Timothy C. H. Liew

Education

2008 **Ph.D. Physics**, *University of Southampton*, Southampton, UK.
Polarization dependent effects in Exciton-Polariton systems in semiconductor microcavities

2005 **MPhys. Master of Physics**, *University of Southampton*, Southampton, UK, *1st class honours*.

Publication & Presentations Summary

147 papers, *in peer-reviewed international journals including Nature (2), Nature Physics (2), Nature Photonics, Nature Materials, Nature Communications (2), Nano Letters (3), Science Advances, 3 invited review papers and 28 papers in Physical Review Letters*.

h-index : 36, *from Web of Science*.

41 presentations at international conferences, *including 1 plenary talk and 22 invited talks*.

Grants & Awards

Mar 2021 **School of Physical & Mathematical Sciences Young Researcher Award**, *Nanyang Technological University*, Singapore.

Jan 2020 - Dec 2023 **Ministry of Education Academic Research Fund (AcRF) Tier 2 Grant**, *Nanyang Technological University*, Singapore, 36 months, SGD 878,816.

Jan 2018 - Dec 2020 **Ministry of Education Academic Research Fund (AcRF) Tier 2 Grant**, *Nanyang Technological University*, Singapore, 36 months, SGD 737,370.

Nov 2016 - Oct 2018 **Ministry of Education Academic Research Fund (AcRF) Tier 1 Grant**, *Nanyang Technological University*, Singapore, 24 months, SGD 150,000.

Jan 2016 - Dec 2018 **Ministry of Education Academic Research Fund (AcRF) Tier 2 Grant**, *Nanyang Technological University*, Singapore, 36 months, SGD 636,036.

Jan 2016 - Dec 2018 **Discovery International Award**, *The Australian Research Council*, Australia, 36 months, AUD 10,000 (≈SGD 10,000).

Apr 2015 - Mar 2020 **Nanyang Assistant Professor Start-up grant**, *Nanyang Technological University*, Singapore, 60 months, SGD 1,046,500.

Feb 2013 - Jan 2015 **Lee Kuan Yew Postdoctoral Fellowship**, *the Lee Kuan Yew Endowment Fund*, Singapore, 24 months, SGD 180,000 (exclusive of manpower support).

Mar 2012 - Feb 2014 **Marie-Curie Intra-European Fellowship for Career Development**, *the European Commission*, Belgium, 24 months, EUR 185,763 (≈SGD 291,274).

Teaching Summary

2014-present **Analytical Mechanics**, *2nd/3rd year course coordinator*, 105 students (2014), 142 students (2015), 129 students (2016), 121 students (2017), 105 students (2018), 96 students (2019), 75 students (2020).

Division of Physics & Applied Physics, School of Physical & Mathematical Sciences
Nanyang Technological University, 637371, Singapore.
tchliew@gmail.com

2018 **Teaching Excellence Award, School of Mathematical and Physical Sciences**.

Physics Laboratory, *1st year course instructor*, 96 students (2018).

Invited lecture course, *Polaritonics (6 hours)*, QuEST (Quantum Engineering Science and Technologies) School "Quantum Technologies with Light", UMI Majulab, Singapore (2018).

2013 **Classical Mechanics**, *2nd/3rd year course coordinator*, 41 students (2013).

2012 **Invited lecture course**, *Semiconductor microcavities and polaritonic devices (3 hours)*, Nonlinear Physics Centre, The Australian National University, Canberra, Australia (2012).

Invited lecture course, *Spin-related phenomena in quantum microcavities (8 hours)*, School of Spin-Related Phenomena in Mesoscopic Transport, Stockholm, Sweden (2012).

Employment

Associate Professor

Mar 2021–present **School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore**, *Associate Professor.*.

Assistant Professor

Apr 2015–Feb 2021 **School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore**, *Nanyang Assistant Professor. Graduated 3 PhD students plus 2 PhD students (co-supervised).*

Third Postdoctoral Period

Jan 2013–Mar 2015 **School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore**, *Lee Kuan Yew Postdoctoral Fellow. Undergraduate lecture courses. Co-supervision of PhD candidates.*

Mar 2012–Dec 2012 **Mediterranean Institute of Fundamental Physics, Italy**, *(Joint) Marie-Curie Postdoctoral Fellow. Optoelectronic and quantum employment in semiconductors.*

Feb 2012–Dec 2012 **School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore**, *Photonic and quantum devices based on semiconductor heterostructures.*

Short Research Visit

Oct 2011–Jan2012 **Centro de Investigación en Energía, Universidad Nacional Autónoma de México, México**, *Spin textures and pattern formation in spinor Bose-Einstein condensates.*

Second Postdoctoral Period

Sep 2009–Sep2011 **Institute of Theoretical Physics, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland**, *Quantum and Nonlinear effects in semiconductor nanostructures.*

First Postdoctoral Period

Sep 2008–Aug 2009 **Centre for Quantum Technologies, National University of Singapore, Singapore**, *Quantum Information and Single-atom optics.*

PhD students

current **Mr. Huawen Xu**, *Thesis title – "Quantum Optics of Exciton-Polariton Networks".*

Ms. Jinqi Wu, *Thesis title – "Polariton parametric scattering at room temperature".*

Mr. Ruiqu Bao, *Thesis title – "Networks of Bose-Einstein Condensates in Exciton-Polariton Lattices"*.

2021 **Ms. Rimi Banerjee**, *Thesis title – "Nonlinear Optics of Coupled Nanophotonic Resonators"*.

Mr. Subhaskar Mandal, *Thesis title – "Dynamics of Light-Matter Coupled Quasiparticles"*.

2018 **Dr. Kristín Arnardottir**, *Thesis title – "Cavity QED effects in low-dimensional structures in the strong coupling regime"*.

2016 **Dr. Helgi Sigurdsson**, *Thesis title – "nanostructures with quantized angular momentum in the strong-coupling regime"*, (co-supervised).

Dr. Skender Morina, *Thesis title – "Charge and spin transport in 2D light-matter coupling systems"*, (co-supervised).

Undergraduate student training

current **Mr. Seet Wei En Nathan**, *Topological Exciton-polaritons without a magnetic field*, Final Year Project.

Mr. Michael Go, *Exciton-polariton multilayered neural networks*, Final Year Project.

2019 **Mr. Uddalok Nag**, *Optical control of electron valley Hall effect in Dirac materials*, NTU-India connect summer internship.

2018 **Mr. Xuan Thanh Nguyen**, *Dispersion of bulk exciton polaritons in a semiconductor microcavity*, Bachelor's thesis of exchange student at the University of Science, Ho Chi Minh City, Vietnam.

Mr. En Zhi Tan, *Spatial dynamics of exciton-polariton condensates in inhomogeneous potentials*, Overseas Final Year Project.

Mr. Arpit Raj, *Studying the effect of birefringence in topological polaritons and excitons in garden-variety systems*, NTU-India connect summer internship.

Mr. Prashant Chandel, *Selecting Quantum States via Quantum Interference in Coupled Mode Systems*, Visiting student from IIT-Delhi.

2017 **Mr. En Zhi Tan**, *Uni-directional flow of lossless exciton-polariton signals/Multistability of non-resonantly excited exciton-polaritons*, CNYang Summer Project 2017/CNYang Research Attachment.

Mr. Leonardus, *Ant-like agents on Braess' Paradox*, PH2999 - Undergraduate Research Experience.

Publications in Peer-reviewed International Journals

2021 **"Spontaneously coherent orbital coupling of counterrotating exciton polaritons in annular perovskite microcavities"**, *J. Wang, H. Xu, R. Su, Y. Peng, J. Wu, T. C. H. Liew, & Q. Xiong*, Light Sci. Appl., **10**, 45 (2021), Impact Factor : 14.000.

