. Course coordinator: "Introduction to Nanoscience"	2008-present
4. Deputy course coordinator: "Nanoscience: technologies and advanced materials"	2008-present
5. Academic lead/representative for Erasmus-Mundus	2007-present
6. Number of postgraduates awarded PhD: 15	2006-present

Administrative Experience/related memberships

REF & Impact coordinator for the Physics submission 2014
Deputy Head of School for Research (Physics & Astronomy)
Chair of Nanoscience, University Research Strategy Group
Head of Solid State & Photonics Division (Quantum Light Matter group)
Director of ULTRASPEC (University research facility)
Advisory Committee for STFC/EPSRC laser pool, Research Councils UK (four members)
Research Vision Committee, University of Southampton (three members)
Deputy Head of School for Enterprise, School of Physics & Astronomy
Research Strategy Committee, School of Physics & Astronomy
Senior Management Team, School of Physics & Astronomy
Strategy and Executive board: Zepler Institute, University of Southampton
International Research Quality Assurance Assessment Panel for NTUA 2013
Line manager/appraiser duties: 15 academic staff

Funding ID: Funding exclusively towards my group: >£6M; Industrial contribution in kind: £800k

EPSRC: Scheme: Programme Grants

Title: Hybrid Polaritonics

Academic lead for experimental activity. Year of Award: 2015. Value: £5.1M

EPSRC: Scheme: Responsive Mode NR-1

Title: Improved Understanding, Development and Optimisation of Perovskite-based Solar Cells
Co-Investigator, Year of Award: 2015. Value: £800k

EPSRC: Scheme: Standard Research

Title: UK Quantum Technology Hub: NQIT - Networked Quantum Information Technologies
Co-Investigator, Year of Award: 2014. Value: £38M

EPSRC: Scheme: Centers of Doctoral Training

Title: EPSRC Centre for Doctoral Training in New and Sustainable PV
Co-Investigator, Year of Award: 2014. Value: £5.26M

British Council: Scheme: Newton Fund Research Links

Title: Advanced Polaritonics and Photonics

Principal Investigator. Year of Award: 2014. Value: £26k

British Council: Scheme: Newton Fund Research Links

Title: Polaritonics

Principal Investigator. Year of Award: 2013. Value: £22k

EU-FP7: Scheme: Network of Excellence

Title: Nanophotonics for Energy Efficiency

Principal Investigator of Southampton node. Year of Award: 2010. Value: €3.8M

EU-FP7: Scheme: ITN

Title: ICARUS

Principal Investigator of Southampton node. Year of Award: 2009. Value: €3.5M

EPSRC: Scheme: Responsive Mode

Title: Engineering polariton non-linearity in organic and hybrid-semiconductor microcavities
Principal Investigator. Year of Award: 2009. Value: £889k

EU-FP7: Scheme: ITN

Title: CLERMONT-4

Principal Investigator of Southampton node. Year of Award: 2009. Value: €3.8M

EU-FP7: Scheme: ITN

Title: Spinoptronics

Principal Investigator of Southampton node. Year of Award: 2009. Value: €3.9M

EPSRC: Scheme: Responsive Mode

Title: Femtosecond semiconductor lasers

Co-Investigator, in collaboration with Prof Anne Tropper (PI). Year of Award: 2008. Value: £753k

EPSRC: Scheme: Responsive Mode

Title: Spin currents and superfluidity of microcavity polaritons

Principal Investigator. Year of Award: 2008. Value: £700k

JSPS academic research fellowship: Hokkaido, Japan

Title: Spin manipulation through picosecond ultrasonics

Principal Investigator. Year of Award: 2008. Value £25k

EPSRC: Scheme: First Grant

Title: Actively manipulating electronic excitations in nanocrystals

Principal Investigator. Year of Award: 2008. Value: £475k

University of Southampton: Scheme: Adventure in Research

Title: Hybrid Solar Cells

Principal Investigator. Year of Award: 2006. Value: £27k

Royal Society: Scheme: Research Grant

Title: Optical Memory Cells

Principal Investigator. Year of Award: 2006. Value: £15k

Enterprise:

Two patents on hybrid optoelectronic devices utilizing RET for light emitting and light harvesting applications. Hybrid LED technology adapted by LUXTALTEK.

Reviewer/referee:

RC UK, NSF, EU, DFG, NPG, Royal Society, American Physical Society, American Institute of Physics, American Chemical Society, IoP, Wiley, Elsevier, Nature, Science

Publications:

Summary: h-index=24 (g-scholar) m-index=1.71 (h-index/number of years of publishing career) ca 90 publications, >100 conference papers and >100 invited talks and seminars.

