Konstantinos G. Lagoudakis

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E-mail:	lagous@stanford.edu
Date/place of birth:	10th August 1981, Athens, Greece
Nationality:	Hellenic

Education

Nov 2006 – Oct2010 **PhD in Photonics**
Ecole Polytechnique Fédérale de Lausanne, Institute of Condensed Matter Physics, Laboratory of Quantum Optoelectronics, Lausanne, Switzerland. Awarded November 25th, 2010.
Thesis title: "On the Physics of Exciton-Polariton Condensates"

Oct 2005 – Sep 2006 **MSc in Optics and Photonics**
Imperial College of Science and Technology, Department of Physics, Sector of Optics, London, United Kingdom. with EPSRC scholarship.
Awarded November 1st, 2006 with Distinction.
Thesis title: "High Finesse Optical Fibre Resonators"

Oct 1999 – Sep 2005 **BSc in Physics**
National Kapodistrian University of Athens, Department of Physics, Sector of Solid State Physics and Material Science, Athens, Greece.
Awarded December 7th, 2005.
Thesis title: "Non-Linear Effects in Semiconductor Microcavities" (10/10)

Appointments

Feb 2012 – present **Post-doctoral research fellow**
Stanford University, Ginzton Laboratory, Nanoscale and Quantum Photonics Lab, Stanford, United States. FNS young researcher fellowship.

Nov 2010 – Jan 2012 **Post-doctoral research fellow**
Ecole Polytechnique Fédérale de Lausanne, Institute of Condensed Matter Physics, Laboratory of Quantum Optoelectronics, Lausanne, Switzerland.

Nov 2006 – Oct2010 **Doctoral assistant**
Ecole Polytechnique Fédérale de Lausanne, Institute of Condensed Matter Physics, Laboratory of Quantum Optoelectronics, Lausanne, Switzerland.

July 2003 – Sep 2003 **Research assistant**
University of Southampton, Department of Physics, Ultrafast Laboratory, Southampton, United Kingdom.

July 2002 – Sep 2002 **Summer student**
University of Southampton, Department of Physics, Ultrafast Laboratory, Southampton, United Kingdom.

Awards and Scholarships

Oct 2012	"Mention EPFL Press" prize by Presses Polytechniques et Universitaires Romandes (PPUR) for the PhD thesis with title "On the Physics of Exciton-Polariton Condensates".
Apr 2012	EPFL Doctorate award 2012 for the PhD thesis with title "On the Physics of Exciton-Polariton Condensates".
Nov 2011	Fonds National Suisse (FNS) young researcher fellowship for the project "Towards Versatile Quantum Nodes by Means of Charged Quantum Dots in Photonic Crystal Nanoresonators" at Ginzton Laboratory, Stanford University.
May 2010	Swiss Physical Society (SPS) award on general physics (sponsored by Asea Brown Boveri Ltd)
Sep 2005	Engineering and Physical Sciences Research Council (EPSRC) scholarship for the MSc on Optics and Photonics at Imperial College London

Publications in Scientific Journals

F. Manni, K. G. Lagoudakis, T. C. H. Liew, R. André, V. Savona & B. Deveaud
"Dissociation Dynamics of Singly Charged Vortices Into Half-Quantum Vortex Pairs"
Nature Communications **3**, 1309 (2012).

F. Manni, K. G. Lagoudakis, R. André, M. Wouters and B. Deveaud
"Penrose-Onsager Criterion Validation in a One-Dimensional Polariton Condensate"
Physical Review Letters **109**, 150409 (2012).

H. Ohadi, E. Kammann, T. C. H. Liew, K. G. Lagoudakis, A. V. Kavokin, and P. G. Lagoudakis
"Spontaneous Symmetry Breaking in a Polariton and Photon Laser"
Physical Review Letters **109**, 016404 (2012).

F. Manni, K. G. Lagoudakis, T. C. H. Liew, R. André and B. Deveaud-Plédran
"Spontaneous pattern formation in a polariton condensate"
Physical Review Letters **107**, 106401 (2011).

F. Manni, K. G. Lagoudakis, T. K. Paraïso, R. Cerna, Y. Leger, T. C. H. Liew, I. A. Shelykh, A. V. Kavokin, F. Morier-Genoud, B. Deveaud-Plédran
"Spin-to-Orbital Angular Momentum Conversion in Semiconductor Microcavities"
Physical Review B **83**, 241307(R) (2011).