"Room Temperature Light-Mediated Long-Range Coupling of Excitons in Perovskites", *T. Krisnanda, Q. Zhang, K. Dini, D. Giovanni, T. C. H. Liew, & T. C. Sum*, Adv. Optical Mater., **2021**, 2001835 (2021), Impact Factor : 8.286.

"Creating and concentrating quantum resource states in noisy environments using a quantum neural network", *T. Krisnanda, S. Ghosh, T. Paterek, & T. C. H. Liew*, Neural Netw., **136**, 141 (2021), Impact Factor : 7.197.

All citation counts are taken from Web of Science

2020 **"Electrically controllable router of interlayer excitons"**, *Y. Liu, K. Dini, Q. Tan, T. Liew, K. S. Novoselov, & W. Gao*, Sci. Adv., **6**, eaba1830 (2020), Impact Factor : 13.116.

"Artificial life in an exciton-polariton lattice", *R. Banerjee & T. C. H. Liew*, New J. Phys., **22**, 103062 (2020), Impact Factor : 3.539.

"Nonreciprocal Transport of Exciton Polaritons in a Non-Hermitian Chain", *S. Mandal, R. Banerjee, E. A. Ostrovskaya, & T. C. H. Liew*, Phys. Rev. Lett., **125**, 123902 (2020), Impact Factor : 9.227.

"Reconstructing Quantum States With Quantum Reservoir Networks", *S. Ghosh, A. Opala, M. Matuszewski, T. Paterek, & T. C. H. Liew*, IEEE T. Neur. Net. Lear., **10.1109/TNNLS.2020.3009716** (2020), Impact Factor : 11.683.

"Universal Self-Correcting Computing with Disordered Exciton-Polariton Neural Networks", *H. Xu, S. Ghosh, M. Matuszewski, & T. C. H. Liew*, Phys. Rev. Appl., **13**, 064074 (2020), Impact Factor : 4.194.

"Polaritonic Neuromorphic Computing Outperforms Linear Classifiers", *D. Ballarini, A. Gianfrate, R. Panico, A. Opala, S. Ghosh, L. Dominici, V. Ardizzone, M. De Giorgi, G. Lerario, G. Gigli, T. C. H. Liew, M. Matuszewski, & D. Sanvitto* , Nano Lett., **20**, 3506 (2020), Impact Factor : 12.344.

"Emergence of microfrequency comb via limit cycles in dissipatively coupled condensates", *S. Kim, Y. G. Rubo, T. C. H. Liew, S. Brodbeck, C. Schneider, S. Höfling, & H. Deng*, Phys. Rev. B, **101**, 085302 (2020), Impact Factor : 3.836.

"Coupling between Exciton-Polariton Corner Modes through Edge States", *R. Banerjee, S. Mandal, & T. C. H. Liew*, Phys. Rev. Lett., **124**, 063901 (2020), Impact Factor : 9.227.

"Quantum computing with exciton-polariton condensates", *S. Ghosh & T. C. H. Liew*, npj Quantum Info., **123**, 260404 (2020), Impact Factor : 8.270.

"Robust Room Temperature Valley Hall Effect of Interlayer Excitons", *Z. Huang, Y. Liu, K. Dini, Q. Tan, Z. Liu, H Fang, J. Liu, T. Liew, & W. Gao*, Nano Lett., **20**, 1345 (2020), Impact Factor : 12.344.

"Observation of exciton polariton condensation in a perovskite lattice at room temperature", *R. Su, S. Ghosh, J. Wang, S. Liu, C. Diederichs, T. C. H. Liew, & Q. Xiong* , Nature Phys., **16**, 301 (2020), Impact Factor : 20.113.

2019 **"Quantum Neuromorphic Platform for Quantum State Preparation"**, *S. Ghosh, T. Paterek, & T. C. H. Liew*, Phys. Rev. Lett., **123**, 260404 (2019), Impact Factor : 9.227.

"On the possibility of a terahertz light emitting diode based on a dressed quantum well", *S. Mandal, K. Dini, O. V. Kibis, & T. C. H. Liew*, Sci. Rep., **9**, 16320 (2019), Impact Factor : 4.011.

"One-Way Reflection-Free Exciton-Polariton Spin-Filtering Channel", *S. Mandal, R. Banerjee, & T. C. H. Liew*, Phys. Rev. Appl., **12**, 054058 (2019), Impact Factor : 4.782.

"Polarization-dependent light-matter coupling and highly indistinguishable resonant fluorescence photons from quantum dot-micropillar cavities with elliptical cross section", *S. Gerhardt, M. Deppisch, S. Betzold, T. H. Harder, T. C. H. Liew, A. Predojević, S. Höfling, & C. Schneider*, Phys. Rev. B, **100**, 115305 (2019), Impact Factor : 3.836.

"Direct measurement of polariton-polariton interaction strength in the Thomas-Fermi regime of exciton-polariton condensation", *E. Estrecho, T. Gao, N. Bobrovska, D. Comber-Todd, M. D. Fraser, M. Steger, K. West, L. N. Pfeiffer, J. Levinsen, M. M. Parish, T. C. H. Liew, M. Matuszewski, D. W. Snoke, A. G. Truscott, & E. A. Ostrovskaya*, Phys. Rev. B, **100**, 035306 (2019), Impact Factor : 3.836.

"Dynamical Blockade in a Single-Mode Bosonic System", *S. Ghosh & T. C. H. Liew*, Phys. Rev. Lett., **123**, 013602 (2019), Impact Factor : 9.227.

"Neuromorphic Computing in Ginzburg-Landau Polariton-Lattice Systems", *A. Opala, S. Ghosh, T. C. H. Liew, & M. Matuszewski*, Phys. Rev. Appl., **11**, 064029 (2019), Impact Factor : 4.782.

"Probabilistic solving of NP-hard problems with bistable nonlinear optical networks", *O. Kyriienko, H. Sigurdsson, & T. C. H. Liew*, Phys. Rev. B, **99**, 195301 (2019), Impact Factor : 3.836.

"Quantum Reservoir Processing", *S. Ghosh, A. Opala, M. Matuszewski, T. Paterek, & T. C. H. Liew*, npj Quantum Info., **5**, 35 (2019), Impact Factor : 8.270.

"Antichiral edge states in an exciton polariton strip", *S. Mandal, R. Ge, & T. C. H. Liew*, Phys. Rev. B, **99**, 115423 (2019), Impact Factor : 3.836.

"Nonresonant spin selection methods and polarization control in exciton-polariton condensates", *M. Klaas, O. A. Egorov, T. C. H. Liew, A. Nalitov, V. Marković, H. Suchomel, T. H. Harder, S. Betzold, E. A. Ostrovskaya, A. Kavokin, S. Klembt, S. Höfling, & C. Schneider*, Phys. Rev. B, **99**, 115303 (2019), Impact Factor : 3.836.

"All-to-All Intramodal Condensate Coupling by Multifrequency Excitation of Polaritons", *H. Sigurdsson, O. Kyriienko, K. Dini, & T. C. H. Liew*, ACS Photon., **6**, 123 (2019), Impact Factor : 6.880.

2018 **"Room temperature long-range coherent exciton polariton condensate flow in lead halide perovskites"**, *R. Su, J. Wang, J. Zhao, J. Xing, W. Zhao, C. Diederichs, T. C. H. Liew, & Q. Xiong*, Sci. Adv., **4**, eaau0244 (2018), Impact Factor : 11.51.

