

# Adnan Jamil

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## **EDUCATION**

- PhD, Electrical Engineering, University of Massachusetts, Lowell, March 2016
- MS, Electrical Engineering, Northeastern University, Boston, May 2007
- BS, Electrical Engineering, University of Massachusetts, Lowell, May 2004

## **SUMMARY OF PROFESSIONAL EXPERIENCES**

- MaxTes TECHNOLOGIES LLC (December 2023 – Present): **OWNER AND CEO** – Working on current RF and Antenna technologies for next generation communication systems. MaxTes Technologies LLC is an engineering consulting firm which serves customers with full RF and Antenna solutions (by working with 3<sup>rd</sup> party vendors and design firms) for their applications. MaxTes Technologies serves both consumer and defense markets. [www.maxtestech.com](http://www.maxtestech.com)
- VERANA NETWORKS (April 2022 – March 2023): **PRINCIPAL ENGINEER** - Developing 5G communication systems (Antennas, Switches, Transceivers etc). Tools: Mentor Expedition, Keysight ADS, Ansys HFSS (3D layout, SIwave). Also experienced with Vector Signal Analyzers (VSA), Vector Signal Generators (VSG), Vector Network Analyzers (VNA).
- RAYTHEON (January 2019 – January 2022): **SENIOR ENGINEER** - Secret Clearance level work. Array antennas, Phased Array Antennas, Antenna testing in far-field and near-field test ranges. Simulations with Computational Electromagnetic tools (HFSS, CST).
- Massachusetts Institute of Technology (February 2021 – June 2021): Part-time Postdoctoral studies. Completed course on Nonlinear Optics.
- ALTAIR ENGINEERING, Burlington, MA (July 2016 – June 2018): **APPLICATION ENGINEER** - employed as an application engineer at Altair for one of their products FEKO. FEKO is an electromagnetic simulation tool which uses full wave and asymptotic solvers to solve a wide range of high frequency applications in a computer simulation environment. Experienced solving problems related to antennas, waveguides, RF analysis, matching networks design, antenna placement, cable analysis/EMI EMC applications and antenna arrays etc. Responsibilities included customer support and product development. Also well versed with WinProp, Altair's simulation tool for wireless network design and simulations for urban, rural, indoor, tunnel, motion (car to x) and sensor networks.
- OLD DOMINION UNIVERSITY AT NORFOLK, VA (January 2017 – December 2017) – adjunct instructor. Taught Wireless Engineering and Communications in undergraduate and graduate level.

- UNIVERSITY OF MASSACHUSETTS AT LOWELL, MA (July 2011-May 2016) – graduate student researcher in Electromagnetics, pursuing a PhD degree.
- COMCAST, PA (April 2011 – June 2011) – worked as QA analyst for their broadband network services for cable television.
- UNIVERSITY OF NORTH CAROLINA, Charlotte, NC (September 2010 – December 2010) – Taking Graduate courses in preparation for PhD studies.
- NORTHEASTERN UNIVERSITY, Boston, MA (May 2009 – June 2010) – Graduate researcher.
- MOTOROLA, MA (July 2007 – December 2008) - As a QA Analyst, being part of Motorola’s Broadband Communications group I gained experience in systems testing.
- SAMSUNG, TX (September 2004 – May 2005) – Worked as QA Engineer for mobile devices (firmware and hardware).

#### **GRADUATE AND UNDERGRADUATE RESEARCH SUMMARY**

- Electromagnetics of Metamaterials (PhD): Researched in Metamaterials and electromagnetic scattering from such materials for potential device applications. Work was analytical and computational. Extensive use of MATLAB in research projects.
- Solar Cell Engineering (PhD): Previously researched thin-film solar cells. These solar cells are based on Black Silicon coated with an antireflection material. Simulation was done on CST of the entire structure and fabrication was done in the fabrication lab using spin coating techniques. Also familiar with post-processing techniques e.g., heating structure in the furnace and setting up structure for I-V characteristic measurement.
- Wireless Systems Design (M.S.): Simulation of a hierarchical user mobility model that closely represents the movement behavior of a mobile user, and that when used with appropriate pattern matching and Kalman filtering techniques yields an accurate location prediction algorithm. This provides necessary information for advanced resource reservation and advanced optimal route establishment in wireless ATM networks. Simulation done with MATLAB (M.S.E.E.).
- Automation of Optical Test Equipment (B.S.): Used LabView with GPIB to interface between a computer and optical test equipment (laser and Optical spectrum analyzer) to characterize photonic components such as photodiodes and photodetectors.

#### **SKILLS**

- LabView, FEKO, MATLAB, CST, HFSS, SENTRI, CUBIT, C++, WinProp, OptenniLab, Antenna Magus, Linux.
- Microwave and RF Engineering, Microwave Electronics, Analog circuit and device design, Electromagnetic theory.
- Component level design and testing (both analog and digital): Operational Amplifiers, transistors (BJTs and FETs), diodes, photonic components.

## **LIST OF PUBLICATIONS**

- A. G. Jamil and T. C. K. Rao, "Cloaking Properties of a Metamaterial-Coated Conductor with an Air Gap" presented at the IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting, Chicago, IL, 2012.
- A. G. Jamil and T. C. K. Rao, "Cloaking a Conducting Sphere with Dispersive Metamaterial Coating and an Intervening Air Gap" presented at the IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting, Vancouver, BC, 2015.
- A. G. Jamil and T. C. K. Rao, "Microwave backscattering of a spherical conductor coated by lossless metamaterials with an intervening air gap", Microwave and Optical Technology Letters, vol. 57, no9, pp. 2099–2104, Sept. 2015.
- A. G. Jamil and T. C. K. Rao, " Microwave Scattering from Metamaterial Based Spheres in the Presence of a Conducting Plane: Normal Incidence", Progress In Electromagnetics Research M, vol. 46, pp. 57–68, 2016.
- A. G. Jamil and T. Sikina, "A review of the RF Characteristics of a Cascade Network of an LNA with an attenuator", Journal of Electromagnetic Waves and Applications, vol. 35, issue 8, pp. 1113-1123, 2021.
- A. G. Jamil, M. Vogel, T.C.K. Rao and C.J. Reddy, "SIMULATIONS OF ELECTROMAGNETIC METAMATERIALS IN THE MICROWAVE REGIME USING THE COMPUTATIONAL ELECTROMAGNETICS TOOL ALTAIR Feko®", White Paper, 2022. Link:  
[https://community.altair.com/csm?id=kb\\_article&sysparm\\_article=KB0117539](https://community.altair.com/csm?id=kb_article&sysparm_article=KB0117539)
- A. G. Jamil and T. C. K. Rao, "Scattering characteristics of a cylindrical conductor coated by Dispersive and Lossy Metamaterials with an intervening air gap" presented at the META 2022, Torremolinos - Spain, July 19 – 22, 2022.

## **OTHER**

- Dean's list (Spring 2000), IGERT fellow 2009-2010.
- Charlie Steele Memorial Scholarship award (2013).

REFERENCES available upon request.