

DR. IRFAN AHMED

Chairman
Department of Physics
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EDUCATION

- **PhD** (Electrical Engineering) **2011**
Michigan Technological University, Houghton MI, USA.
- **M. E.** (Electrical Engineering) **2005**
NED University of Engg. & Tech. Karachi Pakistan
- **B. E.** (Electrical Engineering) **1994**
NED University of Engg. & Tech. Karachi Pakistan

EXPERIENCE

Academic:

- NED University of Engg. & Tech. Karachi Pakistan
Associate Professor **2012 -to date**
Develop Syllabus, Administer Labs, Supervise PhD /Master's Thesis
- NED University of Engg. & Tech. Karachi Pakistan
Assistant Professor **2005-2012**
- NED University of Engg. & Tech. Karachi Pakistan
Lecturer **2001-2005**

Industrial / Administrative:

- NED University of Engg. & Tech. Karachi Pakistan
Chairman Department of Physics 2020 to date
- NED University of Engg. & Tech. Karachi Pakistan
Controller of Examination 2015- 2017
- Black & Veatch International (US based), Karachi
Electrical Engineer **1996-2001**
Startup & Commissioning of Power Plant E & I Equipment
- Zelin (Pvt) Ltd.
Electrical Engineer **1994-1996**
Estimation, Costing, and Bidding of Turnkey Projects

PUBLICATIONS

- See attached List, or <https://orcid.org/0000-0003-3629-5034>

GRANTS

- MOST Endowment Fund
 - PI, Routing Reliability Improvement in IoT-based-MANET, 3.0 Million, 2020
- Higher Education Commission-NRPU
 - CO-PI, Flexible Testbed for device-to-device (D2D) communication in 5G cellular Network- Project Number: 6054, 2018-19
- Funded by National Technology Fund Program-IGNITE
 - Smart Metering Using Power Line Communication 2020
 - Automatic Controlling and Monitoring of Underwater Environment System **2019**
- Funded by National Grassroots ICT Research Initiative of National ICT R&D Fund
 - Design & Fabrication of Wireless System Based Smart Wheelchair **2016**
 - Design & Fabrication of Wearable Antenna for BAN **2015**
 - Design & Fabrication of a Patch Antenna on Non-Conventional substrate **2013**

POSTGRAD SUPERVISION

- Supervising Five PhD students
- Co-supervised One PhD student
- Supervised Eight Master's Thesis

AWARDS

- Dean's Award of Outstanding Scholarship, Michigan Tech USA **2011**
- Doctoral Finishing Fellowship, Michigan Tech USA **2011**
- Faculty Development Fellowship for PhD, NED University Karachi **2007**

COMMUNITY WORK

- Member “National Curriculum Review Committee” of Higher Education Commission Pakistan for the subject of Telecom Engineering, **2014-15**
- Member “National Curriculum Review Committee” of Higher Education Commission Pakistan for the subject of Telecom Systems, **2013-14**
- Member Technical Committee of Pakistan Standard Quality Control Authority for “Telecommunications and Information Exchange between Systems (I.C.T-TC-1)” **2013**
- Reviewer for research work in the following journals
 - IEEE (Antennas and Wireless Propagation Letters, Access)
 - Ad Hoc & Sensor Wireless Networks
 - Progress in Electromagnetic Research (PIER, PIER B,C,M, PIER Letters)

RESEARCH INTERESTS

- Antenna Design, Electromagnetic Compatibility, Wireless Channel Modeling, Wireless Local Positioning System, WSNs, Green Energy / Alternate Energy.

LANGUAGES

- Urdu, English, Sindhi, Punjabi, Arabic

MEMBERSHIPS

- Life Member, Pakistan Engineering Council
- Fellow Pakistan Academy of Engineering

