



# ICIQP2018 – October 15-17, 2018

International Conference on Integrated Quantum Photonics

Université Paris Diderot – Paris 7

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On behalf of the organizing committee, we are honoured and delighted to welcome you at the International Conference of Integrated Quantum Photonics in Paris!

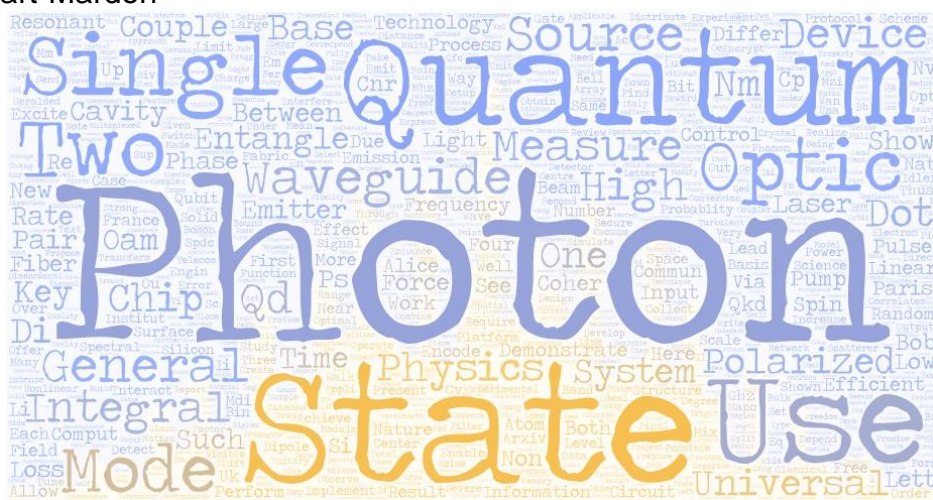
The conference covers the following research topics:

- We thank the members of the Scientific Committee for their thorough and timely reviewing of the papers and suggestion of invited speakers, and our sponsors who have helped us keep down the costs of ICIQP for all participants.

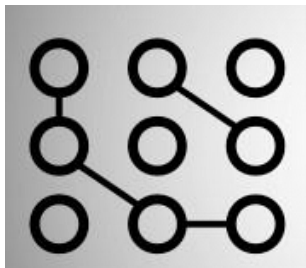
Enjoy !

Eleni Diamanti

Pascale Senellart-Mardon







## Committees

### Conference Chairs

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- Eleni DIAMANTI (CNRS, Sorbonne University)
- Sara DUCCI (University Paris Diderot)
- Pascale SENELLART-MANDON (CNRS, University Paris Saclay)

### Scientific Committee

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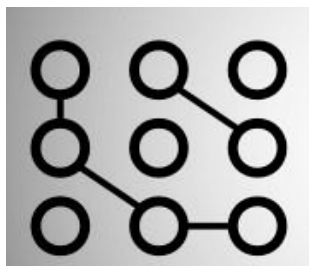
- Hugues DE RIEDMATTEN (ICFO, Barcelona, Spain)
- Eleni DIAMANTI (CNRS, Sorbonne University, Paris, France)
- Sara DUCCI (University Paris Diderot, France)
- Hagai EISENBERG (Hebrew University of Jerusalem, Israel)
- Steve KOLTHAMMER (Imperial College, London, UK)
- Mirko LOBINO (Griffith University, Brisbane, Australia)

- Wolfgang LÖFFLER (Leiden University, The Netherlands)
- Roberto MORANDOTTI (INRS-EMT, Université du Québec, Canada)
- Roberto OSELLAME (CNR, Politecnico Milano, Italy)
- Pascale SENELLART-MANDON (CNRS, University Paris Saclay, Marcoussis, France)
- Glenn SOLOMON (NIST, University of Maryland, Gaithersburg, USA)

### Local Organizing Committee

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- Maria AMANTI (University Paris Diderot)
- Carlos ANTÓN SOLANAS (CNRS, University Paris Saclay)
- Florent BABOUX (University Paris Diderot)
- Luis TRIGO VIDARTE (Sorbonne Univ., Institut d'Optique Graduate School)