Title: "Exciton-photon correlations in bosonic condensates of exciton polaritons"

Author(s): Alexey V. Kavokin, Alexandra S. Sheremet, Ivan A. Shelykh, Pavlos G. Lagoudakis, Yuri G. Rubo

Source: **Scientific Reports** 5, Article number: 12020

Title: "Luminescent down shifting and internal scattering enhancements in hybrid flexible nanocrystal-CIGS solar cells"

Author(s): Yu-Kuang Liao, Maël Brossard, Dan-Hua Hsieh, Tzu-Neng Lin, Martin D. B. Charlton, Shun-Jen Cheng, Chyong-Hua Chen, Ji-Lin Shen, Lung-Teng Cheng, Tung-Po Hsieh, Fang-I Lai, Shou-Yi Kuo*, Hao-Chung Kuo, Pavlos G. Savvidis, Pavlos G. Lagoudakis

Source: **Advanced Energy Materials** 5 (2) (2015)

Title: "Novel Non-radiative Exciton Harvesting Scheme Yields a 15% Efficiency Improvement in High-Efficiency III–V Solar Cells"

Author(s): M Brossard, CY Hong, M Hung, P Yu, MDB Charlton, PG Savvidis, Pavlos G. Lagoudakis

Source: **Advanced Optical Materials** 3 (2), 263-269

Title: "Significant photoinduced Kerr rotation achieved in semiconductor microcavities"

Author(s): RV Cherbunin, M Vladimirova, KV Kavokin, AV Mikhailov, NE Kopteva, PG Lagoudakis, AV Kavokin

Source: Physical Review B 91 (20), 205308 (2015)

Title: "Polariton-mediated energy transfer between organic dyes in a strongly coupled optical microcavity"

Author(s): D.M. Coles; N. Somaschi; P. Michetti; C. Clark; P. Lagoudakis; P.G. Savvidis; D.G. Lidzey

Source: **Nature Materials** 13, 712–719 (2014)

Title: "Polariton condensates: Going soft"

Author(s): P. Lagoudakis

Source: **Nature Materials** 13, 227-228 (2014)

Title: "Linear wave dynamics explains observations attributed to dark-solitons in a polariton quantum fluid"

Author(s): P. Cilibrizzi; H. Ohadi; T. Ostatnicky; A. Askitopolous; W. Langbein; P. G. Lagoudakis

Source: **Physical Review Letters**, **113**, 103901 (2014)

Title: "Polariton condensation in a strain-compensated planar microcavity with InGaAs quantum wells"

Author(s): P Cilibrizzi, A Askitopoulos, M Silva, F Bastiman, E Clarke, JM Zajac, ...

Source: Applied Physics Letters 105 (19), 191118 (2014)

Title: "Tuning the Energy of a Polariton Condensate via Bias-Controlled Rabi Splitting"

Author(s): P. Tsotsis, S. I. Tsintzos, G. Christmann, P. G. Lagoudakis, O. Kyriienko, I. A. Shelykh, J. J. Baumberg, A. V. Kavokin, Z. Hatzopoulos, P. S. Eldridge, and P. G. Savvidis

Source: Phys. Rev. Applied 2, 014002 (2014)

Title: "Spin noise spectroscopy of a single quantum well microcavity"

Author(s): S.V. Poltavtsev, I.I. Ryzhov, M.M. Glazov, G.G. Kozlov, V.S. Zapasskii, A.V. Kavokin, P.G. Lagoudakis, D.S. Smirnov, E.L. Ivchenko

Source: Physical Review B Volume: 89 Issue: 8 Article Number: 081304 (2014)

Title: "Optics of spin-noise-induced gyrotropy of an asymmetric microcavity"

Author(s): S.V. Poltavtsev; I.I. Ryzhov; R.V. Cherbunin; A.V. Mikhailov; N.E. Kopteva; G.G. Kozlov; K.V. Kavokin; V.S. Zapasskii; P.G. Lagoudakis; A.V. Kavokin

Source: Physical Review B Volume: 89 Article Number: 205308 (2014)

Title: "Imaging the polariton relaxation bottleneck in strongly coupled organic semiconductor microcavities"

Author(s): Coles, David M.; Grant, Richard T.; Lidzey, David G.; Clark, Caspar; Lagoudakis, Pavlos

Source: Physical Review B Volume: 88 Article Number: 121303 (2013)