LIST OF PUBLICATIONS BY DR. IRFAN AHMED

Journal Publications: HEC / ISI Master List

#	Description	HEC Category / otherwise
10	Hira Mariam, Irfan Ahmed , Muhammad Imran Aslam, "Coverage probability of uplink millimeter wave cellular network with non-homogeneous interferers' point process" <i>Physical Communication</i> , 16 January 2021, 101274, ISSN 1874-4907	W / JCR
9	Sundus Ali, Muhammad Imran Aslam, Irfan Ahmed et al. , "Analysis of the decoupled uplink downlink technique for varying path loss exponent in multi-tier HetNet." <i>Telecommunication Systems</i> , Springer, Issue 4/2020 Print ISSN: 1018-4864, Electronic ISSN: 1572-9451 https://doi.org/10.1007/s11235-020-00661-1	W / JCR
8	Sundus Ali, Muhammad Imran Aslam, Irfan Ahmed , "Uplink coverage probability and spectral efficiency for downlink uplink decoupled dense heterogeneous cellular network using multi-slope path loss model". <i>Telecommunication Systems</i> , Springer, Issue 4/2019 Print ISSN: 1018-4864 ,Electronic ISSN: 1572-9451,	W / JCR
7	Sundus Ali, Muhammad Imran Aslam, Irfan Ahmed , "Analysis of Downlink Uplink Decoupled Dense Heterogeneous Cellular Network based on User Association using Multi-Slope Path Loss Model," <i>Advances in Electrical and Computer Engineering</i> , vol.19, no.2, pp.45-52, 2019, doi:10.4316/AECE.2019.02006	X / JCR
6	Tahniyat Aslam, Irfan Ahmed , Muhammad I. Aslam, Syed M. Usman Ali, Tahir Malik, "Direction of Arrival Estimation in the presence of Scatterer in noisy environment", <i>Advanced Electromagnetics</i> , Vol. 6, no. 3, pp.33-40, 2017.	Y/ISI
5	Muhammad Sohail Ibrahim, Irfan Ahmed , Muhammad I. Aslam, Muhammad Ghazaal, Muhammad Usman, Kamran Raza and Shujaat Khan, "A Low Cost FPGA based Cryptosystem Design for High Throughput Area Ratio" <i>International Journal of Advanced Computer Science and Applications (IJACSA)</i> , Vol. 8, no. 2, pp-385-393, 2017.	Y/ISI
4	Muhammad Usman, Irfan Ahmed , Muhammad I. Aslam, Shujaat Khan, and S. M. Usman Ali, "SIT: A Lightweight Encryption Algorithm for Secure Internet of Things" <i>International Journal of Advanced Computer Science and Applications (IJACSA)</i> , Vol. 8, no. 1, pp-402-411, 2017.	Y/ISI
3	Irfan Ahmed and Warren F. Perger" Effect of Ground on Antenna Mutual Impedance for DOA Estimation Using Dipole Arrays" <i>Progress in Electromagnetics Research (PIER C)</i> , Vol. 46, page 179-185, 2014	Y/ISI
2	Irfan Ahmed and Warren F. Perger "Direction Finding in the Presence of Near Zone Resonant Size Scatterers", <i>Progress in Electromagnetics Research (PIER B)</i> , Vol. 56, page 219-234, 2013	Y/ISI
1	Irfan Ahmed , Warren F. Perger, and Seyed A. Zekavat, "Effects of Ground Constituent Parameters on Array Mutual Coupling for DOA Estimation," <i>International Journal of Antennas and Propagation</i> , vol. 2011, Article ID 425913, 5 pages, 2011. doi:10.1155/2011/425913	W/JCR

Journal Publications: Peer Reviewed Journals

5	Um e Rabab, Irfan Ahmed, Muhammad Imran Aslam and Muhammad Usman, "FPGA Implementation of Secure Internet of Things (SIT) Algorithm for High Throughput Area Ratio", <i>International Journal of Future Generation Communication and Networking</i> Vol. 11, No. 5 (2018), pp.63-72 http://dx.doi.org/10.14257/ijfgcn.2018.11.5.06 ESCI / ISI Master List
4	Akhtar Saeed, Irfan Ahmed , Muhammad Imran Aslam, and Tahir Malik , " Improving Energy Efficiency of Wireless Sensor Network through Optimum Selection of Cluster Heads ", <i>BUJICT Journal</i> , Volume 10, Issue 1, June 2017, pp. 29-37.
3	Sana Aijaz, Irfan Ahmed , Muhammad I. Aslam, and Syed M. Usman Ali, "Spectrum Sensing in Cognitive Radios - Techniques, Issues and Challenges," <i>International Journal of Information and Communication Technology Trends</i> , Vol. 2, No. 1, pp. 1-4, 2015.
2	Immad Girach, Muhammad I. Aslam, Irfan Ahmed , Syed M. Usman Ali and Muhammad Khalid, "Photonic Band Gap Materials- Theory, Techniques and Application," <i>Bahria University Journal of Information & Communication Technologies</i> , Vol. 8, No. 1, pp. 126-129, 2015.
1	Akhter Saeed, Irfan Ahmed , "Wireless Sensor Networks – A Comprehensive Study ," <i>International Journal of Information and Communication Technology Trends</i> , Vol. 1, 2014.