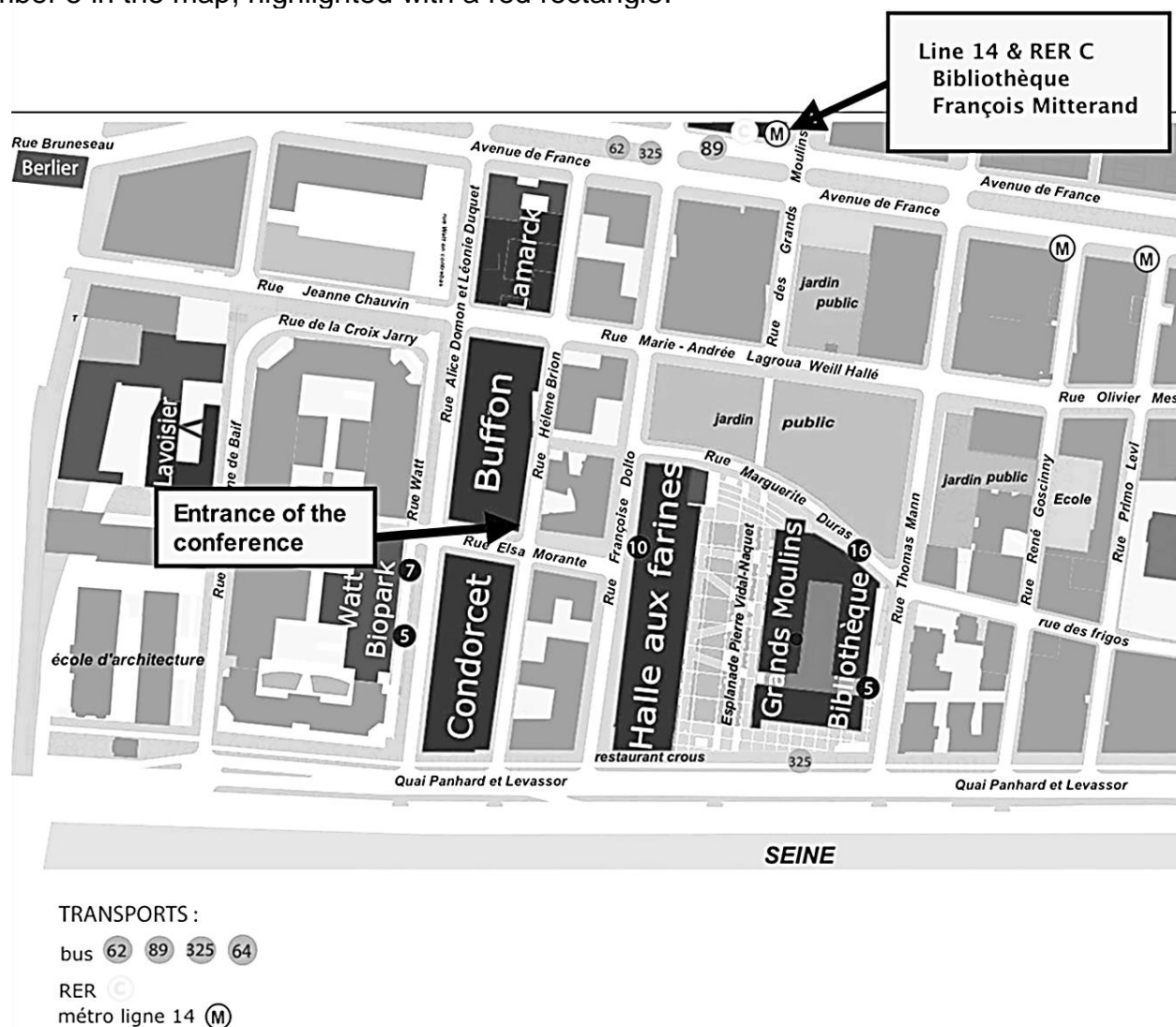


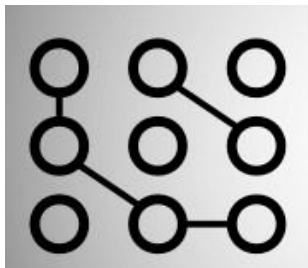
## How to reach the conference venue

ICIQP 2018 is held at Université Paris Diderot - Paris 7 in the Amphitheatre **Buffon** in building **Bâtiment Buffon**, address: 15 rue Hélène Brion, 75013 Paris (France).

- Tram: T3a (**Avenue de France**)
- Train and subway: RER C and line 14 (**Bibliothèque François Mitterrand**)
- Bus: lines 62 (**Porte de France**), 64 (**Pont de Tolbiac**), 89 (**Porte de France**), 325 (**Watt**).
- Vélib' Métropole (public bicycles): Station n°13055

The Amphitheatre **Buffon** is located in the building **Bâtiment Buffon** (15 rue Hélène Brion), number 5 in the map, highlighted with a red rectangle.





## Internet connection

Eduroam connection is accessible in the university campus. Check your badge where you will see an alternative Wi-Fi connection with personal login and password to connect to a local internet access.

## Oral presentations

The oral contributions will be organised in the following way

- **Invited talks** will have 25 min presentation and 5 min questions
- **Accepted contributed talks** will consist in 15 min presentation and 5 min questions

## Poster sessions

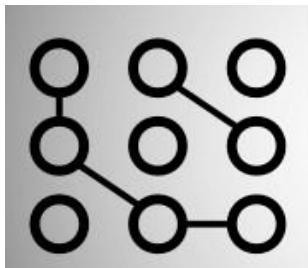
Space and material for installing a vertical DIN-A0-size poster will be facilitated in a room close to the conference room.

The two posters sessions will be organized in the following way: posters with **odd numbers** will be presented on **Monday** and posters with **even numbers** will be presented on **Tuesday** (see colour code in the poster titles).

Here it is the list of accepted posters:

1. Matteo Menotti, Zachary Vernon, John Sipe and Marco Liscidini  
**Controlling spectral correlations in integrated sources: from energy-entangled to uncorrelated photon pairs**
2. Gediminas Juska, Stefano T. Moroni, Simone Varo, Tung-Hsun Chung, Agnieszka Gocalinska and Emanuele Pelucchi  
**Engineering opportunities with MOVPE grown site-controlled Pyramidal quantum dots**
3. Wolfgang Löffler, H. J. Snijders, J. A. Frey, J. Norman, A. Gossard, J. E. Bowers and D. Bouwmeester  
**Polarization and high-fidelity fiber-integrated quantum dot cavity-QED devices**
4. Mackrine Nahra, Aurelie Broussier, Valery Davydov, Viatcheslav Agafonov and Christophe Couteau  
**Single photon source in nanodiamonds for integrated quantum photonic**
5. Kanupriya Sinha, B. Prasanna Venkatesh and Pierre Meystre  
**Tailoring Casimir-Polder Interactions in Nanophotonic Systems**
6. Lior Cohen, Yehuda Pilnyak, Daniel Istrati, Nicholas Studer, Jonathan Dowling and Hagai Eisenberg





