Adaptive Transmission Schemes and Interference Management for Wireless Networks

Abstract: The rapid increase in data rate over wireless communication systems is expected to demand much higher energy consumption than current levels. Therefore, lowering energy consumption of future wireless radio systems is currently demanding greater attention in wireless systems industry. These requirements create inter-disciplinary research challenges, where developed schemes have to function adequately with reduced processing load while achieving adequate performance.
This presentation focuses on physical layer techniques for multiuser time and spectrum shared communications, which can achieve enhanced bandwidth efficiency, extended coverage capacity, low processing complexity, and reduced energy consumption. More specifically, adaptive schemes and network coordination proposals that can utilize system and channel resources for narrowband and wideband radio networks are discussed. Ongoing research tracks, focusing on network planning with interference reduction, for next generation overlaid wireless networks, are highlighted.

Biography: Dr. Redha M. Radaydeh obtained his Bachelor (5-year program) and Masters Degrees from Jordan University of Science and Technology (JUST), Irbid, Jordan, in 2001 and 2003, respectively. He joined the University of Mississippi, Oxford, MS, USA, in January 2004 as Research Assistant, and obtained his PhD in Electrical Engineering in November 2006. He has been an Assistant Professor of Electrical Engineering at JUST from February 2007 to September 2009. In October 2009, he joined the Electrical Engineering program at King Abdullah University of Science and Technology (KAUST), where he conducts technical research on several areas of wireless communications, participates in writing and editing technical proposals, and supervises research projects of graduate students. His early interests were in digital electronics and digital optical communications, respectively.

He has authored and co-authored more than 30 journal papers, and acts as an editorial reviewer for several international journals and conferences. He has been included in the Editorial Board of European Transactions on Telecommunications (ETT), and has been TPC member for the main international conferences. His research interests are related to the fields of wireless communication theory, digital signal processing for communications, beam-forming and diversity techniques, narrowband and wideband multi-user systems, cooperative networks, decentralized wireless networks, and energy-efficient distributed systems.