"Exciton-polariton topological insulator", *S. Klembt, T. H. Harder, O. A. Egorov, K. Winkler, R. Ge, M. A. Bandres, M. Emmerling, L. Worschech, T. C. H. Liew, M. Segev, C. Schneider, & S. Höfling*, Nature, **562**, 552 (2018), Impact Factor : 40.137, Citations : 9.

"Room Temperature Coherently Coupled Exciton-Polaritons in Two-Dimensional Organic-Inorganic Perovskite", *J. Wang, R. Su, J. Xing, D. Bao, C. Diederichs, S. Liu, T. C. H. Liew, Z. Chen, & Q. Xiong*, ACS Nano, **12**, 8382 (2018), Impact Factor : 13.709, Citations : 3.

"Realization of Hofstadter's butterfly and a one-way edge mode in a polaritonic system", *R. Banerjee, T. C. H. Liew, & O. Kyriienko*, Phys. Rev. B, **98**, 075412 (2018), Impact Factor : 3.836.

"Single-shot condensation of exciton polaritons and the hole burning effect", *E. Estrecho, T. Gao, N. Bobrovska, M. D. Fraser, M. Steger, L. Pfeiffer, K. West, T. C. H. Liew, M. Matuszewski, D. W. Snoke, A. G. Truscott, & E. A. Ostrovskaya*, Nature Comm., **9**, 2944 (2018), Impact Factor : 12.353, Citations : 3.

"Design for a Nanoscale Single-Photon Spin Splitter for Modes with Orbital Angular Momentum", *G. Li, A. S. Sheremet, R. Ge, T. C. H. Liew, & A. V. Kavokin*, Phys. Rev. Lett., **121**, 053901 (2018), Impact Factor : 9.227, Citations : 3.

"An exciton-polariton bolometer for terahertz radiation detection", *G. G. Paschos, T. C. H. Liew, Z. Hatzopoulos, A. V. Kavokin, P. G. Savvidis, & G. Deligeorgis*, Sci. Rep., **8**, 10092 (2018), Impact Factor : 5.228, Citations : 1.

"Single photons from a gain medium below threshold", *S. Ghosh & T. C. H. Liew*, Phys. Rev. B, **97**, 241301(R) (2018), Impact Factor : 5.1.

"Terahertz cascades from nanoparticles", *K. B. Arnardottir & T. C. H. Liew*, Phys. Rev. B, **97**, 195446 (2018), Impact Factor : 3.836.

"Floquet topological polaritons in semiconductor microcavities", *R. Ge, W. Broer, & T. C. H. Liew*, Phys. Rev. B, **97**, 195305 (2018), Impact Factor : 3.836, Citations : 1.

"Semiconductor quantum well irradiated by a two-mode electromagnetic field as a terahertz emitter", *S. Mandal, T. C. H. Liew, & O. V. Kibis*, Phys. Rev. A, **97**, 043860 (2018), Impact Factor : 2.925, Citations : 1.

"Synchronization crossover of polariton condensates in weakly disordered lattices", *H. Ohadi, Y. del Valle-Inclan Redondo, A. J. Ramsay, Z. Hatzopoulos, T. C. H. Liew, P. R. Eastham, P. G. Savvidis, & J. J. Baumberg*, Phys. Rev. B, **97**, 195109 (2018), Impact Factor : 3.836.

"Chiral Modes at Exceptional Points in Exciton-Polariton Quantum Fluids", *T. Gao, G. Li, E. Estrecho, T. C. H. Liew, D. Comber-Todd, A. Nalitov, M. Steger, K. West, L. Pfeiffer, D. W. Snoke, A. V. Kavokin, A. G. Truscott, and E. A. Ostrovskaya*, Phys. Rev. Lett., **120**, 065301 (2018), Impact Factor : 8.462, Citations : 3.

"Parity bifurcations in trapped multistable phase locked exciton-polariton condensates", *E. Z. Tan, H. Sigurdsson, & T. C. H. Liew*, Phys. Rev. B, **97**, 075305 (2018), Impact Factor : 3.836, Citations : 3.

"Unidirectional flow of lossless exciton-polariton signals", *E. Z. Tan & T. C. H. Liew*, J. Opt., **20**, 025503 (2018), Impact Factor : 2.059.

"Quantum exciton-polariton networks through inverse four-wave mixing", *T. C. H. Liew, & Y. G. Rubo*, Phys. Rev. B, **97**, 041302(R) (2018), Impact Factor : 5.1, Citations : 4.

"Optically induced transparency in bosonic cascade lasers", *T. C. H. Liew, & A. V. Kavokin*, Opt. Lett., **43**, 259 (2018), Impact Factor : 3.416.

2017 **"Parity solitons in nonresonantly driven-dissipative condensate channels"**, *H. Sigurdsson, T. C. H. Liew, & I. A. Shelykh*, Phys. Rev. B, **96**, 205406 (2017), Impact Factor : 3.836, Citations : 3.

"Driven-dissipative spin chain model based on exciton-polariton condensates", *H. Sigurdsson, A. J. Ramsay, H. Ohadi, Y. G. Rubo, T. C. H. Liew, J. J. Baumberg, & I. A. Shelykh*, Phys. Rev. B, **96**, 155403 (2017), Impact Factor : 3.836, Citations : 5.

"Tightly bound indirect exciton in single-layer hybrid organic-inorganic perovskite semiconductor", *J. Li, T. Liu, & T. C. H. Liew*, Superlattices Microstruct., **110**, 108 (2017), Impact Factor : 2.117.

"Spontaneous and superfluid chiral edge states in exciton-polariton condensates", *H. Sigurdsson, G. Li, & T. C. H. Liew*, Phys. Rev. B, **96**, 115453 (2017), Impact Factor : 3.836, Citations : 8.

"Kinetic Monte Carlo approach to nonequilibrium bosonic systems", *T. C. H. Liew, H. Flayac, D. Poletti, I. G. Savenko, & F. P. Laussy*, Phys. Rev. B, **96**, 125423 (2017), Impact Factor : 3.836, Citations : 2.

"Spontaneous polariton currents in periodic lateral chains", *A. V. Nalitov, T. C. H. Liew, A. V. Kavokin, B. L. Altshuler, & Y. G. Rubo*, Phys. Rev. Lett., **119**, 067406 (2017), Impact Factor : 8.462, Citations : 7.

"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, & J. J. Baumberg*, Phys. Rev. Lett., **119**, 067401 (2017), Impact Factor : 8.462, Citations : 25.

"Electrical and optical switching in the bistable regime of an electrically injected polariton laser", *M. Klaas, H. Sigurdsson, T. C. H. Liew, S. Klembt, M. Amthor, F. Hartmann, L. Worschech, C. Schneider, & S. Höfling*, Phys. Rev. B, **96**, 041301(R) (2017), Impact Factor : 5.1, Citations : 2.

"Prototype of a bistable polariton field-effect transistor switch", *H. Suchomel, S. Brodbeck, T. C. H. Liew, M. Amthor, M. Klaas, S. Klembt, M. Kamp, S. Höfling, & C. Schneider*, Sci. Rep., **7**, 5114 (2017), Impact Factor : 5.228, Citations : 3.

"Room-Temperature Polariton Lasing in All-Inorganic Perovskite Nanoplatelets", *R. Su, C. Diederichs, J. Wang, T. C. H. Liew, J. Zhao, S. Liu, W. Xu, Z. Chen, & Q. Xiong*, Nano Lett., **17**, 3982 (2017), Impact Factor : 12.080, Citations : 47.

"Hyperbolic Region in an Array of Quantum Wires in a Planar Cavity", *K. B. Arnardottir, I. V. Iorsh, T. C. H. Liew, & I. A. Shelykh*, ACS Photonics, **4**, 1165 (2017), Impact Factor : 6.880, Citations : 2.