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Absolute self-calibration of single-photon and multiplexed photon-number-resolving detectors

7. Benjamin Kambs, Jonas Heinrich Weber, Jan Kettler, Simon Kern, Hüseyin Vural, Simone Luca Portalupi, Michael Jetter, Christoph Becher and Peter Michler  
[Remote two-photon interference at 1550 nm via quantum frequency conversion of quantum dot photons](#)

8. Jacob Bulmer, Jasleen Lugani and Ian Walmsley  
[Low depth  \$N \times N\$  optical switches using a generalized Mach-Zehnder interferometer on a 2D/3D hybrid waveguide platform](#)

9. Alessandro Seri, Giacomo Corrielli, Dario Lago-Rivera, Andreas Lenhard, Hugues de Riedmatten, Roberto Osellame and Margherita Mazzera  
[A novel integrated platform for quantum storage of heralded single photons](#)

10. Yehuda Pilnyak, Yuval Schechter, Dean Pleban, Leonid Vidro, Pini Zilber, Lior Cohen, Daniel Istrati and Hagai S. Eisenberg  
[Photon states encoded in polarization and picosecond time-bins](#)

11. Morgane Gandil, Johannes Görlitz, Dennis Herrmann, Philipp Fuchs, Takayuki Iwasaki, Takashi Taniguchi, Mutsuko Hatano and Christoph Becher  
[Investigation of the tin vacancy center in diamond for realization of spin-photon interfaces](#)

12. Gerard Queraltó Isach, Verónica Ahufinger Breto and Jordi Mompart Penina

Continuous supersymmetric transformations in optical waveguides

13. Paul Hilaire, Carlos Anton, Clément Millet, Abdelmounaim Harouri, Aristide Lemaître, Isabelle Sagnes, Olivier Krebs, Norberto Daniel Lanzillotti Kimura, Niccolo Somaschi, Pascale Senellart and Loïc Lanco  
[Tomography of the optical polarization rotation induced by a single quantum dot in a cavity](#)

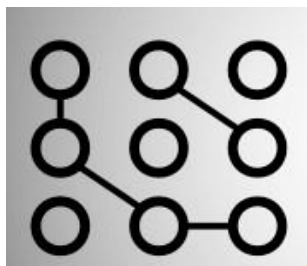
14. Jessica Maclean, M.T. Greenaway, R.P. Campion, T.M. Fromhold, A.J. Kent and C.J. Mellor  
[Aluminium Gallium Arsenide Photonic Integrated Circuits for 780 nm Optical Delivery for Quantum Sensors](#)

15. Philipp-Immanuel Schneider, Lin Zschiedrich, Xavier Garcia-Santiago and Sven Burger  
[Benchmarking different optimization algorithms for maximizing the extraction efficiency of a single-photon source](#)

16. Saverio Francesconi, Arnault Raymond, Florent Baboux, Guillaume Boucher, Jonathan Belhassen, Aristide Lemaître, Maria Amanti and Sara Ducci  
[Controlling frequency correlations and biphoton statistics in a semiconductor photonic chip](#)

17. David Phillips, Mattia Walschaers, Jan Sperling, Nicolas Treps and Ian Walmsley  
[Certification of Gaussian Boson Sampling Using Two-Point Correlation Functions](#)

18. Mauro Brotons-Gisbert, Artur Branny, Santosh Kumar, Raphaël Picard, Raphaël Proux and Brian D. Gerardot



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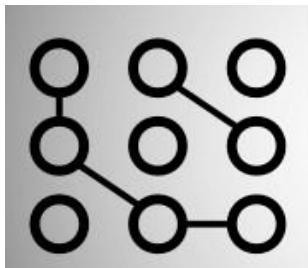


## Charge-tunable quantum dots in monolayer WSe<sub>2</sub>

## Using four-wave mixing in silica waveguides to create photons on chip

19. Clément Millet, Paul Hilaire, Juan Loredo, Carlos Antón, Abdelmounaim Harouri, Aristide Lemaître, Isabelle Sagnes, Daniel Kimura, Niccolo Somaschi, Olivier Krebs, Pascale Senellart and Loïc Lanco  
[Deterministic assembly of a spin-photon interface based on a semiconductor quantum dot](#)
20. Alistair Brash, C.L. Phillips, J. O'Hara, F. Liu, L.M.P.P. Martins, R.J. Coles, B. Royall, C. Bentham, I. Itskevich, L.R. Wilson, M.S. Skolnick and A.M. Fox  
[High Purcell Factor Generation of Coherent On-Chip Single Photons](#)
21. Jasleen Lugani and Krishna Thyagarajan  
[Switchable mode entangled photon pairs from integrated optic Mach Zehnder interferometric circuit and an electro-optic modulator](#)
22. Alberto Santamato  
[QKD silicon based Integrated photonics devices for space application](#)
23. Emil Denning, Jake Iles-Smith, Andreas Østerkryger, Niels Gregersen and Jesper Mørk  
[Fundamental cavity-waveguide interplay in cavity QED](#)
24. Devin Hugh Smith, Matthew T. Posner, T. Hiemstra, Rex H. S. Bannerman, Paolo Mennea, Steve Kolthammer, James C. Gates, Ian A. Walmsley and Peter G.R. Smith
25. Tobias Huber, Yichen Shuai, Marcelo Davanco, Olivier Gazzano and Glenn Solomon  
[Filter-free quantum dot resonance fluorescence in an integrated cavity-waveguide device](#)
26. Stefano Pierini, Xiaolun Xu, Sylvain Blaize, Quentin Glorieux, Alberto Bramati and Christophe Couteau  
[Bridging single photon emitters with nanofibers and integrated optics](#)
27. Hélène Ollivier, Guillaume Coppola, Paul Hilaire, Abdelmounaim Harouri, Niccolo Somaschi, Aristide Lemaître, Isabelle Sagnes, Loïc Lanco, Juan Loredo, Carlos Anton and Pascale Senellart  
[Fibered semiconductor sources delivering highly indistinguishable photons beyond 4 MHz rate](#)
28. Samuele Grandi, Michael Nielsen, Javier Cambiasso, Kyle Major, Sebastien Boissier, Chris Reardon, Thomas Krauss, Ed Hinds, Rupert Oulton and Alex Clark  
[Single organic molecule coupling to a hybrid plasmonic waveguide](#)
29. Federico Valmorra, Kenji Yoshida, Lauriane Contamin, Tino Cubaynes, Matthieu Dartailh, Matthieu Desjardins, Sylvain Massabeau, Kazuhiko Hirakawa, Juliette Mangeney, Audrey Cottet and Takis Kontos  
[Coupling of a terahertz-cavity to a carbon nanotube quantum dot](#)



