



IEEE Okanagan Subsection Presents

Ekram Hossain, IEEE Fellow
Dept. of Electrical and Computer Engineering,
University of Manitoba



Evolution toward 5G cellular: Key challenges and enabling technologies

Time & Date at OC: 6 pm, July 13th, 2015. **Location:** E103, [Okanagan College](#), 1000 KLO Rd, Kelowna, BC V1Y4X8 ([parking](#) info). **Registration Page:** <http://tinyurl.com/o8fob93>.

Time & Date at UBCO: 10 am, July 14th, 2015. **Location:** EME 1151, UBC, Okanagan Campus, Kelowna, BC. **Registration Page:** <https://meetings.vtools.ieee.org/m/35083>.

Talk Abstract: The evolving fifth generation (5G) cellular wireless systems will have a multi-tier architecture consisting of macrocells, different types of licensed small cells, relays, and device-to-device (D2D) networks to serve users with different quality-of-service (QoS) requirements in a spectrum and energy-efficient manner. Starting with the visions and requirements for 5G cellular networks, the key challenges in the design and deployment of these networks will be discussed and several enabling technologies for these networks will be reviewed. In particular, concepts of tier-aware resource allocation, distributed uplink cell association and power control, cognitive spectrum access by network tiers, mode selection and power control for D2D communication, radio frequency (RF) energy harvesting-based D2D communication, and interference management in multi-tier cellular networks in presence of energy harvesting will be discussed.

Speaker Biography: Ekram Hossain (IEEE Fellow) is currently a Professor in the Department of Electrical and Computer Engineering at University of Manitoba, Winnipeg, Canada. He received his Ph.D. in Electrical Engineering from University of Victoria, Canada, in 2001. His current research interests include design, analysis, and optimization of wireless/mobile communications networks, cognitive radio systems, and network economics. He has authored/edited several books in these areas (<http://home.cc.umanitoba.ca/~hossaina>). Dr. Hossain serves as the Editor-in-Chief for the IEEE Communications Surveys and Tutorials, and an Editor for IEEE Wireless Communications. Also, currently he serves on the IEEE Press Editorial Board. Previously, he served as the Area Editor for the IEEE Transactions on Wireless Communications in the area of "Resource Management and Multiple Access" from 2009-2011, an Editor for the IEEE Transactions on Mobile Computing} from 2007-2012, and an Editor for the IEEE Journal on Selected Areas in Communications - Cognitive Radio Series from 2011-2014. Dr. Hossain has won several research awards including the University of Manitoba Merit Award in 2010 and 2014 (for Research and Scholarly Activities), the 2011 IEEE Communications Society Fred Ellersick Prize Paper Award, and the IEEE Wireless Communications and Networking Conference 2012 (WCNC'12) Best Paper Award. He is a Distinguished Lecturer of the IEEE Communications Society.

Refreshments will be provided. For further information please contact **youry at ieee.org**.