

# PLMCN10 scientific program

**Monday, 12<sup>th</sup> April**

8h45	PLMCN10 OPENING	
9h	Lasing oscillation in a strongly coupled single- quantum-dot-nanocavity system Yasuhiko Arakawa (University of Tokyo, Japan)	Mo-10 – p. 1
9h40	Spontaneous formation of polariton condensate with macroscopic spatial coherence Esther Wertz (CNRS-Laboratoire de Photonique et de Nanostructures, Marcoussis, France)	Mo-11 – p. 2
10h	Mechanism for suppression of free exciton no-phonon emission in ZnO tetrapod nanostructures Irina Buyanova (Linköping Univeristy, Sweden)	Mo-12 – p. 3
10h20	Polariton lasing of ZnO whispering gallery microcavity at room temperature Zhanghai Chen (Fudan University, Shanghai, China)	Mo-13 – p. 4
10h40	Crystal phase quantum dots Nika Akopian (Delft University of Technology, The Netherlands)	Mo-14 – p. 5
11h	COFFEE BREAK	
11h30	Light mediated superconductivity Fabrice P. Laussy (University of Southampton, UK)	Mo-20 – p. 6
12h10	Optically induced superconductivity Chris Coulson (University of Cambridge, UK)	Mo-21 – p. 7
12h30	Single photons from coupled quantum modes Tim Liew (Ecole Polytechnique Fédérale de Lausanne, Switzerland)	Mo-22 – p. 8
12h50	Propagation of polariton fluids and its control Tomas Ostatnický (University of Southampton, UK)	Mo-23 – p. 9
13h10	LUNCH	
15h	Persistent currents and quantised vortices in OPO superfluids Francesca M. Marchetti (Universidad Autónoma de Madrid, Spain)	Mo-30 – p. 10
15h40	Observation of permanent flow of vortices in superfluid polariton condensates Guilherme Tosi (Universidad Autónoma de Madrid, Spain)	Mo-31 – p. 11
16h	Probing the Bogoliubov excitation spectrum of a coherent polariton gas by heterodyne four-wave-mixing spectroscopy Verena Kohnle (Ecole Polytechnique Fédérale de Lausanne, Switzerland)	Mo-32 – p. 12
16h20	BEC of trapped quantum well and graphene polaritons in a microcavity Oleg Berman (The City University of New York, USA)	Mo-33 – p. 13
16h40	COFFEE BREAK	
17h10	Vortices and spatial coherence in non-equilibrium polariton condensate Dmitriy N. Krizhanovskii (University of Sheffield, UK)	Mo-40 – p. 14
17h50	Pinning and depinning of the polarization of exciton-polariton condensates at room temperature Jacques Levrat (Ecole Polytechnique Fédérale de Lausanne, Switzerland)	Mo-41 – p. 15
18h10	Manipulation of polaritons and polariton condensates with surface acoustic waves Edgar A. Cerda-Méndez (Paul-Drude-Institut, Berlin, Germany)	Mo-42 – p. 16
18h30	The all optical spin Hall effect Maria Maragkou (University of Southampton, UK)	Mo-43 – p. 17
18h50		