"Optical probing of the Coulomb interactions of an electrically pumped polariton condensate", *M. Klass, S. Mandal, T. C. H. Liew, M. Amthor, S. Klembt, L. Worschech, C. Schneider, & S. Höfling*, Appl. Phys. Lett., **110**, 151103 (2017), Impact Factor : 3.142, Citations : 1.

"Multivalley engineering in semiconductor microcavities", *M. Sun, I. G. Savenko, H. Flayac, & T. C. H. Liew*, Sci. Rep., **7**, 45243 (2017), Impact Factor : 5.578, Citations : 6.

"Interactive optomechanical coupling with nonlinear polaritonic systems", *N. Bobrovska, M. Matuszewski, T. C. H. Liew, & O. Kyriienko*, Phys. Rev. B, **95**, 085309 (2017), Impact Factor : 3.836, Citations : 4.

2016 **"Spontaneous spin bifurcations in a Bose-Einstein condensate of indirect excitons"**, *T. Liu & T. C. H. Liew*, Superlattice Microst., **108**, 57 (2016), Impact Factor : 2.117, Citations : 3.

"Cellular automata in photonic cavity arrays", *J. Li & T. C. H. Liew*, Opt. Express, **24**, 24930 (2016), Impact Factor : 3.148, Citations : 1.

"Polariton condensates : Electrical spin switching (news and views)", *T. C. H. Liew*, Nature Mater., **15**, 1053 (2016), Impact Factor : 38.891.

"Half-skyrmion spin textures in polariton microcavities", *P. Cilibrizzi, H. Sigurdsson, T. C. H. Liew, A. Askitopoulos, S. Brodbeck, C. Schneider, I. A. Shelykh, S. Höfling, J. Ruostekoski, & P. G. Lagoudakis*, Phys. Rev. B, **94**, 045315 (2016), Impact Factor : 3.836, Citations : 10.

"Nonresonant optical control of a spinor polariton condensate", *A. Askitopoulos, K. Kalinin, T. C. H. Liew, P. Cilibrizzi, Z. Hatzopoulos, P. G. Savvidis, N. G. Berloff, & P. G. Lagoudakis*, Phys. Rev. B, **93**, 205307 (2016), Impact Factor : 3.836, Citations : 9.

"Collective state transitions of exciton-polaritons loaded into a periodic potential", *K. Winkler, O. A. Egorov, I. G. Savenko, X. Ma, E. Estecho, T. Gao, S. Müller, M. Kamp, T. C. H. Liew, E. A. Ostrovskaya, S. Höfling, & C. Schneider*, Phys. Rev. B, **93**, 121303(R) (2016), Impact Factor : 5.1, Citations : 21.

"Quantum statistics of bosonic cascades", *T. C. H. Liew, Y. G. Rubo, A. S. Sheremet, S. De Liberato, I. A. Shelykh, F. P. Laussy, & A. V. Kavokin*, New J. Phys., **18**, 023041 (2016), Impact Factor : 3.558, Citations : 8.

"Lasing in Bose-Fermi mixtures", *V. P. Kochereshko, M. V. Durnev, L. Besombes, H. Mariette, V. F. Sapega, A. Askitopoulos, I. G. Savenko, T. C. H. Liew, I. A. Shelykh, A. V. Platonov, S. I. Tsintzos, Z. Hatzopoulos, P. G. Savvidis, V. K. Kalevich, M. M. Afanasiev, V. A. Lukoshkin, C. Schneider, M. Amthor, C. Metzger, M. Kamp, S. Hoefling, P. Lagoudakis, & A. V. Kavokin*, Sci. Rep., **6**, 20091 (2016), Impact Factor : 5.578, Citations : 17.

"Exciton-polariton quantum gates based on continuous variables", *O. Kyriienko & T. C. H. Liew*, Phys. Rev. B, **93**, 035301 (2016), Impact Factor : 3.836, Citations : 10.

"Chiral Bogoliubov excitations in nonlinear bosonic systems", *C.-E. Bardyn, T. Karzig, G. Refael, & T. C. H. Liew*, Phys. Rev. B, **93**, 020502(R) (2016), Impact Factor : 5.1, Citations : 49.

2015 **"Switching waves in multilevel incoherently driven polariton condensates"**, *H. Sigurdsson, I. A. Shelykh, & T. C. H. Liew*, Phys. Rev. B, **92**, 195409 (2015), Impact Factor : 3.736, Citations : 5.

"Polarization shaping of Poincaré beams by polariton oscillations", *D. Colas, L. Dominici, S. Donati, A. A. Pervishko, T. C. H. Liew, I. A. Shelykh, D. Ballarini, M. de Giorgi, A. Bramati, G. Gigli, E. del Valle, F. P. Laussy, A. V. Kavokin, & D. Sanvitto*, Light Sci. Appl., **4**, e350 (2015), Impact Factor : 14.603, Citations : 21.

"Observation of non-Hermitian degeneracies in a choatic exciton-polariton billiard", *T. Gao, E. Estrecho, K. Y. Bliokh, T. C. H. Liew, M. D. Fraser, S. Brodbeck, M. Kamp, C. Schneider, S. Höfling, Y. Yamamoto, F. Nori, Y. S. Kivshar, A. G. Truscott, R. G. Dall, & E. A. Ostrovskaya*, Nature, **526**, 554 (2015), Impact Factor : 41.456, Citations : 120.

"Polariton spin whirls", *P. Cilibrizzi, H. Sigurdsson, T. C. H. Liew, H. Ohadi, S. Wilkinson, A. Askitopoulos, I. A. Shelykh, & P. G. Lagoudakis*, Phys. Rev. B, **92**, 155308 (2015), Impact Factor : 3.736, Citations : 11.

"Incoherent excitation and switching of spin states in exciton-polariton condensates", *G. Li, T. C. H. Liew, O. A. Egorov, & E. A. Ostrovskaya*, Phys. Rev. B, **92**, 064304 (2015), Impact Factor : 3.736, Citations : 9.

"Robust platform for engineering pure-quantum-state transitions in polariton condensates", *A. Askitopoulos, T. C. H. Liew, H. Ohadi, Z. Hatzopoulos, P. G. Savvidis, & P. G. Lagoudakis*, Phys. Rev. B, **92**, 035305 (2015), Impact Factor : 3.736, Citations : 18.

"Spin selective filtering of polariton condensate flow", *T. Gao, C. Antón, T. C. H. Liew, M. D. Martín, Z. Hatzopoulos, L. Viña, P. S. Eldridge, & P. G. Savvidis*, Appl. Phys. Lett., **107**, 011106 (2015), Impact Factor : 3.302, Citations : 12.

"Topological polaritons and excitons in garden-variety systems", *C.-E. Bardyn, T. Karzig, G. Refael, & T. C. H. Liew*, Phys. Rev. B, **91**, 161413(R) (2015), Impact Factor : 5.1, Citations : 69.

"Perceptrons with Hebbian learning based on wave ensembles in spatially patterned potentials", *T. Espinosa-Ortega & T. C. H. Liew*, Phys. Rev. Lett., **114**, 118101 (2015), Impact Factor : 7.728, Citations : 4.

"Optical bistability in electrically driven polariton condensates", *M. Amthor, T. C. H. Liew, C. Metzger, S. Brodbeck, L. Worschech, M. Kamp, I. A. Shelykh, A. V. Kavokin, C. Schneider, & S. Höfling*, Phys. Rev. B, **91**, 081404(R) (2015), Impact Factor : 5.1, Citations : 19.