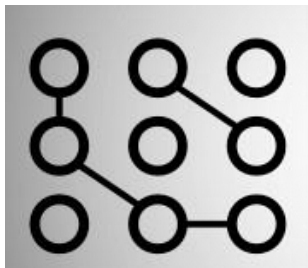


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30. Omar Hernan Ortiz Cabello, Martin Esmann, Fabrice Lamberti and Daniel Lanzillotti-Kimura  
Band structure engineering in nanomechanical devices in the 100s GHz regime
31. Giuseppe Marino  
Nonlinear AlGaAs nanoantennas for sum-frequency light and heralded photons generation
32. Nicolas Fabre, Belhassen Jonathan, Aurianne Minecci, Simone Felicetti, Maria Amanti, Arne Keller, Florent Baboux, Thomas Coudreau, Sara Ducci and Perola Milman  
The Ou-Mandel experiment revisited: producing delocalized Schrödinger cats by local frequency-time filtering
33. Thibault Harlé, Martin Cordier, Isabelle Zaquine and Philippe Delaye  
Non-uniformity induced distinguishability of nonlinearly generated photon pairs
34. Daniel Riedel, Immo Söllner, Brendan Shields, Sebastian Starosielec, Patrick Appel, Elke Neu, Patrick Maletinsky and Richard Warburton  
Deterministic enhancement of coherent photon generation from a nitrogen-vacancy centre in ultrapure diamond
35. Zhuodan Zhu, Shanghong Zhao and Chen Dong  
Orbital-angular-momentum-encoded free-space measurement device independent quantum key distribution
36. Ulysse Chabaud, Eleni Diamanti, Damian Markham, Elham Kashefi and Antoine Joux  
Programmable projective measurement with linear optics
37. Juan Lored, Carlos Anton Solanas, Bogdan Reznichenko, Paul Hilaire, Hélène Ollivier, Clement Millet, Abdelmounaim Harouri, Niccolo Somaschi, Isabelle Sagnes, Aristide Lemaître, Loïc Lanco, Alexia Auffeves, Olivier Krebs and Pascale Senellart  
Generation of light in a pure quantum superposition of 0, 1 and 2 photons
38. Martin Esmann, Abdelmounaim Harouri, Fabrice Roland Lamberti, Olivier Krebs, Pascale Senellart, Loïc Lanco, Isabelle Sagnes, Carmen Gomez Carbonell, Aristide Lemaître and Norberto Daniel Lanzillotti-Kimura  
Brillouin scattering in Bragg-based micropillar resonators at 300 GHz
39. Marcello Massaro, Evan Meyer-Scott, Nicola Montaut, Harald Herrmann and Christine Silberhorn  
Improving SPDC single-photon sources via spectral filtering and feed-forward control
40. Antoine Reigue, Jake Iles-Smith, Dara McCutcheon, Jesper Mork, Aristide Lemaître, Richard Hostein and Valia Voliotis  
Coherence properties of resonantly driven semiconductor quantum dots
41. Teodor Strömberg, Alonso Calafell, D. R. M. Arvidsson-Shukur, L. A. Rozema, V. Saggio, C. Greganti, Nick Harris, Mihika Prabhu, Jacques Carolan,



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Michael Hochberg, Tom Baer Jones, Dirk Englund, C. H. W. Barnes, and P. Walther  
[Counterfactual communication using a programmable nanophotonic waveguide](#)

42. Hans-Rudolf Jauslin, Vincent Drier, Jonas Lampart and Stéphane Guérin  
[Quantization of plasmon-polaritons with localized nanostructures](#)

43. Qing Li, Anshuman Singh, Xiyuan Lu, Jin Liu, Christian Schneider, Sven Hofling, Varun Verma, Richard Mirin, Sae Woo Nam and Kartik Srinivasan  
[Quantum light generation and frequency conversion with integrated nanophotonics](#)

44. Giora Peniakov, D. Cogan, C. Hopfmann and D. Gershoni  
[A three folded faster quantum knitting machine for deterministic generation of cluster states of many entangled photons](#)

