IEEE Photonics society, French Chapter/Chapitre Français
Seminar announcement/Annonce de séminaire

Title/Titre:	Advanced optical sources for spectrally efficient photonic systems
Speaker/Orateur:	**Speaker/Orateur:** Liam Barry, IEEE Distinguished Lecturer School of Electronic Engineering, Dublin City University,Ireland. Email: liam.barry@dcu.ie
Date :	Friday, November 30th, 2018 at 10.00 am / Vendredi 30 novembre 2018 à 10h.
Location/Lieu:	TELECOM ParisTech**,** Ecole Nationale Supérieure des Télécommunications, 46 rue Barrault, 75634 Paris Cedex 13 Room/Pièce : Pièce A310
Getting there: Comment s'y rendre :	https://www.telecom-paristech.fr/eng/practical-information/getting-there.html http://www.telecom-paristech.fr/telecom-paristech/adresses-acces-contacts.html

Abstract/Résumé
The continuing growth in demand for bandwidth (from residential and business users), necessitates significant research into new advanced technologies that will be employed in future broadband communication systems. Two specific technologies, becoming increasingly important for future photonic systems, are wavelength tunable lasers and optical frequency combs. Although these topics have been studied for over two decades their significance for the development of future ultra-high capacity photonic systems has only recently been fully understood. Wavelength tunable lasers are currently becoming the norm in optical communication systems because of their flexibility and ability to work on any wavelength. However, as their operating principles are different to standard single mode lasers they can effect how future systems will operate. For example as optical transmission systems move towards more coherent transmission (where the data is carried using both the intensity and phase of the optical carrier), the phase noise in these tunable lasers will become increasingly important. Optical frequency combs also have many applications for future photonics systems, and for telecommunications they can be used to obtain the highest spectral efficiency in optical transmission systems by employing the technology of optical frequency division multiplexing (OFDM), and also for generation of high frequency RF signals in future 5G networks. Wavelength tunable lasers and optical frequency combs are thus topics at the leading edge of current photonics systems research, and their detailed understanding promises new applications in all-optical signal processing, optical sensing and metrology, and specifically telecommunications. This talk will focus on the development and characterization of various wavelength tunable lasers and optical frequency combs, and then outline how these sources can be employed for developing optical transmission systems and networks which make the best use of available optical spectrum.

Biography/Biographie

Liam Barry received his BE (Electronic Engineering) and MEngSc (Optical Communications) degrees from University College Dublin in 1991 and 1993 respectively. From February 1993 until January 1996 he was employed as a Research Engineer in the Optical Systems Department of France Telecom's Research Laboratories (now known as Orange Labs) in Lannion, France, and as a result of this work he obtained his PhD Degree from the University of Rennes in France. In February 1996 he joined the Applied Optics Centre in Auckland University, New Zealand, as a Research Fellow and in March 1998 he took up a lecturing position in the School of Electronic Engineering at Dublin City University, and established the Radio and Optical Communications Laboratory. From April 2006 until February 2010 he served as Director of The Rince Institute, an interdisciplinary research centre with over 100 researchers. He is currently a Professor in the School of Electronic Engineering, a Principal Investigator for Science Foundation Ireland, and Director of the Radio and Optical Communications Laboratory. His main research interests are; all-optical signal processing, optical pulse generation and characterization, hybrid radio/fibre communication systems, wavelength tuneable lasers for reconfigurable optical networks, and optical performance monitoring. He has published over 200 articles in international peer reviewed journals, 250 papers in international peer reviewed conferences, and holds 10 patents in the area of optoelectronics. He has been a TPC member for the European Conference on Optical Communications (ECOC) since 2004, and a TPC member for the Optical Fibre Communication Conference (OFC) from 2007 to 2010, serving as Chair of the Optoelectronic Devices sub-committee for OFC 2010.

For more information, please feel free to contact/Pour tout renseignement complémentaire, merci de contacter :
Philippe Gallion, TELECOM ParisTech Téléphone : (33) 1-45-81-77-02 et Email: gallion@ieee.org
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