"Instability-induced formation and non-equilibrium dynamics of phase defects in polariton condensates", *T. C. H. Liew, O. A. Egorov, M. Matuszewski, O. Kyriienko, X. Ma, & E. Ostrovskaya*, Phys. Rev. B, **91**, 085413 (2015), Impact Factor : 3.736, Citations : 26.

"Optical control of spin textures in quasi-one-dimensional polariton condensates", *C. Antón, S. Morina, T. Gao, P. S. Eldridge, T. C. H. Liew, M. D. Martín, Z. Hatzopoulos, P. G. Savvidis, I. A. Shelykh, & L. Viña*, Phys. Rev. B, **91**, 075305 (2015), Impact Factor : 3.736, Citations : 11.

2014 **"Exciton-Polariton Oscillations in Real-Space"**, *T. C. H. Liew, Y. G. Rubo & A. V. Kavokin*, Phys. Rev. B, **90**, 245309 (2014), Impact Factor : 3.736, Citations : 12.

"Triggered single-photon emitters based on stimulated parametric scattering in weakly nonlinear systems", *O. Kyriienko & T. C. H. Liew*, Phys. Rev. A, **90**, 063805 (2014), Impact Factor : 3.042, Citations : 23.

"Bistability in Microcavities with Incoherent Optical or Electrical Excitation", *O. Kyriienko, E. A. Ostrovskaya, O. A. Egorov, I. A. Shelykh, & T. C. H. Liew*, Phys. Rev. B, **90**, 125407 (2014), Impact Factor : 3.736, Citations : 16.

"Tunable single photon emitter from dipolaritons", *O. Kyriienko, I. A. Shelykh, & T. C. H. Liew*, Phys. Rev. A, **90**, 033807 (2014), Impact Factor : 3.042, Citations : 36.

"Information processing with topologically protected vortex memories in exciton-polariton condensates", *H. Sigurdsson, O. A. Egorov, X. Ma, I. A. Shelykh, & T. C. H. Liew*, Phys. Rev. B, **90**, 014504 (2014), Impact Factor : 3.736, Citations : 13.

"Operation speed of polariton condensate switches gated by excitons", *C. Antón, T. C. H. Liew, D. Sarkar, M. D. Martín, Z. Hatzopoulos, P. S. Eldridge, P. G. Savvidis, & L. Viña*, Phys. Rev. B, **89**, 235312 (2014), Impact Factor : 3.736, Citations : 11.

"Motion of patterns in polariton quantum fluids with spin-orbit interaction", *O. A. Egorov, A. Werner, T. C. H. Liew, E. Ostrovskaya, & F. Lederer*, Phys. Rev. B, **89**, 235302 (2014), Impact Factor : 3.736, Citations : 13.

"Optomechanics with Cavity Polaritons : Dissipative Coupling and Unconventional Bistability", *O. Kyriienko, T. C. H. Liew, & I. A. Shelykh*, Phys. Rev. Lett., **112**, 076402 (2014), Impact Factor : 7.728, Citations : 41.

"Bistability in bosonic terahertz lasers", *A. A. Pervishko, T. C. H. Liew, A. V. Kavokin, & I. A. Shelykh*, J. Phys. : Condens. Matter, **26**, 085303 (2014), Impact Factor : 2.546, Citations : 2.

"Vortices in spinor cold exciton condensates with spin-orbit interaction", *H. Sigurdsson, T. C. H. Liew, O. Kyriienko, & I. A. Shelykh*, Phys. Rev. B, **89**, 035302 (2014), Impact Factor : 3.736, Citations : 5.

2013 **"Quantum reflections and shunting of polariton condensate wave trains : Implementation of a logic AND gate"**, *C. Antón, T. C. H. Liew, J. Cuadra, M. D. Martín, P. S. Eldridge, Z. Hatzopoulos, G. Stavrinidis, P. G. Savvidis, & L. Viña*, Phys. Rev. B, **88**, 245307 (2013), Impact Factor : 3.664, Citations : 19.

"Continuous terahertz emission from dipolaritons", *K. Kristinsson, O. Kyriienko, T. C. H. Liew, & I. A. Shelykh*, Phys. Rev. B, **88**, 245303 (2013), Impact Factor : 3.664, Citations : 19.

"Ballistic spin transport in exciton gases", *A. V. Kavokin, M. Vladimirova, B. Jouault, T. C. H. Liew, J. R. Leonard, & L. V. Butov*, Phys. Rev. B, **88**, 195309 (2013), Impact Factor : 3.664, Citations : 17.

"Spontaneous self-ordered states of vortex-antivortex pairs in a polariton condensate", *F. Manni, T. C. H. Liew, K. G. Lagoudakis, C. Ouellet-Plamondon, R. André, V. Savona, & B. Deveaud*, Phys. Rev. B, **88**, 201303(R) (2013), Impact Factor : 5.1, Citations : 26.

"Optical diode based on exciton-polaritons", *T. Espinosa-Ortega, T. C. H. Liew, & I. A. Shelykh*, Appl. Phys. Lett., **103**, 191110 (2013), Impact Factor : 3.794, Citations : 7.

"Energy relaxation of exciton-polariton condensates in quasi-one-dimensional microcavities", *C. Antón, T. C. H. Liew, G. Tosi, M. D. Martín, T. Gao, Z. Hatzopoulos, P. S. Eldridge, P. G. Savvidis, & L. Viña*, Phys. Rev. B, **88**, 035313 (2013), Impact Factor : 3.664, Citations : 18.

"Magnetic field control of the optical spin Hall effect", *S. Morina, T. C. H. Liew, & I. A. Shelykh*, Phys. Rev. B, **88**, 035311 (2013), Impact Factor : 3.664, Citations : 10.

"One-dimensional cubic-quintic Gross-Pitaevskii equation for Bose-Einstein condensates in a trap potential", *C. Trallero-Giner, R. Cipolatti, & T. C. H. Liew*, Eur. Phys. J. D, **67**, 143 (2013), Impact Factor : 1.513, Citations : 14.

"Spin Currents in a Coherent Exciton Gas", *A. A. High, A. T. Hammack, J. R. Leonard, Sen Yang, L. V. Butov, T. Ostatnicky, M. Vladimirova, A. V. Kavokin, T. C. H. Liew, K. L. Campman, & A. C. Gossard*, Phys. Rev. Lett., **110**, 246403 (2013), Impact Factor : 7.728, Citations : 58.

"Nonlinear effects in multi-photon polaritonics", *A. A. Pervishko, T. C. H. Liew, V. M. Kovalev, I. G. Savenko, & I. A. Shelykh*, Opt. Express., **21**, 15183 (2013), Impact Factor : 3.546, Citations : 4.

"Complete architecture of integrated photonic circuits based on AND and NOT logic gates of exciton polaritons in semiconductor microcavities", *T. Espinosa-Ortega & T. C. H. Liew*, Phys. Rev. B, **87**, 195305 (2013), Impact Factor : 3.664, Citations : 51.

"Stochastic Gross-Pitaevskii Equation for the Dynamical Thermalization of Bose-Einstein Condensates", *I. G. Savenko, T. C. H. Liew, & I. A. Shelykh*, Phys. Rev. Lett., **110**, 127402 (2013), Impact Factor : 7.728, Citations : 17.

"Multimode entanglement in coupled cavity arrays", *T. C. H. Liew & V. Savona*, New J. Phys., **15**, 025015 (2013), Impact Factor : 4.063, Citations : 26.

"Proposal for a Bosonic Cascade Laser", *T. C. H. Liew, M. M. Glazov, K. V. Kavokin, I. A. Shelykh, M. A. Kaliteevski, & A. V. Kavokin*, Phys. Rev. Lett., **110**, 047402 (2013), Impact Factor : 7.728, Citations : 37.