Title: "Single-mode tunable laser emission in the single-exciton regime from colloidal nanocrystals"
Author(s): Grivas, Christos; Li, Chunyong; Andreakou, Peristera; Wang, Pengfei; Ding, Ming; Brambilla, Gilberto; Manna, Liberato; Lagoudakis, Pavlos
Source: **Nature Communications** Volume: 4 Article Number: 2376 (2013)

Title: "Polariton condensation in an optically induced two-dimensional potential"
Author(s): Askitopoulos, A.; Ohadi, H.; Kavokin, A. V.; Hatzopoulos, Z; Savvidis, P.G.; Lagoudakis, P.G.
Source: Physical Review B Volume: 88 Article Number: 041308 (2013)

Title: "Characterizing the Electroluminescence Emission from a Strongly Coupled Organic Semiconductor Microcavity LED"
Author(s): Christogiannis, Nikolaos; Somaschi, Niccolo; Michetti, Paolo; Coles, David M; Savvidis, Pavlos G; Lagoudakis, Pavlos G; Lidzey, David G
Source: **Advanced Optical Materials** Volume: 1 p.503 (2013)

Title: "In-situ electrical characterisation of a photodiode during nano-structuring with a focussed ion beam"
Author(s): Rindermann, Jan Junis; Henini, Mohammed; Lagoudakis, Pavlos G.
Source: Applied Physics A-Materials Science & Processing Volume: 110 p.935 (2013)

Title: "Size- and Temperature-Dependent Carrier Dynamics in Oleic Acid Capped PbS Quantum Dots"
Author(s): Andreakou, Peristera; Brossard, Mael; Li, Chunyong; Bernechea, Maria, Konstantatos, Gerasimos; Lagoudakis, Pavlos G
Source: Journal Of Physical Chemistry C Volume: 117 p.1887 (2013)

Title: "Crossover from photon to exciton-polariton lasing"
Author(s): E. Kammann, H. Ohadi, M. Maragkou, A.V. Kavokin and P.G. Lagoudakis
Source: N. J. Phys. 14, 105003 (2012)

Title: "Nonlinear optical spin Hall effect and long-range spin transport in polariton lasers"
Author(s): E. Kammann, T.C.H. Liew, H. Ohadi, P. Cilibrizzi, P. Tsotsis, Z. Hatzopoulos, P.G. Savvidis, A.V. Kavokin, P.G. Lagoudakis
Source: **Phys. Rev. Lett.** 109, 036404 (2012)

Title: "Spontaneous symmetry breaking in a polariton and photon laser"
Author(s): H. Ohadi, E. Kammann, T.C.H. Liew, K.G. Lagoudakis, A.V. Kavokin, P.G. Lagoudakis
Source: **Phys. Rev. Lett.** 109, 016404 (2012)

Title: "Tunable, continuous-wave Ti:sapphire channel waveguide lasers written by femtosecond and picosecond laser pulses"
Author(s): Christos Grivas, Costantino Corbari, Gilberto Brambilla, and Pavlos G. Lagoudakis
Source: Optics Letters, Vol. 37, Issue 22, pp. 4630-4632 (2012)

Title: "Detection of ultra-low refractive index variations with colloidal nanoprobles"

Author(s): P. Andreakou, S. Hands, P.G. Lagoudakis

Source: Sensors and Actuators B: Chemical Volumes 171–172, Pages 1269–1271 (2012)

Title: "Spinning nanorods – active optical manipulation of semiconductor nanorods using polarised light"

Author(s): Robin Head, Elena Kammann, Marco Zanella, Liberato Manna, Pavlos Lagoudakis

Source: Nanoscale, 2012,4, 3693-3697

Title: "In-situ electrical characterisation of a photodiode during nano-structuring with a focussed ion beam"

Author(s): Jan Junis Rindermann, Mohammed Henini, Pavlos G. Lagoudakis

Source: Applied Physics A-materials science & processing doi:10.1007/s00339-012-7199-5

Title: "The Dependence of Resonance Energy Transfer on Exciton Dimensionality"

Authors: Jan Junis Rindermann, Galia Pozina, Bo Monemar, Lars Hultman, Hiroshi Amano, and Pavlos G. Lagoudakis

Source: **Phys. Rev. Lett.** 107, 236805 (2011)

Title: "Gauging the flexibility of fluorescent markers for the interpretation of fluorescence resonance energy transfer"

Author(s): J.J. Rindermann, Y. Akhtman, J. Richardson, T. Brown, and P.G. Lagoudakis