## Tuesday, 13<sup>th</sup> April

9h	Optical properties of graphite and graphene Igor Lukyanchuk (University of Picardy, Amiens, France)	Tu-10 – p. 18
9h40	Coherent magneto-optical polarisation dynamics in a single chiral carbon nanotube Gaby Slavcheva (Imperial College London, UK)	Tu-11 – p. 19
10h	Exciton-plasmon coupling and biexcitonic nonlinearities in individual carbon nanotubes Igor Bondarev (North Carolina Central University, USA)	Tu-12 – p. 20
10h20	Ab-initio calculations of electronic and optical properties of graphane and related 2-D systems Olivia Pulci (Università di Roma Tor Vergata, Italy)	Tu-13 – p. 21
10h40		
11h	<b>COFFEE BREAK</b>	
11h30	Zero-phonon line shape in single InAs/GaAs quantum dots Guillaume Cassabois (Laboratoire Pierre Aigrain-ENS, Paris, France)	Tu-20 – p. 22
12h10	Phonon coupling to exciton complexes in single quantum dots Fredrik Karlsson (Linköping University, Sweden)	Tu-21 – p. 23
12h30	Spin polarization of the neutral exciton in a single quantum dot Per Olof Holtz (Linköping University, Sweden)	Tu-22 – p. 24
12h50	Subnanosecond spectral diffusion of a single quantum dot in a nanowire Jean-Philippe Poizat (Université Joseph Fourier, Grenoble, France)	Tu-23 – p. 25
13h10	<b>LUNCH</b>	
15h	Silicon nanocrystals and nanowires: ab-initio structural, electronic and optical properties Stefano Ossicini (Università di Modena e Reggio Emilia, Italy)	Tu-30 – p. 26
15h40	Anomalous transmission of light in one dimensional nanostructural porous silicon photonic crystals Antonio del Río (Centro de Investigación en Energía, UNAM, Temixco, México)	Tu-31 – p. 27
16h	Physical properties of highly uniform InGaAs pyramidal quantum dots with GaAs barriers: the fine structure splitting Lorenzo Osondu Mereni (University College of Cork, Ireland)	Tu-32 – p. 28
16h20	Scaling of Dye Solar Cells: from single cells to modules and panels Stefano Penna (Università di Roma Tor Vergata, Italy)	Tu-33 – p. 29
16h40	<b>CHIPS &amp; BEER</b>	
17h10	Poster Session	P-01 to P-31
18h40		p. 63 to p. 93



## Wednesday, 14<sup>th</sup> April

### CONFERENCE EXCURSION

# Thursday, 15<sup>th</sup> April

9h	Bloch-polaritons in multiple-quantum-well photonic crystals Vinod M. Menon (City University of New York, USA)	Th-10 – p. 30
9h40	Hybrid state of Tamm plasmons and exciton polariton Richard Abram (Durham University, UK)	Th-11 – p. 31
10h	Strong coupling between Tamm plasmon and QW exciton Estelle Homeyer (Université Lyon 1, France)	Th-12 – p. 32
10h20	FIR absorption by plasmons in a 2D semimetal Alexander V. Chaplik (Institute of Semiconductor Physics, Novosibirsk, Russia)	Th-13 – p. 33
10h40	Plasmonic nanostars: stochastic optimization of resonant properties Demetrio Macías (Université de technologie de Troyes, France)	Th-14 – p. 34
11h	COFFEE BREAK	
11h30	Exciton transport and spin transport Leonid Butov (University of California at San Diego, USA)	Th-20 – p. 35
12h10	Non-local polariton spin switches Claire Adrados (Université Pierre et Marie Curie, Paris, France)	Th-21 – p. 36
12h30	Polariton condensation in trap microcavities: an analytical approach Carlos Trallero-Giner (Universidad de la Habana, Cuba)	Th-22 – p. 37
12h50	Spatial and relaxation dynamics of 0-D polaritons Roland Cerna (Ecole Polytechnique Fédérale de Lausanne, Switzerland)	Th-23 – p. 38
13h10	LUNCH	
15h	Fractional and full vortices in exciton-polariton condensates Konstantinos G. Lagoudakis (Ecole Polytechnique Fédérale de Lausanne, Switzerland)	Th-30 – p. 39
15h40	Controlling the charge state of a single quantum dot by means of temperature and external magnetic field Arvid Larsson (Linköping University, Sweden)	Th-31 – p. 40
16h	Coherent quasimodes and supermodes in a planar microcavity Felix Becker (Technische Universität Dresden, Germany)	Th-32 – p. 41
16h20	Polariton light emitting devices: efficiency and relaxation dynamics Simeon Tsintzos (University of Crete, Heraklion, Greece)	Th-33 – p. 42
16h40	COFFEE BREAK	
17h10	Single vortex-antivortex pair in an exciton polariton condensate Georgios Roumpos (Stanford University, USA)	Th-40 – p. 43
17h50	Vortex-antivortex pair dynamics in an exciton-polariton condensate Michael Fraser (University of Tokyo, Japan)	Th-41 – p. 44
18h10	Ultrafast control of polariton stimulated scattering in semiconductor microcavities Cornelius Grossmann (University of Cambridge, UK)	Th-42 – p. 45
18h30	Polariton-polariton interaction constants in microcavities Masha Vladimirova (University Montpellier 2, France)	Th-43 – p. 46
18h50		
20h	CONFERENCE BANQUET	