2012 **"Dynamics of a polariton condensate transistor switch"**, *C. Anton, T. C. H. Liew, G. Tosi, M. D. Martin, T. Gao, Z. Hatzopoulos, P. S. Eldridge, P. G. Savvidis, & L. Viña*, Appl. Phys. Lett., **101**, 261116 (2012), Impact Factor : 3.794, Citations : 24.

"Holographic arrays based on semiconductor microstructures", *T. C. H. Liew*, Phys. Rev. B, **86**, 235314 (2012), Impact Factor : 3.767, Citations : 1.

"Dissociation dynamics of singly charged vortices into half-quantum vortex pairs", *F. Manni, K. G. Lagoudakis, T. C. H. Liew, R. André, V. Savona, & B. Deveaud*, Nature Comm., **3**, 1309 (2012), Impact Factor : 10.015, Citations : 34.

"Non-adiabatic population transfer in coupled bosonic systems", *T. C. H. Liew & I. A. Shelykh*, J. Phys. B : At. Mol. Opt. Phys., **45**, 245003 (2012), Impact Factor : 2.546, Citations : 3.

"Propagation and Amplification Dynamics of 1D Polariton Condensates", *E. Wertz, A. Amo, D. D. Solnyshkov, L. Ferrier, T. C. H. Liew, D. Sanvitto, P. Senellart, I. Sagnes, A. Lemaître, A. V. Kavokin, G. Malpuech, & J. Bloch*, Phys. Rev. Lett., **109**, 216404 (2012), Impact Factor : 7.943, Citations : 71.

"Spin-orbit coupling and the topology of gases of spin-degenerate cold excitons in photoexcited GaAs-AlGaAs quantum wells", *M. Matuszewski, T. C. H. Liew, Y. G. Rubo, & A. V. Kavokin*, Phys. Rev. B, **86**, 115321 (2012), Impact Factor : 3.767, Citations : 12.

"Nonlinear Optical Spin Hall Effect and Long-Range Spin Transport in Polariton Lasers", *E. Kammann, T. C. H. Liew, H. Ohadi, P. Cilibrizzi, P. Tsotsis, Z. Hatzopoulos, P. G. Savvidis, A. V. Kavokin, & P. G. Lagoudakis*, Phys. Rev. Lett., **109**, 036404 (2012), Impact Factor : 7.943, Citations : 72.

"Spontaneous Symmetry Breaking in a Polariton and Photon Laser", *H. Ohadi, E. Kammann, T. C. H. Liew, K. G. Lagoudakis, A. V. Kavokin, & P. G. Lagoudakis*, Phys. Rev. Lett., **109**, 016404 (2012), Impact Factor : 7.943, Citations : 34.

"Polariton condensate transistor switch", *T. Gao, P. S. Eldridge, T. C. H. Liew, S. I. Tsintzos, G. Stavrinidis, G. Deligeorgis, Z. Hatzopoulos, & P. G. Savvidis*, Phys. Rev. B, **85**, 235102 (2012), Impact Factor : 3.767, Citations : 103.

"Quantum entanglement in nanocavity arrays", *T. C. H. Liew & V. Savona*, Phys. Rev. A, **85**, 050301(R) (2012), Impact Factor : 3.042, Citations : 17.

"Optically erasing disorder in semiconductor microcavities using polariton-polariton interactions", *T. C. H. Liew*, Phys. Status Solidi B, **249**, 880 (2012), Impact Factor : 1.489, Citations : 2.

2011 **"Motion of spin polariton bullets in semiconductor microcavities"**, *C. Adrados, T. C. H. Liew, A. Amo, M. D. Martin, D. Sanvitto, C. Antón, E. Giacobino, A. Kavokin, A. Bramati, & L. Viña*, Phys. Rev. Lett., **107**, 146402 (2011), Impact Factor : 7.370, Citations : 44.

"Spontaneous Pattern Formation in a Polariton Condensate", *F. Manni, K. G. Lagoudakis, T. C. H. Liew, R. André, & B. Deveaud-Plédran*, Phys. Rev. Lett., **107**, 106401 (2011), Impact Factor : 7.370, Citations : 59.

"Multipartite polariton entanglement in semiconductor microcavities", *T. C. H. Liew & V. Savona*, Phys. Rev. A, **84**, 032301 (2011), Impact Factor : 2.878, Citations : 16.

"Spin-to-orbital angular momentum conversion in semiconductor microcavities", *F. Manni, K. G. Lagoudakis, T. K. Paraïso, R. Cerna, Y. Léger, T. C. H. Liew, I. A. Shelykh, A. V. Kavokin, F. Morier-Genoud, & B. Deveaud-Plédran*, Phys. Rev. B, **83**, 241307(R) (2011), Impact Factor : 5.3, Citations : 23.

"Suppression of Zeeman Splitting of the Energy Levels of Exciton-Polariton Condensates in Semiconductor Microcavities in an External Magnetic Field", *P. Walker, T. C. H. Liew, D. Sarkar, M. Durska, A. P. D. Love, M. S. Skolnick, J. S. Roberts, I. A. Shelykh, A. V. Kavokin, & D. N. Krizhanovskii*, Phys. Rev. Lett., **106**, 257401 (2011), Impact Factor : 7.370, Citations : 32.

"Optically Erasing Disorder in Semiconductor Microcavities with Dynamic Nuclear Polarization", *T. C. H. Liew & V. Savona*, Phys. Rev. Lett., **106**, 146404 (2011), Impact Factor : 7.370, Citations : 4.

"Probing the Dynamics of Spontaneous Quantum Vortices in Polariton Superfluids", *K. G. Lagoudakis, F. Manni, B. Pietka, M. Wouters, T. C. H. Liew, V. Savona, A. V. Kavokin, R. André, & B. Deveaud-Plédran*, Phys. Rev. Lett., **106**, 115301 (2011), Impact Factor : 7.370, Citations : 75.

"Hybrid states of Tamm plasmons and exciton-polaritons", *M. Kaliteevski, S. Brand, R. A. Abram, I. Iorsh, A. V. Kavokin, T. C. H. Liew, & I. A. Shelykh*, Superlattice Microst., **49**, 229 (2011), Impact Factor : 1.487, Citations : 7.

2010 **"Energy relaxation in one-dimensional polariton condensates"**, *M. Wouters, T. C. H. Liew, & V. Savona*, Phys. Rev. B, **82**, 245315 (2010), Impact Factor : 3.772, Citations : 54.

"Spin Rings in Bistable Planar Semiconductor Microcavities", *C. Adrados, A. Amo, T. C. H. Liew, R. Hivet, R. Houdré, E. Giacobino, A. V. Kavokin, & A. Bramati*, Phys. Rev. Lett., **105**, 216403 (2010), Impact Factor : 7.621, Citations : 41.

"Polarization of exciton-polariton condensates in lateral traps", *C. Trallero-Giner, T. C. H. Liew, & A. V. Kavokin*, Phys. Rev. B, **82**, 165421 (2010), Impact Factor : 3.772, Citations : 5.

"Exciton-polariton integrated circuits", *T. C. H. Liew, A. V. Kavokin, T. Ostatnický, M. Kaliteevski, I. A. Shelykh, & R. A. Abram*, Phys. Rev. B, **82**, 033302 (2010), Impact Factor : 3.772, Citations : 84.

"Exciton-polariton spin switches", *A. Amo, T. C. H. Liew, C. Adrados, R. Houdré, E. Giacobino, A. V. Kavokin, & A. Bramati*, Nature Photon., **4**, 361 (2010), Impact Factor : 26.442, Citations : 181.

