



IEEE Photonics Society French Chapter Seminar Announcement

Title: Integrated Quantum Frequency Combs

Speaker: Roberto Morandotti IEEE, Distinguished Lecturer

NRS-EMT Varennes (QC), Canada) Centre Énergie Matériaux Télécommunications
1650, boulevard Lionel-Boulet Varennes (Québec) J3X 1S2 Canada
Email: morandotti@emt.inrs.ca

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Location: TELECOM ParisTech 46 rue Barrault, 75634 Paris Cedex 13
Room/Pièce: A310

Getting there: <https://www.telecom-paristech.fr/telecom-paristech/adresses-acces-contacts.html>
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Abstract

The generation of optical quantum states on an integrated platform will enable low-cost and accessible advances for quantum technologies such as secure communications and quantum computation. We demonstrate that integrated quantum frequency combs (based on high-Q microring resonators made from a CMOS-compatible, high refractive-index glass platform) can enable, among others, the generation of pure heralded single photons, cross-polarized photon pairs, as well as bi- and multi-photon entangled qubit and quDit states over a broad frequency comb covering the S, C, L telecommunications band, constituting an important cornerstone for future practical implementations of photonic quantum information processing.

Bio



Roberto Morandotti received a M.Sc. in Physics from the University of Genova (Italy) in 1993, and a Ph.D. degree from the University of Glasgow (Scotland) in 1999. From 1999 to 2001, he was with the Weizmann Institute of Science, Rehovot, Israel, and from 2002 to 2003, he was with the University of Toronto, Toronto, ON, Canada, where he worked on the characterization of novel optical structures. In June 2003, he joined the Institut National de la Recherche Scientifique-Centre Energie, Matériaux et Télécommunications (INRS-EMT), Université du Québec,

Montreal, QC, Canada, where he has been a Full Professor since 2008. He is the author and coauthor of more than 750 papers in international scientific journals and conferences (including over 50 contributions to Physical Review Letters, Nature, Science, Nature Photonics, Science Advances and Nature Communication). His research interests deal with the linear and nonlinear properties of various structures for integrated optics, with the study of novel thin film based technologies for optoelectronics applications as well as with nonlinear optics at unusual wavelengths (e.g., THz). Dr. Morandotti is currently serving and/or has served as a Technical Committee Member and a Chair for several Optical Society of America (OSA), Lasers and Electro-Optics Society, IEEE and SPIE meetings. He is an E.W.R. Steacie Memorial Fellow (the most prestigious award for young scientists in Canada), a Fellow of the Royal Society of Canada, and a Fellow of the OSA, APS, SPIE among others.

For more information, please feel free to contact:

Philippe Gallion TELECOM ParisTech

Phone: (33) 1-45-81-77-02

Fax: (33) 1-45-89-00-20

Email: gallion@ieee.org

French Photonics Society Chapter Website: <http://ieee-photonics.fr/>