# Friday, 16<sup>th</sup> April

9h	Superfluidity of polariton condensates Alberto Amo (Université Pierre et Marie Curie, Paris, France)	Fr-10 – p. 47
9h40	Light-matter coupling in bulk ZnO microcavities at room temperature: from strong-coupling to polariton lasing Jesús Zúñiga Pérez (CRHEA-CNRS, Valbonne, France)	Fr-11 – p. 48
10h	Size-dependent recombination dynamics in ZnO nanowires Juan Sebastián Reparaz (Technische Universität Berlin, Germany)	Fr-12 – p. 49
10h20	Giant Rabi splitting in metal/semiconductor nanohybrids Joel Bellessa (Université Lyon 1, France)	Fr-13 – p. 50
10h40	Pump-probe degenerate scattering of polaritons in a multiple microcavity Timothée Lecomte (Université Paris 6, France)	Fr-14 – p. 51
11h	COFFEE BREAK	
11h30	Microcavity-mediated coupling of two distant semiconductor quantum dots José Manuel Calleja (Universidad Autónoma de Madrid, Spain)	Fr-20 – p. 52
12h10	Spectral and distance control of quantum dots to plasmonic nanoparticles interactions Pierre-Michel Adam (Université de technologie de Troyes, France)	Fr-21 – p. 53
12h30	Non-linear interactions in micropillar polariton condensates Lydie Ferrier (CNRS-Laboratoire de Photonique et de Nanostructures, Marcoussis, France)	Fr-22 – p. 54
12h50	Optical Hall effect in InN: bulk doping mechanism and surface electron accumulation properties Vanya Darakchieva (Instituto Tecnológico e Nuclear, Portugal)	Fr-23 – p. 55
13h10	LUNCH	
15h	A new mechanism of dynamic nuclear pumping evidenced by anomalous Hanle effect in InAs-GaAs quantum dots Paul Voisin (CNRS-Laboratoire de Photonique et de Nanostructures, Marcoussis, France)	Fr-30 – p. 56
15h40	Room temperature polarized single photon source with a colloidal dot in rod Godefroy Leménager (Université Pierre et Marie Curie, Paris, France)	Fr-31 – p. 58
16h	Giant light absorption and collection efficiency in GaAs-gold nanowire arrays for photovoltaic applications Jean-Luc Pelouard (CNRS-Laboratoire de Photonique et de Nanostructures, Marcoussis, France)	Fr-32 – p. 59
16h20	PLMCN10 CLOSING & BEST POSTER AWARD CEREMONY	
16h40	ANNOUNCEMENT OF PLMCN11	