"Single Photons from Coupled Quantum Modes", *T. C. H. Liew & V. Savona*, Phys. Rev. Lett., **104**, 183601 (2010), Impact Factor : 7.621, Citations : 178.

2009 **"Device-independent state estimation based on Bell's inequalities"**, *C.-E. Bardyn, T. C. H. Liew, S. Massar, M. McKague, & V. Scarani*, Phys. Rev. A, **80**, 062327 (2009), Impact Factor : 2.866, Citations : 59.

"Stochastic polarization formation in exciton-polariton condensates", *D. Read, T. C. H. Liew, Yu. G. Rubo & A. V. Kavokin*, Phys. Rev. B, **80**, 195309 (2009), Impact Factor : 3.475, Citations : 46.

"Interplay between Superfluidity and Magnetic Self-Trapping of Exciton-Polaritons", *I. A. Shelykh, T. C. H. Liew, & A. V. Kavokin*, Phys. Rev. B, **80**, 201306(R) (2009), Impact Factor : 5.3, Citations : 6.

"Anisotropic optical spin Hall effect in semiconductor microcavities", *A. Amo, T. C. H. Liew, C. Adrados, E. Giacobino, A. V. Kavokin, & A. Bramati*, Phys. Rev. B, **80**, 165325 (2009), Impact Factor : 3.475, Citations : 24.

"Polarization phenomena in resonantly pumped disorder semiconductor microcavities", *T. C. H. Liew, & I. A. Shelykh*, Phys. Rev. B, **80**, 161303(R) (2009), Impact Factor : 5.3, Citations : 10.

"Phase shift of a weak coherent beam by a single atom", *S. A. Aljunid, M. K. Tey, B. Chng, T. C. H. Liew, G. Maslennikov, V. Scarani & C. Kurtsiefer*, Phys. Rev. Lett., **103**, 153601 (2009), Impact Factor : 7.328, Citations : 50.

"Signature of the microcavity exciton-polariton relaxation mechanism in the polarization of emitted light", *G. Roumpos, C.-W. Lai, T. C. H. Liew, Yu. G. Rubo, A. V. Kavokin & Y. Yamamoto*, Phys. Rev. B, **79**, 195310 (2009), Impact Factor : 3.475, Citations : 18.

"Interfacing light and single atoms with a lens", *M.-K. Tey, G. Maslennikov, T. C. H. Liew, S. Abdullah Aljunid, F. Huber, B. Chng, Z. Chen, V. Scarani & C. Kurtsiefer*, New J. Phys., **11**, 043011 (2009), Impact Factor : 3.312, Citations : 48.

"Interplay between weak localization of exciton-polaritons and the optical spin Hall effect", *T. C. H. Liew, C. Leyder, A. V. Kavokin, A. Amo, J. Lefrère, E. Giacobino & A. Bramati*, Phys. Rev. B, **79**, 125314, (2009), Impact Factor : 3.475, Citations : 13.

2008 **"Generation and Dynamics of Vortex Lattices in Coherent Exciton-polariton Fields"**, *T. C. H. Liew, Yu. G. Rubo, & A. V. Kavokin*, Phys. Rev. Lett., **101**, 187401 (2008), Impact Factor : 7.180, Citations : 30.

"Optical circuits based on Polariton Neurons in Semiconductor Microcavitities", *T. C. H. Liew, A. V. Kavokin & I. A. Shelykh*, Phys. Rev. Lett., **101**, 016402 (2008), Impact Factor : 7.180, Citations : 160.

"Suppression of Zeeman splitting and polarization steps of exciton-polariton condensates", *T. C. H. Liew, Yu. G. Rubo, I. A. Shelykh & A. V. Kavokin*, Phys. Rev. B, **77**, 125339 (2008), Impact Factor : 3.322, Citations : 12.

"Spin rings in semiconductor microcavities", *I. A. Shelykh, T. C. H. Liew & A. V. Kavokin*, Phys. Rev. Lett., **100**, 116401 (2008), Impact Factor : 7.180, Citations : 39.

2007 **"Interference of Coherent Polariton Beams in Microcavities : Polarization-Controlled Optical Gates"**, *C. Leyder, T. C. H. Liew, A. V. Kavokin, I. A. Shelykh, M. Romanelli, J. Ph. Karr, E. Giacobino & A. Bramati*, Phys. Rev. Lett., **99**, 196402 (2007), Impact Factor : 6.944, Citations : 58.

"Observation of the optical spin Hall effect", *C. Leyder, M. Romanelli, J. Ph. Karr, E. Giacobino, T. C. H. Liew, M. M. Glazov, A. V. Kavokin, G. Malpuech & A. Bramati*, Nature Physics, **3**, 628 (2007), Impact Factor : 14.677, Citations : 177.

"Excitation of Vortices in Semiconductor Microcavities", *T. C. H. Liew, A. V. Kavokin & I. A. Shelykh*, Phys. Rev. B, **75**, 241301(R) (2007), Impact Factor : 5.3, Citations : 27.

Invited Review Papers

"Bosonic lasers : The states of the art", *A. Kavokin, T. C. H. Liew, C. Schneider, & S. Höfling*, Low Temperature Physics, **42**, 323 (2016), Impact Factor : 1.036, Citations : 1.

"Polaritonic devices", *T. C. H. Liew, I. A. Shelykh, & G. Malpuech*, Physica E, **43**, 1543 (2011), Impact Factor : 1.304, Citations : 67.

"Polariton polarization-sensitive phenomena in planar semiconductor microcavities", *I. A. Shelykh, Y. G. Rubo, A. V. Kavokin, T. C. H. Liew & G. Malpuech*, Semicond. Sci. Technol., **25**, 013001 (2010), Impact Factor : 1.323, Citations : 146.

Presentations at International Conferences

Plenary Presentations

Mar 2019 **"Artificial Life and Neuromorphic Computing based on Exciton-Polariton Lattices" (oral)**, *Institute of Physics Singapore March Meeting*, Singapore.

Invited Presentations

Jan 2020 **"Exciton-Polariton Reservoir Processing" (oral)**, *Workshop on Agency at the Interface of Quantum and Complexity Science*, Singapore.

Oct 2019 **"Artificial life and quantum neural networks based on exciton-polariton lattices" (oral)**, *Hybrid Photonics & Materials International Conference*, Naxos, Greece.

May 2019 **"Cellular automata and quantum neural networks based on exciton-polariton lattices" (oral)**, *4th International Conference on Terahertz Emission, Metamaterials and Nanophotonics (TERAMETANANO)*, Lecce, Italy.

May 2019 **"Artificial life and quantum neuromorphic computing based on photonic lattices" (oral)**, *International Workshop on Spintronics and Valleytronics of Two-dimensional Materials*, Daejon, South Korea.

Apr 2019 **"Artificial life and quantum neuromorphic computing based on photonic lattices" (oral)**, *2nd Photonic and Optoelectronic Materials Conference (POEM)*, London, UK.

May 2018 **"Interaction Induced Topology and Quantum Effects in Polariton Networks" (oral)**, *19th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Chengdu, China.

Mar 2018 **"Topological and Quantum Effects in Exciton-Polariton Lattices" (oral)**, *3rd International Conference on Terahertz Emission, Metamaterials and Nanophotonics (TERAMETANANO)*, Uxmal, Mexico.

May 2017 **"Quantum Cascades with Excitons and Nanoparticles" (oral)**, *International Conference on Terahertz Emission, Metamaterials and Nanophotonics (TERAMETANANO)*, Venice, Italy.

Apr 2017 **"Engineering Topological and Multivalley Dispersion in Exciton-Polariton Lattices" (oral)**, *The 2nd International Conference on Physics of 2D Crystals*, Ha Long, Vietnam.