F. Manni, K. G. Lagoudakis, B. Pietka, L. Fontanesi, M. Wouters, V. Savona, R. André, B. Deveaud-Plédran
"Polariton Condensation in a One-Dimensional Disordered Potential"
Physical Review Letters **106**, 176401 (2011).

K. G. Lagoudakis, F. Manni, B. Pietka, M. Wouters, T. C. H. Liew, V. Savona, A. V. Kavokin, R. André and B. Deveaud-Plédran
"Probing the Dynamics of Spontaneous Quantum Vortices in Polariton Superfluids"
Physical Review Letters **106**, 115301 (2011).

K. G. Lagoudakis, B. Pietka, M. Wouters, R. André, B. Deveaud-Plédran
"Coherent Oscillations in an Exciton-Polariton Josephson Junction"
Physical Review Letters **105**, 120403 (2010).

G. Nardin, K. G. Lagoudakis, B. Pietka, F. Morier-Genoud, Y. Léger, B. Deveaud-Plédran
"Selective photoexcitation of confined exciton-polariton vortices"
Physical Review B **82**, 073303 (2010).

M. Richard, J. Kasprzak, A. Baas, S. Kundermann, K. G. Lagoudakis, M. Wouters, I. Carusotto, R. André, B. Deveaud-Plédran , Le Si Dang
"Exciton-Polariton Bose-Einstein Condensation: Advances and Issues"
International Journal of Nanotechnology **7**, 668 (2010).

G. Nardin, K. G. Lagoudakis, M. Wouters, M. Richard, A. Baas, R. André, Le Si Dang, B. Pietka, B. Deveaud-Pledran
"Dynamics of Long-Range Ordering in an Exciton-Polariton Condensate"
Physical Review Letters **103**, 256402 (2009).

K. G. Lagoudakis, T. Ostatnický, A.V. Kavokin, Y. G. Rubo, R. André, B. Deveaud-Plédran
"Observation of Half Quantum Vortices in an Exciton-Polariton Condensate"
Science **326**, 974 (2009).

D. N. Krizhanovskii, K. G. Lagoudakis, M. Wouters, B. Pietka, R. A. Bradley, K. Guda, D. M. Whittaker, M. S. Skolnick, B. Deveaud-Plédran, M. Richard, R. André and Le Si Dang
"Coexisting Non-Equilibrium Condensates with Long-Range Spatial Coherence in Semiconductor Microcavities"
Physical Review B **80**, 045317 (2009).

K. G. Lagoudakis, M. Wouters, M. Richard, A. Baas, I. Carusotto, R. André, Le Si Dang, B. Deveaud-Pledran.
"Quantized Vortices in an Exciton-Polariton Condensate"
Nature Physics **4**, 706-710 (2008).

A. Baas, K. G. Lagoudakis, M. Richard, R. André, Le Si Dang, B. Deveaud-Plédran.
"Synchronized and Desynchronized Phases of Exciton-Polariton Condensates in the Presence of Disorder"
Physical Review Letters **100**, 170401 (2008).

A. Divochiy, F. Marsili, D. Bitauld, A. Gaggero, R. Leoni, F. Mattioli, A. Korneev, V. Seleznev, N. Kaurova, O. Minaeva, G. Gol'tsman, K. G. Lagoudakis, M. Benkhaoul, F. Levy, A. Fiore
"Superconducting nanowire photon number-resolving detector at telecommunication wavelengths"
Nature Photonics **2**, 302-306 (2008).

Book Chapters

B. Deveaud-Plédran and K. G. Lagoudakis "Vortices in Spontaneous Bose-Einstein Condensates of Exciton-Polaritons" in Exciton Polaritons in Microcavities: New Frontiers, by D. Sanvitto and V. Timofeev, eds. Springer Series in Solid-State Sciences Vol. 172, 67-84 (Springer 2012). ISBN 978-3642241857

D. N. Krizhanovskii, D. M. Whittaker, M. S. Skolnick, K. G. Lagoudakis and M. Wouters "Coexisiting Polariton Condensates and Their Temporal Coherence in Semiconductor Microcavities" in Exciton Polaritons in Microcavities: New Frontiers, by D. Sanvitto and V. Timofeev, eds. Springer Series in Solid-State Sciences Vol. 172, 147-172 (Springer 2012). ISBN 978-3642241857

