



**IEEE Photonics Society (Formerly IEEE Lasers and Electro-Optics Society)
French Chapter/Chapitre Français
Seminar announcement/Annonce de séminaire**

Title/Titre: Strongly injection-locked whistle-geometry microring lasers for optical communications and RF photonics at 100 GHz and beyond

Speaker/Orateur: Professor Marek Osinski
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Date : Wednesday, November 5, 2014 at 16:00 pm/mercredi 5 novembre 2014 à 16h.
Location/Lieu: TELECOM ParisTech
Ecole Nationale Supérieure des Télécommunications, CNRS/LTCI
46 rue Barrault, 75634 Paris Cedex 13
Room/Pièce : A310

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Abstract/Résumé:

A novel scheme for modulation bandwidth enhancement and tailoring is presented involving a distributed-Bragg-reflector or distributed-feedback master laser monolithically integrated with one or more strongly injection-locked whistle-geometry unidirectional microring lasers (WRLs). Enhanced high-speed performance of the novel scheme is confirmed in numerical modeling by comparing it with an earlier scheme, where weak optical injection was provided by a waveguide directional coupler adjacent to a bidirectional ring laser. Rate equation analysis of strongly injection-locked WRLs shows a greatly improved performance in terms of modulation response and frequency chirp, especially when direct current modulation is applied to the first ring laser in a cascaded arrangement.

Biography/Biographie



Marek Osinski is Professor of Electrical and Computer Engineering, Physics and Astronomy, and Computer Science at the University of New Mexico, USA, currently on sabbatical leave at Télécom ParisTech. His current research interests include modeling and simulation of optoelectronic devices, fabrication and characterization of optoelectronic integrated circuits, growth and properties of novel optoelectronic materials, development of semiconductor ring-laser-based rotation sensors, synthesis and characterization of colloidal nanocrystals, biomedical applications of colloidal quantum dots, nuclear radiation detectors, nanophosphors, and solar hydrogen production via photocatalytic water splitting. He has chaired or co-chaired 38 SPIE conferences and symposia, and edited 33 SPIE Proceedings volumes. He has served on numerous conference program committees, including CLEO. He has authored or coauthored over 500 technical papers, 5 book chapters, and 16 patents, of which 8 are pending. He is a Fellow of SPIE (2002) and a Fellow of the Optical Society of America (2003). In 1992 -2003, he served as North American Editor of Progress in Quantum Electronics. Since 2012, he has been serving as Associate Editor of IEEE Photonics Journal.

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