Source: **Journal of the American Chemical Society** 133 (2), 279–285 (2011)

Title: "Optical analogue of the spin Hall effect in a photonic cavity"

Author(s): Maria Maragkou, Caryl E. Richards, Tomas Ostatnický, Alastair J. D. Grundy, Joanna Zajac, Maxime Hugues, Wolfgang Langbein, and Pavlos G. Lagoudakis

Source: Optics Letters, Vol. 36, Issue 7, pp. 1095-1097 (2011)

Title: "Ultrafast polariton population build-up mediated by molecular phonons in organic microcavities"

Author(s): N. Somaschi, L. Mouchliadis, D. Coles, I. E. Perakis, D. G. Lidzey, P. G. Lagoudakis, and P. G. Savvidis

Source: Applied Physics Letters 99, 143303 (2011)

Title: "Strain-induced spin relaxation anisotropy in symmetric (001)-oriented GaAs quantum wells"

Author(s): D. J. English, P. G. Lagoudakis, R. T. Harley, P. S. Eldridge, J. Hubner, and M. Oestreich

Source: Phys. Rev. B 84, 155323 (2011)

Title: "Broadband stimulated four-wave parametric conversion on a tantalum pentoxide photonic chip"

Author(s): Ruiqi Y. Chen, Martin D. B. Charlton, and Pavlos G. Lagoudakis

Source: Optics Express Vol. 19, Issue 27, pp. 26343-26352 (2011)

Title: "Spontaneous non-ground state polariton condensation in pillar microcavities"

Authors: M. Maragkou, A. J. D. Grundy, E. Wertz, A. Lemaitre, I. Sagnes, P. Senellart, J. Bloch and P.G. Lagoudakis

Source: Phys. Rev. B 81, 081307 (R) (2010) Rapid Comm.

Title: "Nonlinear birefringence and time-resolved Kerr measurement of spin lifetimes in (110) GaAs/Al_yGa_{1-y}As quantum wells"

Authors: P. S. Eldridge, P. G. Lagoudakis, M. Henini, and R. T. Harley

Source: Phys. Rev. B 81, 033302 (2010)

Title: "Rashba Conduction Band Spin-Splitting for Asymmetric Quantum Well Potentials"

Authors: Eldridge PS, Leyland WJH, Mar JD, Lagoudakis PG, Winkler R, Karimov OZ, Henini M, Taylor D, Phillips RT, Harley RT

Source: Journal of Superconductivity and Novel Magnetism 23, 157-159 (2010)

Title: "Large-scale first principles and tight-binding density functional theory calculations on hydrogen-passivated silicon nanorods"

Authors: Nicholas Zonias, Pavlos Lagoudakis and Chris-Kriton Skylaris

Source: Journal of Physics-Condensed Matter 22, 025303 (2010)

Title: "Increased color conversion efficiency in hybrid light emitting diodes utilizing non-radiative energy transfer"

Author(s): S. Chanyawadee, P.G. Lagoudakis, R.T. Harley, M.D.B. Charlton, D.V. Talapin, and S. Lin

Source: **Advanced Materials** 22, (5) 602 (2010)

Title: "Size dependent carrier recombination in ZnO nanocrystals"

Author(s): Galia Pozina, Lili Yang, Qingxiang Zhao, Lars Hultman, and Pavlos Lagoudakis

Source: Applied Physics Letters 97, 131909 (2010)

Title: "Longitudinal optical phonon assisted polariton laser"

Author(s): M. Maragkou, A. J. D. Grundy, T. Ostatnický and P. G. Lagoudakis

Source: Applied Physics Letters 97, 111110 (2010)

Title: "Rashba spin-splitting of electrons in asymmetric quantum wells"

Authors: P. S. Eldridge, W. J. H Leyland, P. G. Lagoudakis, R. T. Harley, R. T. Phillips, R. Winkler, M. Henini, and D. Taylor

Source: Phys. Rev. B 82, 045317 (2010)

Title: "Photocurrent Enhancement in Hybrid Nanocrystal Quantum-Dot p-i-n Photovoltaic Devices"

Author(s): S. Chanyawadee, R. T. Harley, M. Henini, D. V. Talapin, and P. G. Lagoudakis

Source: **Phys. Rev. Lett.** 102, 077402 (2009)

Title: "Efficient light harvesting in hybrid CdTe nanocrystal/bulk GaAs p-i-n photovoltaic devices",