Nov 2016 **"Quantum Optics in Weakly Nonlinear Coupled Optical Mode Systems" (oral)**, *The Quantum Engineering Science and Technologies Symposium*, Singapore.

Sep 2016 **"Bunching in Bosonic Cascades" (oral)**, *The International Workshop on Functional and Nanostructured Materials*, Tbilisi, Georgia.

Jul 2016 **"Quantum Statistics of Bosonic Cascades" (oral)**, *7th International Conference on Metamaterials, Photonic Crystals and Plasmonics*, Malaga, Spain.

May 2016 **"Topological Polaritons and Chiral Bogoliubons" (oral)**, *Mini-workshop on polariton BEC*, Canberra, Australia.

Oct 2015 **"Solid state QED and exciton-polariton physics" (oral)**, *International Conference on Optics of Excitons in Confined Systems*, Jerusalem, Israel.

May 2015 **"Elements of Information Processing with Polaritons" (oral)**, *International Conference on Hybrid Photonics and Materials*, Santorini, Greece.

Feb 2015 **"Antibunching in Weakly Nonlinear Coupled Optical Mode Systems" (oral)**, *International Workshop on Nonlinear Physics at the Nanoscale : A Cross-Fertilization on Stochastic Methods*, Rotorua, New Zealand.

Sep 2012 **"Optical spin Hall effect" (oral)**, *Workshop on Spin-Related Phenomena in Mesoscopic Transport*, Stockholm, Sweden.

Aug 2012 **"Multimode entanglement in semiconductor microcavities" (oral)**, *6th International Conference on Spontaneous Coherence in Excitonic Systems*, Stanford, USA.

Mar 2012 **"Multimode entanglement in semiconductor microcavities" (oral)**, *2nd March Meeting, Mediterranean Institute of Fundamental Physics*, Marino, Italy.

Apr 2011 **"Optically erasing disorder in semiconductor microcavities with dynamic nuclear polarization" (oral)**, *11th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Berlin, Germany.

Mar 2011 **"Single photon sources & multimode entanglement in semiconductor microcavities" (oral)**, *1st March Meeting, Mediterranean Institute of Fundamental Physics*, Marino, Italy.

Jan 2009 **"Bistability in Semiconductor Microcavities" (oral)**, *3rd International School of Nanophotonics*, Santiago de Cuba, Cuba.

Regular Presentations

Dec 2018 **"Solving NP-hard problems with bistable polaritonic networks" (poster)**, *Excitonics and Polaritonics International Conference*, Singapore.

Apr 2016 **"Chiral Bogoliubons in Nonlinear Bosonic Systems" (oral)**, *17th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Nara, Japan.

Aug 2015 **"Triggered single-photon emitters based on stimulated parametric scattering in weakly nonlinear systems" (oral)**, *6th International Conference on Metamaterials, Photonic Crystals and Plasmonics*, New York, USA.

Jun 2014 **"Bistability in Microcavities with Incoherent Optical or Electrical Excitation" (oral)**, *15th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Montpellier, France.

May 2013 **"Bosonic Cascade Laser" (oral)**, *14th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Crete, Greece.

Jun 2012 **"Multimode entanglement in semiconductor microcavities" (oral)**, *12th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Huangzhou, China.

Mar 2012 **"Multimode entanglement in semiconductor microcavities" (oral)**, *1st International Workshop on Relativistic Phenomena in Solids*, Le Mont Dore, France.

Apr 2010 **"Single Photons from Coupled Quantum Modes" (oral)**, *10th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Cuernavaca, Mexico.

Jul 2009 **"Black Box Tomography" (oral)**, *18th International Laser Physics Workshop*, Barcelona, Spain.

Aug 2008 **"Optical Gates based on the interference of Polariton condensates" (oral) ; "Optical Circuits based on Exciton-Polaritons in Semiconductor Microcavities" (poster)**, *5th International Conference on Physics and Applications of Spin-related Phenomena in Semiconductors*, Foz do Iguaçu, Brazil.

Jul 2008 **"Polarization controlled Optical Gates in Semiconductor Microcavities" (oral)**, *29th International Conference on the Physics of Semiconductors*, Rio de Janeiro, Brazil.

Apr 2008 **"Optical Circuits based on Exciton-Polaritons in Semiconductor Microcavities" (oral)**, *8th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Tokyo, Japan.

Jan 2008 **"Vortex Lattices & Recombination in Exciton-Polariton Condensates" (poster)**, *Latsis Symposium at EPFL*, Lausanne, Switzerland.

Aug 2007 **"Interference of Polariton Condensates" (poster)**, *School on Atomic Quantum Fluids*, Brasilia, Brazil.

Jul 2007 **"Optical Spin Hall Effect" (oral)**, *Research Workshop on Advance in Physics and Applications of Low-Dimensional Systems*, Brasilia, Brazil.

Apr 2007 **"Theory of the Optical Spin Hall Effect" (oral) ; "Degenerate Polariton OPO : Polarization Effects" (poster)**, *7th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Havana, Cuba.

Jan 2007 **"Quantitative Theory of the Optical Spin Hall Effect" (oral)**, *3rd International Conference on Spontaneous Coherence in Excitonic Systems*, Les Houches, France.

Sep 2006 **"Excitation of Vortices in Semiconductor Microcavities" (oral)**, *6th International Conference on Physics of Light-Matter Coupling in Nanostructures*, Magdeburg, Germany.

Invited Seminars

Jan 2019 **"Spinor and nonlinear effects in Exciton-polariton lattices"**, *Sorbonne University*, Paris, France.

Oct 2018 **"Exciton-Polaritons"**, *Sorbonne University*, Paris, France.

Feb 2017 **"Topological polaritons and chiral bogoliubons"**, *Centro de Inverstigación en Energía, Universidad Nacional Autónoma de México*, Cuernavaca, Mexico.

Feb 2015 **"Exciton-Polariton based Photonic Circuits"**, *Stanford*, Stanford University, USA.

Feb 2015 **"Applications of exciton-polaritons in hybrid light-matter coupled systems"**, *University of California*, Berkeley, USA.

Nov 2012 **"Quantum Optics in Weakly Nonlinear Systems"**, *Nonlinear Physics Centre, Australian National University*, Canberra, Australia.

Oct 2011 **"Multimode entanglement in semiconductor microcavities"**, *Centro de Inverstigación en Energía, Universidad Nacional Autónoma de México*, Cuernavaca, Mexico.

Jun 2008 **"Early steps toward the use of Exciton-Polaritons for computation"**, *Center for Quantum Technologies, National University of Singapore*, Singapore.

Other Responsibilities

Co-chairman, *International Conference on Spontaneous Coherence in Excitonic Systems, Melbourne, Australia (2020).*

Program Committee Member, *International Conference on Terahertz Emission, Metamaterials and Nanophotonics, Lecce, Italy (2019).*

Organizing Committee Member & Treasurer, *Excitonics and Polaritonics International Conference (EPIC), Singapore (2018).*

Program Committee Member, *International Conference on Spontaneous Coherence in Excitonic Systems, Montréal, Canada (2018)*.

Co-chairman, *International Conference on Terahertz Emission, Metamaterials and Nanophotonics, Uxmal, Mexico (2018)*.

Co-chairman, *International Workshop on Physics of Exciton-Polaritons in Artificial Lattices, Daejon, South Korea (2017)*.

Program Committee Member, *International Workshop on Functional and Nanostructured Materials, Tbilisi, Georgia (2016)*.

Member, *Mediterranean Institute of Fundamental Physics (since 2010)*.

Scientific Secretary, *3rd International School of Nanophotonics, Santiago de Cuba, Cuba (2009)*.