45. Xifeng Ren  
[Multiphoton entangled states generation on silicon](#)

46. Michael Stefszky, Raimund Ricken, Christof Eigner, Viktor Quiring, Harald Herrmann and Christine Silberhorn  
[Optical Squeezing from a Ti:LiNbO<sub>3</sub> Optical Waveguide Resonator](#)

47. Matteo Santandrea, Michael Stefszky, Vahid Ansari and Christine Silberhorn  
[Fabrication limits of waveguides in chi-2 nonlinear crystals and impact on quantum optics applications](#)

48. Lukas Hanschke, Kevin Fischer, Jakob Wierzbowski, Stefan Appel, Daniil Lukin, Shuo Sun, Rahul Trivedi, Malte Kremser, Tobias Simmet, Constantin

Dory, Jelena Vuckovic, Jonathan Finley and Kai Müller  
[Generation of single-photon and two-photon pulses from a self-assembled quantum dot](#)

49. David Barral Raña, Nadia Belabas, Kamel Bencheikh, Juan Ariel Levenson, Tommaso Lunghi, Florent Doutre, Olivier Alibert, Sébastien Tanzilli, Alicia Petronela Rambau, Alin Marian Apetrei and Sorin Tascu  
[A guidonics-based quantum circuit](#)

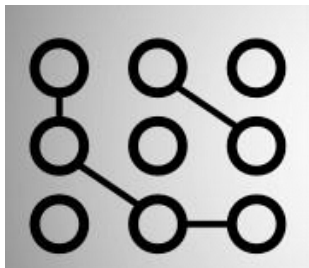
50. Martin Cordier, Adeline Orieux, Benoit Debord, Frédéric Gérome, Alex Gorse, Matthieu Chafer, Eleni Diamanti, Philippe Delaye, Fetah Benabid and Isabelle Zaquine  
[Engineering four-wave mixing spectral entanglement in hollow-core fibers](#)

51. David Barral Raña, Nadia Belabas, Kamel Bencheikh, Juan Ariel Levenson, Virginia D'Auria and Sébastien Tanzilli  
[The nonlinear Chi\(2\) directional coupler: a versatile source for continuous variable quantum information](#)

52. Daniel Balado, Xesús Prieto-Blanco, David Barral and Jesús Liñares  
[Autocompensating high-dimensional quantum cryptography by using integrated photonic devices in multicore optical fiber spatial multiplexing systems](#)

53. Xiyuan Lu, Qing Li, Daron Westly, Gregory Moille, Anshuman Singh, Vikas Anant and Kartik Srinivasan  
[Chip-based visible-telecom photon pair sources using integrated microresonators](#)

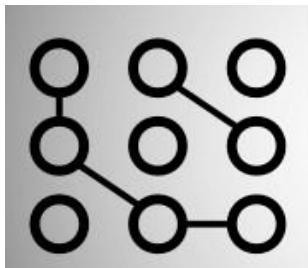
54. Niraj Kumar, Federico Centrone, Eleni Diamanti and Iordanis Kerenidis



Quantum superiority for verifying NP-complete problems with coherent states and linear optics

55. Ravi Raghunathan, Guillaume Ricard, Filippo Miatto, Isabelle Zaquine and Romain Alléaume  
[Single Qubit Arbitrary Unitary Synthesis Using Photonic Spectral Encoding](#)
56. Saroch Leedumrongwatthanakun, Luca Innocenti, Hugo Defienne, Thomas Juffmann, Alessandro Ferraro, Mauro Paternostro and Sylvain Gigan  
[Quantum information processing with multimode fiber](#)
57. Valentina Moskalenko, Ronald Broeke, Erwin A. J. M. Bente, David Álvarez-Outerele, Pablo Vilar-Gómez and Francisco J. Díaz-Otero  
[Design of a fully integrated quantum number generator](#)
58. Alessandro Gaggero and Roberto Leoni  
[Pulse position readout of a SNSPD array integrated in photonic circuit](#)
59. Micol Previde Massara, Federico Sabattoli, Federico Pirzio, Matteo Galli and Daniele Bajoni  
[Self-pumped Silicon Ring Source of Photon Pairs](#)
60. Dmitry Farfurnik and Nir Bar-Gill  
[Pursuing many-body dynamics in spin ensembles in diamond](#)
61. Kazuyuki Kuroyama, C. Y. Chang, J. Muramoto, S. R. Valentin, A. Ludwig, A. D. Wieck, S. Matsuo, A. Oiwa and S. Tarucha  
[Towards entanglement transfer from a single photon pair to a single electron-photon pair using spin-resolved light hole excitation](#)
62. Beatrice Da Lio, Costantino Agnesi, Lorenzo Cardi, Daniele Cozzolino, Badhise Ben Badir, Karim Hassan, Adriano Della Frera, Alessandro Ruggeri, Andrea Giudice, Giuseppe Vallone, Paolo Villaresi, Alberto Tosi, Karsten Rottwitt, Yunhong Ding and Davide Bacco  
[Towards integrated platforms for quantum communications based on Hong-Ou-Mandel interference](#)
63. Farid Samara, Anthony Martin, Claire Autebert, Félix Bussi eres, Hugo Zbinden and Rob Thew  
[High-Dimension and Sequential Time-Bin Entanglement using SiN Microring Resonator Photon-Pair Sources](#)
64. Michal Vyvlecka, Jonas Zeuner, Alexander Szameit and Philip Walther  
[Integrated optics for cluster state generation](#)
65. I.V. Dyakonov, I.A. Pogorelov, I.V. Kondratyev, I.B. Bobrov, A.A. Kalinkin, P.V. Dyakonov, S.A. Evlashin, S.S. Straupe and S.P. Kulik  
[Reconfigurable photonics on a glass chip](#)