Author(s): Soontorn Chanyawadee, Richard T. Harley, David Taylor, Mohamed Henini, Andrei S. Susha, Andrey L. Rogach, and Pavlos G. Lagoudakis

Source: Applied Physics Letters 94, 233502 (2009)

Title: "Chi³ Dispersion in Planar Tantalum Pentoxide Waveguides in the Telecoms Window"

Author(s): Ruiqi Chen, Martin Charlton, and Pavlos Lagoudakis

Source: Optics Letters, Vol. 34, Issue 7, pp. 1135-1137 (2009)

“Time and spectrally resolved enhanced fluorescence using silver nanoparticle impregnated polycarbonate substrates”

Laura Lagonigro, Anna C. Peacock, Stefan Rohmoser, Tom Hasell, Steven M. Howdle, Pier J. A. Sazio, and Pavlos G. Lagoudakis
Applied Physics Letters 93, 261114 (2008)

“Nonradiative exciton energy transfer in hybrid organic-inorganic heterostructures”

S. Chanyawadee, P.G. Lagoudakis, R.T. Harley, D.G. Lidzey, M. Henini
Phys. Rev. B 77, 193402 (2008)

“All optical measurement of Rashba coefficient in quantum wells”

P.S. Eldridge, W.J.H. Leyland, P.G. Lagoudakis, O.Z. Karimov, M. Henini, D. Taylor, R.T. Phillips and R.T. Harley
Phys. Rev. B 77, 125344 (2008)

“New light from hybrid inorganic–organic emitters”

C R Belton, G Itskos, G Heliotis, P N Stavrinou, P G Lagoudakis, J Lupton, S Pereira, E Gu, C Griffin, B Guilhabert, I M Watson, A R Mackintosh, R A Pethrick, J Feldmann, R Murray, M D Dawson and D D C Bradley
J. Phys. D: Appl. Phys. 41 094006 (2008)

“Temperature Dependence of Exciton Transfer in Hybrid Quantum Well/Nanocrystal Heterostructures”, Stefan Rohmoser, Julia Baldauf, Sameer Sapra, Alexander Eychmüller, Ian M. Watson, Richard T. Harley and Pavlos G. Lagoudakis,
Applied Physics Letters 91, 092126 (2007)

“Room temperature polariton lasing in semiconductor microcavities”

S. Christopoulos, G. Baldassarri, A. J. Grundy, P.G. Lagoudakis, A.V. Kavokin, J.J. Baumberg, G. Christmann, R. Butte, E. Feltn, J.-F. Carlin, and N. Grandjean
Phys. Rev. Lett. 98, 126405 (2007)

“Room temperature exciton storage in elongated semiconductor nanocrystals”

R. M. Kraus, P. G. Lagoudakis, A. L. Rogach, D. V. Talapin, H. Weller, J. M. Lupton, J. Feldmann,
Phys. Rev. Lett. 98, 017401 (2007)

“Exciton accumulation in π -conjugated wires encapsulated by light-harvesting macrocycles”

Klaus Becker, Pavlos G. Lagoudakis, Gerald Gaefke, Sigurd Höger, and John M. Lupton,
Angewandte Chemie Int. Ed. 46, 3450 (2007)

“Blue lasing at room temperature in an optically pumped lattice-matched AlInN=GaN VCSEL structure”

Feltn, E. Christmann, G. Dorsaz, J. Castiglia, A. Carlin, J.-F. Butte, R. Grandjean, N. Christopoulos, S. Baldassarri, G. Von Hogerthal, H. Grundy, A.J.D. Lagoudakis, P.G. Baumberg, J.J.

Electronics Letters 43, 924 (2007)

“Efficient dipole-dipole coupling of Mott-Wannier and Frenkel excitons in (Ga,In)N quantum well/polyfluorene semiconductor heterostructures”,

G.Itskos, G.Heliotis, P. G. Lagoudakis, J.M Lupton, N. P. Barradas, E. Alves, S. Pereira, I. M. Watson, M. D. Dawson, J. Feldmann, R. Murray, and D. D. C. Bradley,
Phys. Rev. B 76 035344 (2007)

“Current status of AlInN layers lattice-matched to GaN for photonics and electronics”

R Butte, J-F Carlin, E Feltin, M Gonschorek, S Nicolay, G Christmann, D Simeonov, A Castiglia, J Dorsaz, H J Buehlmann, S Christopoulos, G Baldassarri Hoger von Hogersthal, A J D Grundy, M Mosca, C Piquier, MAPy, F Demangeot, J Frandon, P G Lagoudakis, J J Baumberg and N Grandjean
J. Phys. D: Appl. Phys. 40, 6328-6344 (2007)