Conference Publications:

16	T. Abbas, F. Qamar, M. N. Hindia, R. Hassan, Irfan Ahmed and M. I. Aslam, "Performance Analysis of Ad Hoc on-Demand Distance Vector Routing Protocol for MANET," <i>2020 IEEE Student Conference on Research and Development (SCoReD)</i> , Batu Pahat, Johor, Malaysia, 2020, pp. 194-199, doi: 10.1109/SCoReD50371.2020.9250989.
15	Hasan Rafae, Syed Waqar Jamil, Muhammad I. Aslam and Irfan Ahmed , "Internet of Nano Things: Next Step for Future of Nanotechnology," Proceedings of the 4th International Electrical Engineering Conference, Karachi, 25-26 January, 2019.; Karachi; IEP
14	Hasan Rafae, Muhammad I. Aslam, Irfan Ahmed , Furqan Alam, Syed Waqar Jamil, "Awareness of Green Computing among Students of NED University of Engineering and Technology," First International Conference on Carbon Neutral Built Environment (CNBT-I), Karachi, Pakistan, 20-21 December 2018.; Karachi; NED University
13	Hasan Rafae, Muhammad I. Aslam, Irfan Ahmed , "Green Computing: Techniques and Challenges," First International Conference on Carbon Neutral Built Environment (CNBT-I), Karachi, Pakistan, 20-21 December 2018.
12	Tariq Mumtaz, Shahabuddin Muhammad, Nazeeruddin Mohammad, Muhammad Imran Aslam and Irfan Ahmed , "Modeling and Evaluation of Mobility Management in mmWave Cellular Networks", 21st IEEE International Multi Topic Conference, Karachi, Pakistan, 1-2 November 2018. Karachi; Hamdard University.
11	Hira Mariam, Muhammad I. Aslam, Irfan Ahmed , " Device-to-Device Communication in Cellular Networks: A Survey," International Conference on Emerging Trends in Telecommunication and Electronic Engineering, 27 - 28 February 2018, Karachi.
10	Talib Abbas, Faizan Qamar, Irfan Ahmed , Kaharudin Dimiyati, Mohammed B. Majed "Propagation Channel Characterization for 28 and 73GHz Millimeter-Wave 5G Frequency Band" IEEE Scored Putrajaya, Malaysia December 2017
9	Faizan Qamar, Talib Abbas, MHD Nour Hindia, Kaharudin Bin Dimiyati, Kamarul Ariffin Bin Noordin, Irfan Ahmed , "Characterization of MIMO Propagation Channel at 15 GHz for the 5G Spectrum," 2017 IEEE 13th Malaysia International Conference on Communications (MICC), 28-30 Nov. 2017, The Puteri Pacific, Johor Bahru, Malaysia.
8	Zaheer Abbas Balouch, Muhammad I. Aslam, Irfan Ahmed , "Energy Efficient Image Encryption Algorithm" <i>International conference on Innovations in Electrical Engineering and Computational Technologies</i> , Karachi, Pakistan, April 2017.
7	Sundus Ali, Muhammad I. Aslam, Irfan Ahmed , "MIMO channel modeling and capacity analysis using 3-D Spatial Statistical Channel Model for Millimeter Wave Outdoor Communication," <i>14th International Bhurban</i>

	<i>Conf. on Applied Sciences and Technology, Islamabad, Pakistan, January 2017</i>
6	Rana Khan, Tehzeb Jamal, Muhammad I. Aslam, Irfan Ahmed , “Comparative Analysis of Different Patch Antennas”, <i>Proceedings of the 1st International Electrical Engineering Congress, Karachi, 13-14 May, 2016.</i>
5	Usama Fareed Ahmad, Muhammad ShahRukh Khan, Muneeb ur Rahman, S.M. Daniyal Hasan Shah, Irfan Ahmad , and Muhammad I. Aslam, “Wireless System Based Smart Wheelchair ”, <i>Proceedings of the 1st International Electrical Engineering Congress, Karachi, 13-14 May, 2016.</i>
4	Sundus Ali, Muhammed I. Aslam, Irfan Ahmed , “Analysis of Proportional Fairness Utility Function and Interference Mitigation in Heterogeneous Cellular Networks”, <i>31st IEEE P Multi-topic International Symposium, Karachi, 16th-17th March 2016.</i>
3	Radha Mohanlal, Muhammad I. Aslam, Irfan Ahmed , “Radio resource allocation techniques for downlink transmission in LTE-Advanced”, <i>4th International Conference on Electrical, Computer, Mechanical and Mechatronics Engineering (ICE2016), Dubai, Emirates, 4-5 February 2016,</i>
2	Shafaq Mustafa, Muhammad I. Aslam, Irfan Ahmed , “Analysis of Electromagnetic Wave Propagation through Photonic Crystal Fibers,” <i>International Conference on Advanced Materials and Process Engineering, Karachi, 14-15 December, 2015.</i>
1	Syed Asad Ali Shah, Muhammad I. Aslam, Irfan Ahmed , and Syed M. Usman Ali1, “Near-Perfect Metamaterial Absorber for the Visible Spectrum,” <i>International Conference on Advanced Materials and Process Engineering, Karachi, 14-15 December, 2015.</i>