## Poster Session (Tuesday 13<sup>th</sup> April)

- P-01 – p. 63 Analytical description of the 2-dimensional exciton diffusion in circular geometry  
Andrey Polyakov (Otto-von-Guericke-University Magdeburg, Germany)
- P-02 – p. 64 Optical investigation of hybrid GaN based microcavity with AlInN/GaN bottom and dielectric top distributed Bragg mirrors  
Barbara Bastek (Otto-von-Guericke-University Magdeburg, Germany)
- P-03 – p. 65 Intense laser effects for a donor impurity in cylindrical quantum dots under applied electric field and hydrostatic pressure  
Carlos Alberto Duque Echeverri (Universidad de Antioquia, Medellín, Colombia)
- P-04 – p. 66 Excitons in Pöschl-Teller quantum dots  
Carlos Alberto Duque Echeverri (Universidad de Antioquia, Medellín, Colombia)
- P-05 – p. 67 Optical properties of hybrid periodic/quasiregular dielectric porous silicon multilayers  
Carlos Alberto Duque Echeverri (Universidad de Antioquia, Medellín, Colombia)
- P-06 – p. 68 Hydrostatic pressure and electric field effects and nonlinear optical rectification of confined excitons in spherical quantum dots  
Carlos Mario Duque (Universidad de Antioquia, Medellín, Colombia)
- P-07 – p. 69 Donor impurity states in coupled quantum well wires under hydrostatic pressure and applied electric field  
Edwin Tangarife Franco (Universidad de Antioquia, Medellín, Colombia)
- P-08 – p. 70 Dephasing of strong-coupling in the nonlinear regime  
Fabrice P. Laussy (University of Southampton, UK)
- P-09 – p. 71 Coherent spin relaxation dynamics of positive trions in p-doped InAs/GaAs quantum dots  
Gaby Slavcheva (Imperial College London, UK)
- P-10 – p. 72 Surface recombination effect on exciton dynamics in nanocrystal ZnO  
Galia Pozina (University of Linköping, Sweden)
- P-11 – p. 73 Combined effects of electric field and hydrostatic pressure on electron states in asymmetric GaAs/(Ga, Al) triple quantum dots  
Guillermo León Miranda Pedraza (Universidad de Antioquia, Medellín, Colombia)
- P-12 – p. 74 Hybrid planar microresonator with organic and InGaAs active media  
Jose Roberto Mialichi (University of Campinas, Brasil)
- P-13 – p. 75 Energy spectrum of an artificial molecular complex in toroidal quantum rings  
Maestria Marlon Rincon Fulla (Universidad Nacional de Colombia, Medellín, Colombia)
- P-14 – p. 76 Spectral properties of two-electron vertically coupled in toroidal quantum rings  
Maestria Marlon Rincon Fulla (Universidad Nacional de Colombia, Medellín, Colombia)
- P-15 – p. 77 Dielectric function of exciton-polaritons in ZnO  
Markus Wagner (Technische Universitaet Berlin, Germany)
- P-16 – p. 78 Effects of TE-TM splitting of polariton band on half-vortices in exciton-polariton condensates  
Miller Toledo Solano (Centro de Investigación en Energía, UNAM, Temixco, México)
- P-17 – p. 79 BEC and superfluidity of excitons and biexcitons in graphene and quantum wells in high magnetic field  
Oleg Berman (The City University of New York, USA)
- P-18 – p. 80 Analysis for quantum dots with oxide overlayer by spectroscopic ellipsometry  
Seung-Ho Han (Kyung Hee University, Korea)
- P-19 – p. 81 Density of states in randomly shaped graphene quantum dots  
Tania Espinosa Ortega (Centro de Investigación en Energía, UNAM, Temixco, México)
- P-20 – p. 82 Exciton-polariton mediated superconductivity in semiconductors  
Thomas Taylor (University of Southampton, UK)
- P-21 – p. 83 Self-assembling conditions of 104Ca clusters in ZnS-rich Ca(x)Zn(1-x)S alloys doped with oxygen  
Vyacheslav A. Elyukhin (Centro de Investigacion y de Estudios Avanzados del Instituto Politecnico Nacional, Mexico)
- P-22 – p. 84 Self-assembling of isoelectronic impurities in semiconductors  
Vyacheslav A. Elyukhin (Centro de Investigacion y de Estudios Avanzados del Instituto Politecnico Nacional, Mexico)
- P-23 – p. 85 Effect of the shape of vertically coupled quantum rings on the energy levels and far-infrared spectrum  
Freyd Rodriguez Prada (Universidad Industrial de Santander, Colombia)
- P-24 – p. 86 Stability of half-vortices in exciton-polaritons condensates  
Hugo Flayac (Université Blaise Pascal, Clermont-Ferrand, France)
- P-25 – p. 87 Optical and structural properties of WO<sub>3</sub> annealed films deposited by hot-filament metal oxide deposition  
Joel Díaz-Reyes (CIBA-IPN, Tlaxcala, Mexico)
- P-26 – p. 88 Structural and optical characterization of ZnO nanolayers grown by chemical bath activated by means microwaves  
Joel Díaz-Reyes (CIBA-IPN, Tlaxcala, Mexico)
- P-27 – p. 89 Effect of thickness on the photoluminescent and optical properties in silicon nitride thin films with silicon nanoclusters  
Juan Carlos Alonso Huitrón (Universidad Nacional Autónoma de México, Coyoacán, Mexico)
- P-28 – p. 90 Quantized states of exciton-polaritons condensate in microcavity  
M. Lazzem (Faculté des Sciences de Bizerte, Tunisia)
- P-29 – p. 91 Analysis of the particle liberation of SiO<sub>2</sub>, from rice husk, using spectroscopy DRIFT  
Valentin Lopez Gayou (CIBA-IPN, Tlaxcala, Mexico)
- P-30 – p. 92 Biosynthesis of gold nanoparticles using fermented broth of the fungus Pleurotus Ostreatus  
Valentin Lopez Gayou (CIBA-IPN, Tlaxcala, Mexico)
- P-31 – p. 93 Impurity effects on energy levels and far-infrared spectra of oval-shaped quantum nanorings  
Willian Gutierrez Niño (Universidad Industrial de Santander, Colombia)