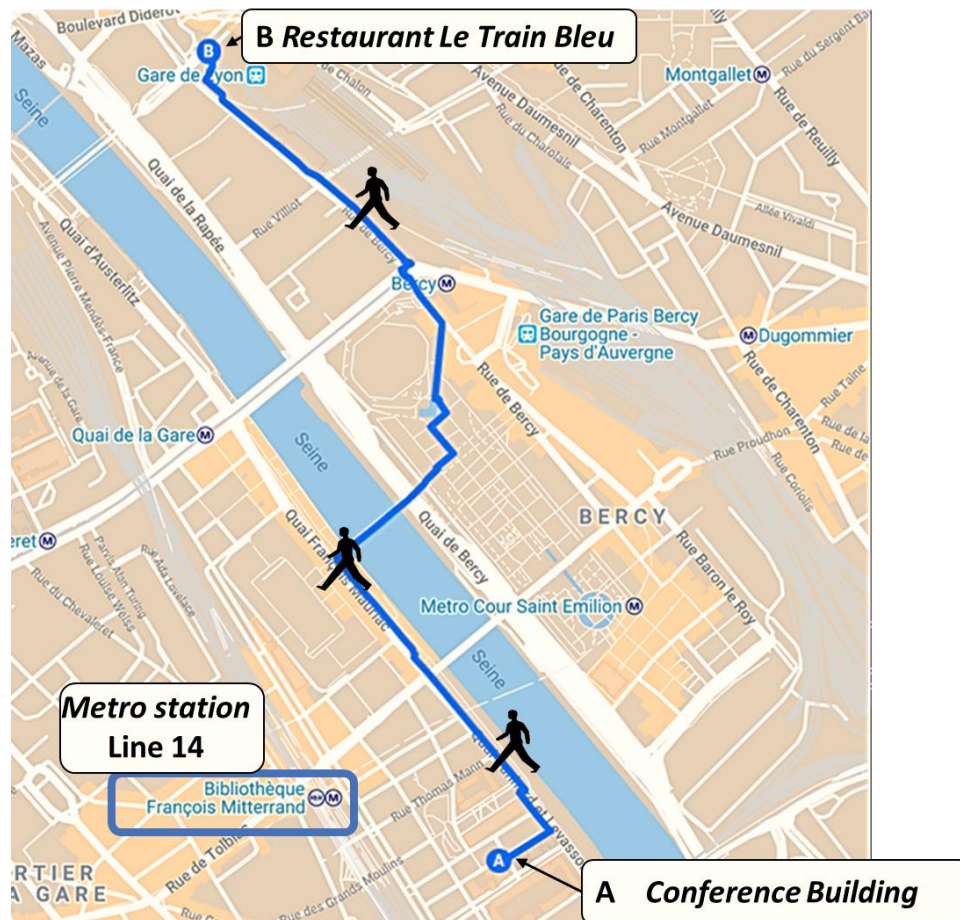


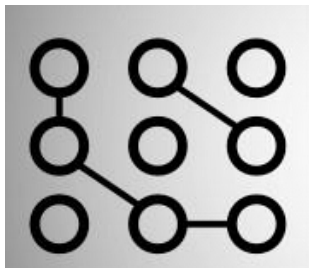


## Conference Gala Dinner

The conference fee includes coffee breaks and buffet for the noon meals.

The conference dinner will take place on **Tuesday 16th of October** at the restaurant **Le Train Bleu** (1st floor Gare de Lyon, Place Louis Armand 75012 PARIS). You can reach the place by foot (35 min) or metro 14 (20 min, direct trip: Bibliothèque François Mitterrand to Gare de Lyon):

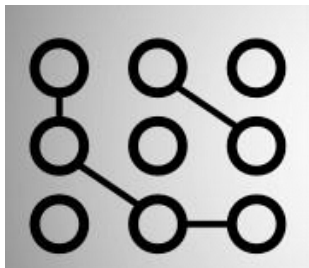




## Conference program

### Monday 15

08:30	Registration
09:20	Opening
	<b>PHOTONIC CIRCUITS I</b> - <i>Chair of the session: Andrew White</i>
09:30	<b>Dirk Englund:</b> Memory-Integrated Photonic Integrated Circuits for Quantum Networks
10:00	<b>Klaus Joens:</b> Hybrid quantum photonic integrated circuits
10:20	<b>Mirko Lobino:</b> Continuous Variable quantum optics on-chip
10:40	Coffee Break
	<b>PHOTONIC CIRCUITS II</b> - <i>Chair of the session: Frederic Grosshans</i>
11:10	<b>Fabio Sciarrino:</b> Machine learning for processing and certification of photonic quantum information
11:40	<b>Caterina Taballione:</b> Programmable 8x8 linear optical network based on silicon nitride waveguides for quantum information processing
12:00	<b>Presentation of exhibitors</b>
12:20	Lunch break
14:00	<b>Poster session I</b> (odd numbers)
	<b>QUANTUM PROTOCOLS I</b> - <i>Chair of the session: Edo Waks</i>
15:30	<b>Chao-Yang Lu:</b> Efficient boson sampling with single-photon source
16:00	<b>Jelmer Renema:</b> The hardness of boson sampling under imperfections
16:20	<b>Jonas Zeuner:</b> Experimental Quantum Homomorphic Encryption
16:40	Coffee Break