B. Deveaud-Plédran, A. Baas, K. G. Lagoudakis, M. Wouters, S. Kundermann, B. Pietka, D. Sarchi, V. Savona, M. Richard, R. André, L. S. Dang, J. Kasprzak, I. Carusotto "Bose-Einstein condensation of polaritons in microcavities" in Quantum Coherence in Solid State Systems, by B. Deveaud-Plédran, A. Quattropani and P. Schwendimann, eds. Vol. 171, 375-406 (IOS Press 2009). ISBN 978-1607500391

Participation to Physics Schools and Workshops

Jul 04st-15th 2011 — Joint ICARUS and Organic Electronics and Applications (OREA) workshop
Hybrid Organic-Inorganic Nanostructures for Photonics and Optoelectronics
Invited tutorial talk with title: "Exciton Polariton Condensates in CdTe Microcavities: From Fundamental Properties to Applications"
Chania, Crete, Greece

Sep 20th-29th 2009 — Cambridge University-ITAP Workshop on Excitonic & Atomic condensation
Electronic/Optical Coherence in Low Dimensional Semiconductors and Atomic Gases
Talk with title "Observation of Half Quantum Vortices in an Exciton-polariton condensate"
Institute of Theoretical and Applied Physics, Turunc/Marmaris, Turkey

Jul 01st-11th 2008 — International School of Physics "Enrico Fermi"
CLXXI Course: Quantum Coherence in Solid State Physics
Posters with title "Quantised Vortices in an Exciton polariton condensate" and "Formation Dynamics of an Exciton Polariton Condensate"
Villa Monastero -Varenna, Italy

Participation to Scientific Conferences

Dec 10th-12th 2012 **Army Research Office MURI review on Multi-Functional Light-Matter Interfaces Based on Neutral Atoms and Solids 2012**
Invited talk with title "Quantum interfaces and quantum nodes with InAs/GaAs quantum dots"
UCSB, Santa Barbara, California, United States

Sep 11th-16th 2011 **Bose Einstein Condensation 2011: Frontiers in Quantum Gases**
Invited talk with title "Ultrafast Dynamics of Conventional and Unconventional Vorticity in Exciton-Polariton Condensates"
Sant Feliu de Guixols, Costa Brava, Spain

May 2nd-6th 2011 **Conference on Cold Atoms, Semiconductor Polaritons and Nanoscience**
Poster with title "Dynamics of Quantized Vortices in Driven-Dissipative Polariton Condensates"
Chersonisos, Crete, Greece

Apr 4th-8th 2011 **11th International Conference on Physics of Light-Matter Coupling in Nanostructures**
Talk with title "Probing the Dynamics of Spontaneous Quantum Vortices in Polariton Condensates"
Berlin, Germany

Feb 7st-11th 2011 **5th International Conference on Spontaneous Coherence in Excitonic Systems**
Invited talk with title "Dynamics of Vortices and Josephson Oscillations in Polariton Condensates"
EPFL, Lausanne, Switzerland.

Jun 21st-22nd 2010 **Annual Meeting of the Swiss Physical Society 2010**
Invited talk with title "Observation Of Half Vortices In An Exciton-Polariton Condensate"
Basel, Switzerland

May 31st-Jun 4th 2010 **37th International Symposium on Compound Semiconductors**
Invited talk with title "Fractional Vorticity in Exciton-Polariton Condensates"
Takamatsu Symbol Tower, Kagawa, Japan.

Apr 12th-16th 2010 **10th International Conference on Physics of Light-Matter Coupling in Nanostructures**
Invited talk with title "Conventional and Unconventional Vorticity in Exciton Polariton Condensates"
Cuernavaca, Mexico

Jan 23rd-29th 2010 **SPIE OPTO: Optoelectronic Materials, Devices and Applications Symposium.**
Ultrafast Phenomena in Semiconductors and Nanostructure Materials XIV conference
Invited talk with title "Ultrafast Dynamics of Exciton-Polariton Condensates in II-VI Semiconductor Microcavities"
San Francisco, California, United States

