L-band Wavelength Division Multiplexed System: A Key Technology for Next-generation Optical Communication Networks

Date: **Tuesday, November 24th, 2020**
Time: **01: 00 PM – 01: 50 PM**
Location: **Join Zoom Meeting**
Meeting ID: 993 0591 5955 Passcode: 881794

Speaker:

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Abstract:

Wavelength division multiplexed (WDM) passive optical networks (WDM-PONs) are perceived as the ultimate form of next-generation passive optical networks (NG-PONs) that show promising outlooks in meeting the ever-growing demand of telecommunication capacities and internet traffic. Furthermore, key requirements of minimum capital and operational expenditure of communication system demand exploring novel transmitters and receivers, which are the fundamental optical network blocks. Hence, in this talk, a new-class of transmitter laser source based on InAs/InP quantum dash nanostructures will be highlighted, and recent promising results of this semiconductor source's deployment in L-band WDM will be presented. The results support quantum dash lasers as ideal contenders to satisfy various requirements of NG-PONs, owing to is broadband emission in the L-band region, which allows for expanding the utilizable bandwidth away from the over-exhausted C-band in addition to accommodating more network subscribers for less capital expenditure.

Bio:

Dr. Mohammed Zahed Mustafa Khan received a Ph.D. degree in Electrical Engineering from King Abdullah University of Science and Technology (KAUST), Saudi Arabia, in 2013, and was SABIC postdoctoral research fellow in the Photonics Laboratory, KAUST, from 2014-2015. He joined the Electrical Engineering (EE) Department, King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia, in Sep 2015, where he is currently an Associate Professor of EE. He has contributed significantly in the area of semiconductor lasers and super-luminescent diodes. Presently, his research focus is on the development and applications of visible and near-infrared lasers for visible light communication and optical access networks, respectively. Dr. Khan is a senior member of OSA and IEEE.