

Acme Center for Research in Wireless Communications (ARWiC)



GROUP INTRODUCTION

Acme Center for Research in Wireless Communications (ARWiC) at Capital University of Science and Technology, Islamabad is led by Prof. Dr. Noor Muhammad Khan and consists of thirteen researchers. The research interests of the group include Wireless and Cellular Mobile Communication Systems, Physical Channel Modeling, Fading Channel Characterization, Smart Antennas, MIMO Systems, Adaptive Signal Processing, Multiuser Detection, Energy Efficient Routing and Node Localization in Wireless Sensor Networks. The group has published more than 120 quality research papers in Journals and Conferences of international repute. The group has also maintained collaborative linkages in field of research and development with reputable international research groups.

GROUP HEAD

Prof. Dr. Noor Muhammad Khan

Prof. Dr. Noor Muhammad Khan accomplished his PhD in Electrical Engineering from School of Electrical Engineering and Telecommunications, University of New South Wales (UNSW), Sydney, Australia. His research interests include Smart-Antenna Systems, Wireless-Sensor Networks, Channel Characterization and Estimation, Mobile-to-Mobile Communication Systems and Physical Channel Modeling for Mobile Communications. He held several key positions in WorldCall Communications, National Institute of Science and Technical Education (NISTE) and Pakistan Telecommunication Company Limited (PTCL). He re-



mained on key academic and research positions at UNSW, Australia, Ghulam Ishaq Khan (GIK) Institute of Engineering Sciences and Technology and Mohammad Ali Jinnah University, Islamabad. Dr. Noor has more than hundred Research Publications to his credit in well reputed International Journals and Conferences. He has served as the Chair of Technical Program Committee in the IEEE International Conference on Emerging Technologies (ICET2012 and ICET2017). He has also served as the member of Technical Program Committee in various IEEE conferences. He has supervised more than forty MS and PhD thesis. Dr. Noor has been honored with prestigious "Research Productivity Award" by the Pakistan Council for Science and Technology (PCST) for consecutive years in 2011 and 2012. Currently, he is working as Professor and Head of Electrical Engineering Department at Capital University of Science & Technology, Islamabad.

RESEARCH AREAS

- Wireless Communications & Wireless Sensor Networks
- Cellular Mobile Communication Systems
- Physical Channel Modeling & Fading Channel Characterization
- Smart Antennas
- Adaptive Signal Processing

GROUP MEMBERS

- 1. Mr. Tauqeer Ahmed
- 2. Mr. M. Saud Khan
- 3. Mr. Mirza M. Yasir Masood
- 4. Mr. Khurram Shehzad
- 5. Mr. Laiq Akhtar
- 6. Mr. Rahat Saadia
- 7. Mr. Tahir Iqbal
- 8. Mr. Haris Farooq
- 9. Mr. Waleed Farooq

SELECTED PhD ALUMNI

Dr. Taugeer Ahmed

Thesis Title: Bandpass Sampling Methodology for Uniformly Spaced Multiband Energy-Sparse Spectrum Year: 2019

Dr. Hassan Raza

Thesis Title: Processing-Efficient Distributed Adaptive RLS Filtering for Computationally Constrained Platforms Year: 2019

Dr. Muhammad Saud Khan

Thesis Title: A Low Complexity Signed-Response Based Secure and Energy Efficient Routing Protocol for Wireless Sensor Networks Year: 2018

Dr. Muhammad Yaqoob

Thesis Title: Modeling of MIMO Radio Channels for Mobile-to-Mobile and Umbrella Cell Based Cellular Communication Systems Year: 2017

Dr. Muhammad Riaz

Thesis Title: Modeling and Characterization of Mobile to Mobile Communication Channels Year: 2016

Dr. Ghufran Ahmed

Thesis Title: Adaptive Power Control-based Energy-Efficient Routing (APCEER) in Wireless Sensor Networks Year: 2013

Dr. Syed Junaid Nawaz

Thesis Title: Modeling and Characterization of Cellular Mobile Channels for 3-D Radio Propagation Environments Year: 2012





SELECTED PUBLICATIONS

Journal Publications

- M. Muzzammil, T. Ahmad, N. M. Khan, and W. Lei, "Low cost, faster detection of cognitive radio through filter banks with bandpass sampling," Physical Communication, vol. 33, pp. 1–8, 2019.
- M. Raza, N. Aslam, H. L. Minh, S. Hussain, Y. Cao, and N. M. Khan, "A Critical Analysis of Research Potential, Challenges and Future Directives in Industrial Wireless Sensor Networks," IEEE Communications Surveys & Tutorials (IEEE COMST), vol. 20, no. 1, pp. 39–95, 2018.
- M. M. Y. Masood, A. Jamal, and N. M. Khan, "Characterization of Spatial Reflection Co-efficient for Ground-to-Aircraft and Satellite-to-Aircraft Communication," **Applied Computational Electromagnetics Society Journal (ACES)**, vol. 39, no. 1, pp. 56–68, 2018.
- M. Y. Wani, M. Riaz, and N. M. Khan, "Geometrical Modeling of Scattering Environment for Highways in Umbrella Cell Based MIMO Communication Systems," Wireless Personal Communications, vol. 101, no. 1, pp. 59–74, 2018.
- M. Y. Wani and N. M. Khan, "Characterization of 3D Elliptical Spatial Channel Model for MIMO Mobile-to-Mobile Communication Environment," Wireless Personal Communications (Springer WPC), vol. 96, no. 4, pp. 6325–6344, 2017.
- H. Raza and N. M. Khan, "Low Complexity Linear Channel Estimation for MIMO Communication Systems," Wireless Personal Communications (Springer WPC), vol. 97, no. 4, pp. 5031–5044, 2017.
- N. M. Khan and H. Raza, "Processing-Efficient Distributed Adaptive RLS Filtering for Computationally-Constrained Platforms," Wireless Communications and Mobile Computing (WCMC), vol. 2017, Article ID 1248796, May 2017, 7 pages, 2017.

Conference Proceedings

- T. Ahmad and N. M. Khan, "A Simple and Low Cost Land-Mobile-Radio Design for Interoperability Among Radio Networks in a Public Safety Scenario," International Conference on Communication Technologies (ComTech), pp. 1–6, 2019.
- F. Ijaz, M. Riaz, N. M. Khan, and M. Y. Wani, "Elliptical Channel Model Employing Propagation of Signals in 3D Space," **Proceedings of the IEEE International Conference on Emerging Technologies (IEEE ICET16)**, Islamabad, Pakistan, 2016.
- A. Ahmed, J. N. Syed, N. M. Khan, M. N. Patwary, and M. A. Maguid, "Angular Characteristics of a Unified 3-D Scattering Model for Emerging Cellular Networks," **Proceedings of the IEEE International Conference on Communications** (IEEE ICC15), pp. 2450–2456, London, UK, 2015.