Nov 6th 2009	**EPFL Photonics Day 2009** Invited talk with title "Non Conventional Vorticity in an Exciton Polariton Condensate" Lausanne, Switzerland
Nov 2nd 2009	**CNRS-CRHEA Seminar on Polaritons and Solitons in Semiconductor Microcavities** Invited talk with title "Single and Half Quantum Vortices in an Exciton-polariton condensate" Sophia Antipolis, Nice, France
Sep 7th-11th 2009	**11th Conference on the Optics of Excitons in Confined Systems** Poster with title "Observation of Half Quantum Vortices in an Exciton-polariton condensate" Madrid, Spain
Sep 2nd-4th 2009	**Joint Annual Meeting of the Austrian Physical Society and Swiss Physical Society 2009** Talk with title "Observation of Novel Vortical Entities in an Exciton-Polariton Condensate" Innsbruck, Austria
Jul 08th-09th 2009	**NCCR Quantum Photonics General Assembly 2009** Poster with title "Observation of Half Quantum Vortices in an Exciton-polariton condensate" Munchenwiler - Morat, Switzerland
Apr 16th-20th 2009	**9th International Conference on Physics of Light-Matter Coupling in Nanostructures** Talk with title "Novel Vortical Entities in an Exciton-Polariton Condensate" Lecce, Italy
Sep 08th-12th 2008	**4th International Conference of Spontaneous Coherence in Excitonic Systems** Talk with title "Quantized Vortices in an Exciton-Polariton Condensate" Cambridge, United Kingdom
Sep 04th-05th 2008	**NCCR Quantum Photonics General Assembly 2008** Posters with title "Quantised Vortices in an Exciton-polariton condensate" and "Formation Dynamics of an Exciton-Polariton Condensate" Ovronnaz - Valais, Switzerland
Mar 26th-27th 2008	**Annual meeting of the Swiss Physical Society 2008** Invited talk with title "Vortices in a Polariton Condensate" Geneva, Switzerland
Jan 28th-30th 2008	**2008 Latsis Symposium Bose Einstein Condensation in dilute atomic gases and in condensed matter** Lausanne, Switzerland
Sep 12th-15th 2007	**10th Conference on the Optics of Excitons in Confined Systems** Talk with title "Mode Locking of an Exciton-Polariton BEC" Pati - Sicely, Italy

Jan 15th-19th 2007	**3rd International Conference on Spontaneous Coherence in Excitonic Systems** Les Houches, France

Teaching

1st Semester 09-10	Exercise sessions for the course General Physics I for students of earth and enviromental science at UNIL. Professor Minh Tam Tran.
2nd Semester 09	Exercise sessions for the course General Physics II for students of earth and enviromental science at UNIL. Professor Silvia Arsenet.
1st Semester 08-09	Exercise sessions for the course General Physics III for students in chemistry and life sciences at EPFL. Professor Giovanni Dietler.
2nd Semester 08:	Practical Laboratory for the group of science and technology of the living at EPFL, exercise "solar and fuel cells". Professor Robert Schaller.

Skills

Experimental:	Magnetospectroscopy, coherent control, ultrafast spectroscopy, pump-probe technique, streak camera, fibre optics, interferometry, imaging, refractometry, CW and ultrafast lasers, electronics.
Nanofabrication:	Photolithography (Karlsuss), E-beam lithography (RAITH), dry etching (PQuest and OXFORD plasma lab), wet etching, wire bonding, white light interferometry and stylus profiler (Zygo, Alphastep).
Languages:	**English**: Cambridge First Certificate (Grade B), TOEFL (Overall 270/300, Writing 5/6) **French**: (CEL level B2) **German**: (CEL level beginner) **Greek**: Native language
Computing:	Windows, Microsoft Office, LaTeX, Labview, Mathematical software for data analysis and simulations (Igor Pro by Wavemetrics)
Driving:	European driving licence (car, motorcycle), speedboat licence, California driving licence (car, motorcycle)
Scuba Diving:	National Commercial Diving School of Greece in Kalymnos, PADI Nitrox diver, CMAS Advanced Nitrox Diver, TDI Extended Range Diver.

Interests

Travelling, scuba diving, photography, skiing, reading, motorbike maintenance, electronics, hiking, cinema, music.

References

Prof. Jelena Vuckovic	*jela@stanford.edu*
Prof. Benoit Deveaud Plédran	*benoit.deveaud-pledran@epfl.ch*
Prof. Vincenzo Savona	*vincenzo.savona@epfl.ch*
Prof. Pierre Meystre	*pierre@optics.arizona.edu*
Prof. Le Si Dang	*lesidang@grenoble.cnrs.fr*