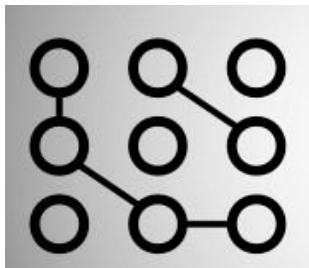


	<b>PHOTON-PHOTON GATES</b> - <i>Chair of the session: Kartik Srinivasan</i>
17:10	<b>Stephan Goetzinger:</b> Close to perfect coupling of photons to a single molecule in a microcavity
17:40	<b>Daniel Najer:</b> Coupling a charge-tunable quantum dot to a cavity mode with cooperativity above one hundred
18:00	<b>Dominic Hallett:</b> Quantum non-linear optics with a quantum dot in a nano-photon waveguide: Influence of the Fano effect on photon statistics
18:20	End of day 1

## Tuesday 16

	<b>QUANTUM PROTOCOLS II</b> - <i>Chair of the session: Sophia Economou</i>
09:30	<b>Andrew White:</b> Hypercubes, drums, and single photons
10:00	<b>Carlos Anton-Solanas:</b> Interfacing solid-state single-photon sources and integrated photonics circuits: high rate three-photon coalescence
10:20	<b>Andrea Olivo:</b> Investigating the optimality of ancilla-assisted linear optical Bell measurements
10:40	Coffee break
	<b>SOURCES I</b> - <i>Chair of the session: Mirko Lobino</i>
11:10	<b>Virginia d'Auria:</b> On chip squeezing generation and detection
11:40	<b>Simone Atzeni:</b> Integrated source of entangled photon pairs in a hybrid laser-written circuit
12:00	<b>Marcelo Davanco:</b> Heterogeneous Quantum Integrated Photonics with InAs Quantum Dots
12:20	Lunch break
	<b>QUANTUM PROTOCOLS III</b> - <i>Chair of the session: Fabio Sciarrino</i>
14:00	<b>Edo Waks:</b> Photonic quantum information processing enabled by semiconductor spin
14:30	<b>Dario Lago-Rivera:</b> Storage of frequency-multiplexed heralded single photons in a laser-written waveguide
14:50	<b>Marco Avesani:</b> Secure heterodyne-based quantum random number generator at 17 Gbps

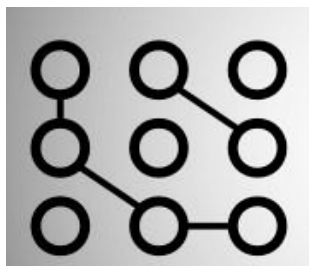




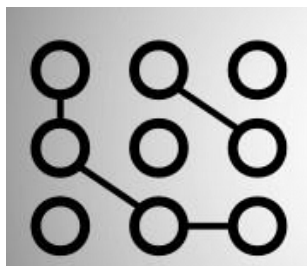
15:10	Coffee break
	<b>INTEGRATED DETECTORS</b> - <i>Chair of the session: Wolfgang Loeffler</i>
15:40	<b>Wolfram Pernice:</b> Detection of single photons in nanophotonic circuits
16:10	<b>Jan Philipp Höpker:</b> Integrated transition edge sensors on lithium niobate waveguides
16:30	<b>Luis Trigo Vidarte:</b> Correlations with on-chip detection for continuous-variable QKD
16:50	<b>Poster session II</b> (even numbers)
18:20	End of poster session
19:30	<b>Banquet</b>
23:30	End of day 2

## Wednesday 17

	<b>SOURCES II</b> - <i>Chair of the session: Stephan Goetzinger</i>
09:30	<b>Hiroki Takesue:</b> Quantum communication experiments with optical waveguide devices
10:00	<b>Yannick Chassagneux:</b> Exploiting 1D exciton-phonon coupling for tunable single photon source with carbon nanotube
10:20	<b>Maja Colautti:</b> Integrated Organic Molecules for Quantum Technologies
10:40	Coffee break
	<b>PHOTONIC CIRCUITS III</b> - <i>Chair of the session: : Maria Amanti</i>
11:10	<b>Anthony Laing:</b> Photonic simulations of molecular quantum dynamics
11:40	<b>Giacomo Corrielli:</b> Quantum interference between topologically protected edge states in a laser written waveguide array
12:00	<b>Devin H. Smith:</b> Modular Linear Circuits for Integrated Quantum Optics
12:20	Lunch break



	<b>ENTANGLEMENT I</b> - <i>Chair of the session: Anthony Laing</i>
14:00	<b>Sophia Economou:</b> Spin-photon interfaces for quantum computing and communication
14:30	<b>Stefano Paesani:</b> High-dimensional entanglement in large-scale Silicon quantum photonics
14:50	<b>Hagai Eisenberg:</b> Generating multi-photon entangled states from a single deterministic single-photon source
15:10	Coffee break
	<b>ENTANGLEMENT II</b> - <i>Chair of the session Isabelle Zaquine</i>
15:40	<b>Maria Amanti:</b> Generation and manipulation of hyper-entangled frequency combs in an AlGaAs chip
16:10	<b>Christophe Galland:</b> Photonic quantum correlations mediated by individual phonons
16:30	Conclusion
16:40	End of day 3



## Summary of partners and sponsors

We would like to acknowledge the numerous partners from local, regional and national French institutions supporting this conference; and also from the five private companies collaborating to this event.



Website: <http://www.attocube.com/>

Attocube systems AG is a German manufacturer of cryogenic equipment: low vibration helium free cryostats, liquid helium based cryostats, cryogenic scanning probe microscopes; also a manufacturer of nano components: nano positioners, metrology sensors, electronic and software control units.