“Evidence for Temperature Independent Triplet Diffusion in a Ladder Type Conjugated Polymer”,

M. Reufer, P. G. Lagoudakis, M. J. Walter, J. M. Lupton, J. Feldmann, and U. Scherf,
Phys. Rev. B rapid comm. 74, 241201 (2006)

“Spin-conserving carrier recombination in conjugated polymers”,

M. Reufer, M. J. Walter, P. G. Lagoudakis, A. B. Hummel, J. S. Kolb, H. G. Roskos, U. Scherf and J. M. Lupton,
Nature Materials 4, 340-346 (2005)

“Wavefunction engineering in elongated semiconductor quantum dots”,

J. Müller, J. M. Lupton, P. G. Lagoudakis, F. Schindler, R. Koeppel, A. L. Rogach, J. Feldmann, D. V. Talapin and H. Weller,
Nano Letters 5, 2044 (2005)

“Interplay between Auger and ionisation processes in nanocrystal quantum dots”,

R. M. Kraus, P. G. Lagoudakis, J. Muller, A. L. Rogach, J. M. Lupton, J. Feldmann, D. V. Talapin, H. Weller,
J. Phys. Chem. B Letters 109, 18214 (2005)

“Parametric amplification and Polariton Liquids in Semiconductor Microcavities”,

J. J. Baumberg and P. G. Lagoudakis,
Phys. Stat. Sol. (b) 242, No. 11, 2210-2223 (2005)

“Experimental Evidence of exciton confinement in self-assembled molecular wires”,

P. G. Lagoudakis, M. M. de Souza, F. Schindler, J. M. Lupton, J. Feldmann, J. Wenus, and D.G. Lidzey,
Phys. Rev. Lett. 93, 257401 (2004)

“Coexistence of Low Threshold Lasing and Strong Coupling in Microcavities”

P. G. Lagoudakis, M. D. Martin, J. J. Baumberg, G. Malpuech, A. Kavokin,
Journal of Applied Physics 95, 8979 (2004)

“Electron-Polariton scattering, beneficial and detrimental effects”,

P. G. Lagoudakis, M. D. Martin, J. J. Baumberg, A. Qarry, E. Cohen and L. N. Pfeiffer, *Phys. Stat. Sol. (c)* 1, No. 6, 1333-1338 (2004)

“Electron-Polariton Scattering in n-doped Semiconductor Microcavities”

P. G. Lagoudakis, M. D. Martin, J. J. Baumberg, A. Qarry, E. Cohen and L. N. Pfeiffer, **Phys. Rev. Lett.** 90, 206401 (2003)

“Polarization rotation in parametric scattering of polaritons in semiconductor microcavities”,

A. Kavokin, P. G. Lagoudakis, G. Malpuech and J. J. Baumberg, *Phys. Rev. B* 67, 195321 (2003)

“Teaching Polaritons new tricks”,

P. G. Savvidis, P. G. Lagoudakis, *Semiconductor Science & Technology* 18, S311 (2003)

“Polarisation rotation in resonant emission of semiconductor microcavities”,

A. Kavokin, G. Malpuech, P. G. Lagoudakis, J. J. Baumberg, K. Kavokin, *Phys. Stat. Sol. (a)* 195, 579 (2003)

“Stimulated spin dynamics of polaritons in semiconductor microcavities”

P. G. Lagoudakis, P. G. Savvidis, J. J. Baumberg, D. M. Whittaker, P. R. Eastham, M. S. Skolnick, and J. S. Roberts, *Phys. Rev. B* 65, R161310 (2002)

“Polariton Traps in Semiconductor Microcavities”,

J. J. Baumberg, P. G. Savvidis, P. G. Lagoudakis, M. D. Martin, D. M. Whittaker, M.S. Skolnick, J.S. Roberts, *Physica E* 13, 385 – 389 (2002)

Book chapters:

“Parametric amplification and Polariton Liquids in Semiconductor Microcavities”, J. J. Baumberg and P. G. Lagoudakis, in "The Physics of Semiconductor Microcavities", edited by Benoit Deveaud, (WILEY-VCH, 2007). ISBN: 978-3-527-40561-9

“Lasing and Condensation in Semiconductor Microcavities”, J. J. Baumberg, P. G. Lagoudakis, M. D. Martin, In "Electron and Photon Confinement in Semiconductor Nanostructures", International School of Physics Enrico Fermi, (IOP Press, Ohmsha, 2003)