

[Creating High-Bandwidth Islands – A Solution to the Current Mobile Radio Spectrum Crunch](#)

March 22nd, 2012

The Joint Communications and Computer Chapter of IEEE Kingston Section is proud to announce the following Technical Lecture.

Title: Creating High-Bandwidth Islands – A Solution to the Current Mobile Radio Spectrum Crunch

Time: Thursday, March 29, 1:00 PM

Location:RMC, Sawyer Building, S4301

Speaker: Prof. Mohsen Kavehrad, Director of CICTR, Center for Information and Communications Technology Research, The Pennsylvania State University, University Park, PA

Abstract: As we step further into the 21st century, the demand for sustainable energy-efficient technology grows higher. The important area of electric lighting, currently dominated by decades-old incandescent and fluorescent sources, is being taken over by Visible Light Emitting Diodes (V-LED), which are solid state devices with greater energy-efficiency in lumens. Replacement of current inefficient lighting by these LEDs will result in reduction of global carbon dioxide emissions, a major cause of global warming, among other things. LED holds the potential, in the field of photonics, to be as transformational as the transistor was in electronics. This core device has the potential to revolutionize how we use light, including not only for illumination, but communications, sensing, navigation, imaging and many more applications. In this presentation, we will highlight some of these potentials.



Speaker Bio: Dr. Mohsen Kavehrad, is the W. L. Weiss Chair Professor of Electrical Engineering at The Pennsylvania State University. He received his Ph.D. degree in Electrical Engineering from Polytechnic Institute of New York University (formerly; Brooklyn Polytechnic Institute) in 1977. Between 1978 and 1981, he worked for Fairchild Industries (Space Communications Division) and GTE (Satellite Corp. and Labs.). He then joined Bell Laboratories where he worked on

communications and networking research problems. After divestiture of Bell Systems, he joined the Department of Electrical Engineering at University of Ottawa, as a Full Professor in March 1989. He was also the Director of Photonic Networks and Systems Thrust and a project leader in the Communications and Information Technology Ontario (CITO) and the Director of Ottawa-Carleton Communications Center for Research (OCCCR). He was an academic visitor (senior technical consultant) at NTT Laboratories, Japan, in summer 1991. He spent a six months sabbatical term as an academic visitor (senior technical consultant) at NORTEL, Ottawa, in 1996. In January 1997, he joined the Department of Electrical Engineering, The Pennsylvania State University as the W. L. Weiss (AMERITECH) Endowed Chair Professor of Electrical Engineering. In August 1997 he was appointed as the founding Director of Center for Information and Communications Technology Research (CICTR). During 1997-1998 he was also the CTO and a Vice President at Tele-Beam Inc., State College, PA. He spent a six months sabbatical term as an academic visitor (senior technical consultant) at AT&T Shannon Research Labs., Florham Park, New Jersey, in 2004. He has also served as a consultant to a score of major corporations and government agencies.

Dr. Kavehrad's research contributions have been in the fields of: Satellite communications, Fixed radio communications, Portable and Mobile radio communications, Atmospheric Laser communications, Fiber optic communications and fiber optic networks. His current research interests are in the areas of technologies, systems, and network architectures that enable the vision of the information age; e.g., Broadband Wireline/Wireless Communications Networked Systems and Optical Communications Networked Systems. Since the start of his academic career, these research topics and others have led to significant graduate research. He was elected a Fellow of the IEEE in January 1992 for his contributions to Digital Wireless Communications and Optical Fiber Systems and Networks. He received 3 Exceptional Technical Contributions awards while working at Bell Laboratories for his works on Wireless Communications Systems, the 1990 TRIO Feedback award for his patent on a "Passive Optical Interconnect" and the 2001 IEEE VTS Neal Shepherd best propagation paper award and 3 IEEE Lasers and Electro-Optics Society best paper awards and a Canada NSERC PhD-thesis gold medal award, jointly with his former graduate students for their works on wireless and optical systems. He received the 2009 DesignCon Paper Award in the High-Speed and RF Design Category. He also received the Paper of the Year Award from ETRI Journal in December of 2009. In March 2011, he was invited and joined the Smart Lighting NSF Engineering Research Center (ERC) as a member of the Center's Scientific Advisory Board.

He has lectured worldwide as an IEEE Distinguished Lecturer, and as plenary and keynote speaker at leading conferences. His works have been published in over 350 refereed journal and conference papers, several books and book chapters, and he holds several key issued patents in these areas.

Dr. Kavehrad's professional activities include being on the Advisory Committee of the Department of Electrical Engineering at Worcester Polytechnic Institute (WPI) in MASS (1998-2003), serving as a reviewer and panelist for the National Science Foundation, has chaired review panels for NSERC-Canada and served as a reviewer for multiple technical journals and conferences. He is a former Technical Editor for the IEEE Transactions on Communications, IEEE Communications Magazine and the IEEE Magazine of Light-wave Telecommunications Systems. Presently, he is on the Editorial Board of the International Journal of Wireless Information Networks. He served

as the General Chair of leading IEEE conferences and workshops. He has chaired, organized and been on the advisory committee for several international conferences and workshops.

Dr. Kavehrad has been quoted in such internationally circulated publications and media as the New York Times, Electronics Times, IEEE Communications Society Industry News Cache, Science Daily Magazine, Wireless News Factor, Photonics Spectra, TRN News, Laser Focus, Cabling Journal, Scientific American Journal, MIT Technology Review, EE TIMES in UK and the BBC in London.

Contacts: For further details, please contact Dr. Francois Chan (chan-f@rmc.ca) from Dept. of Elec. & Comp. Eng., RMC.

This seminar is intended for a general audience interested in Electrical and Computer Engineering. All are welcome! Refreshments will be served.

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