The fundamental innovation of the company was the development of ultra-compact, nanoprecise positioning devices, which were – for the first time ever – adaptable to extreme conditions, such as cryogenic temperatures (close to the absolute zero point of temperature,  $-273.15^{\circ}\text{C}$ , or 0 K, down to 300 mK), ultra-high vacuum environments ( $5 \times 10^{-11}$  mbar) and highest magnetic fields (+31 T).



Website: <https://www.idquantique.com/>

ID Quantique (IDQ) provides quantum-safe network encryption, secure quantum key generation and quantum key distribution solutions and services to the financial industry, enterprises and government organisations globally.

IDQ also commercializes a quantum random number generator, which is the reference in the security, simulation and gaming industries.

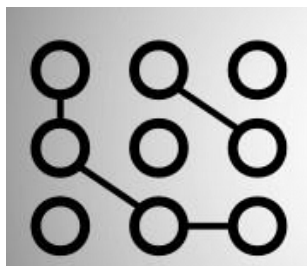


**GDR IQFA (Website in French)**

Website: <http://gdriqfa.unice.fr>

After a year of transition, the birth of a new GDR, supported by the INP and INSIS CNRS Institutes, with which quantum information community is mostly associated, appeared to be essential. The goal of the GDR "Quantum Information: Foundations and Applications" is two-fold: first, to establish a common base of knowledge, and second, to use this platform to emulate new knowledge.





**Lip6**

Website: <https://www.lip6.fr/>

The LIP6, Sorbonne University and French National Center for Scientific Research (CNRS), UMR 7606 Sorbonne University - CNRS, is a computer science research laboratory dedicated to the modeling and the resolution of fundamental problems driven by applications, as well as to the implementation and the validation through academic and industrial partnerships.



**My Cryo Firm**

Website: <http://www.mycryofirm.com/>

My Cryo Firm was created in 2013 by Julien Paris, Cryogenic Engineer. After 10 years of experience in cryogenics that led him among others to design and build cryogenic systems such as dilution cryostats (up to 10mK), 300mK cryostat on liquid base and cryogenerator, Julien founds his own company with the desire to create fully customizable and scalable cryostats for leading applications in research and industry.

# NanoSaclay

Laboratoire d'Excellence  
en Nanosciences et Nanotechnologies

**NanoSaclay**

Website: <http://nanosaclay.fr/>

The 'LabEx NanoSaclay' is an interdisciplinary cluster of excellence dedicated to nanosciences and nanotechnology. It is supported by local renowned research and training institutions and integrated to the Paris-Saclay University.

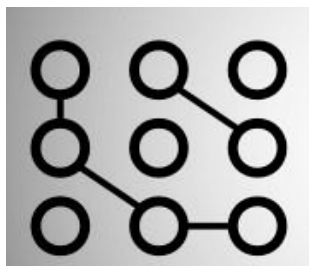
The LabEx NanoSaclay unifies 450 scientists in a world-size cluster focused on interdisciplinarity and reactivity, able to address key fundamental, economic and societal issues. For the first four years, the scientific dynamism was organized around three 'flagship projects': (i) Quantum and spin-based nanoelectronics, (ii) Nano-drugs for the treatment of severe diseases and (iii) NanoPhotonics, nano-objects for energy control.



**PCQC**

Website: <http://www.pcqc.fr/>

The Paris Centre for Quantum Computing (PCQC) in Paris, France, brings together computer scientists, theoretical & experimental physicists and mathematicians that work in and around Paris. Our goal is to develop novel quantum information and communication technologies and lead the way from a Personal Computer (PC) to a Quantum Computer (QC).



**Quandela**

Website: <http://quandela.com/>

QUANDELA is a spinoff company from the Centre of Nanoscience and Nanotechnology (C2N - CNRS), in France, founded in 2017. We commercialize top-class quantum light sources to boost the research in quantum optics, to allow the emergence of further innovations in the field of quantum photonics and scale up quantum technologies outside the academic world.

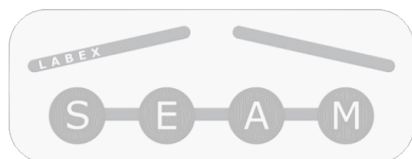


**SINGLE QUANTUM**

**Single Quantum**

Website: <http://singlequantum.com/>

Single Quantum was founded in January 2012 in Delft, the Netherlands as a spin-off from Kavli Institute of Nanoscience at TU Delft. Single Quantum develops and manufactures single photon detection systems based on the technology of superconducting nanowires. We are a team of scientists and engineers who are devoted to commercialize the technology and bring the best products and service to our users.



**Seam Labex**

Website: <http://www.labex-seam.fr/>

The " Science and Engineering for Advanced Materials and devices " (SEAM) Labex (Lab of Excellence) project is focused on material sciences using a multi-scale approach, from material elaboration, characterization, description, integration in specific devices and applications in various fields of technology. Inorganic nano-materials, nanostructured carbon-based materials, diamond single crystal and nanostructured materials are processed allowing applications in the field of photonics, electronics, opto-electronics and aeronautics. It was approved in 2010 by a panel of international experts and is funded by the French Government.



**SirTeq**

Website: <http://www.sirteq.org/>

The SIRTEQ project labeled Major Area of Interest (IMG) is funded by the Île-de-France Region. SIRTEQ brings together the largest European concentration of academic teams in the field of quantum technologies. Its main objective is to promote an academic research of excellence in the field of quantum technologies in Île-de-France taking into account current social issues and the importance of knowledge and technology transfer.

