Hasan T. Abbas

CONTACT INFORMATION

PhD Electrical Engineering
Texas A& M University
Department of Electrical & Computer Engineering
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OBJECTIVE

Placement in an academic position (i.e., faculty, postdoctoral, or research scientist) that allows for advanced research in electromagnetic wave phenomena and plasmonics (i.e., modeling, analysis, design, and verification) with a particular focus on electronic device miniaturization.

EDUCATION

Texas A& M University, College Station, TX

Ph.D., Electrical and Computer Engineering, August 2012 - August 2017

- Dissertation: *Plasmonic Devices in the Terahertz and Optical Frequency domains*
- Adviser: Professor Robert D. Nevels
- GPA 4.0
- Area of Study: Numerical Electromagnetics and Plasmonics

University of Engineering & Technology, Lahore, Pakistan

B.Sc., Electrical Engineering, July 2009

- With Honors (absolute marks 76.4%)
- Specialization in Telecommunication and Computer Science

RESEARCH INTERESTS

Electromagnetics, Plasmonics, Numerical Electromagnetics, Miniaturized on-chip Antennas, Nanophotonics, Two-dimensional Physics and materials

CURRENT ACADEMIC APPOINTMENTS

Fulbright Scholar, Texas A& M University — August 2012 to August 2017
Department of Electrical & Computer Engineering

- Affiliations:
  - Electromagnetics and Microwave Laboratory
  - Institute of Quantum Science and Engineering

Instructor, Texas A& M University — August 2014 to present

- Courses:
  - Electric and Magnetic Fields
  - Applied Electromagnetic Theory

PREVIOUS ACADEMIC APPOINTMENTS

Lecturer, University of Engineering & Technology, Lahore, Pakistan August 2009 to August 2012

Department of Electrical Engineering & Technology

- Courses:
  - Electromagnetic Theory
  - Antennas and Wave Propagation
  - Applied Electromagnetics
- Laboratories:
  - Microwave and Antennas Laboratory
  - Communication Systems

BOOK CHAPTERS

2015 Robert D. Nevels, Hasan Tahir Abbas, "Optical Nanoantennas", In Chapter in Handbook of Antenna Technologies, Springer Singapore, pp. 1-33, 2015.

JOURNAL PUBLICATIONS

H.T., Abbas, X., Zeng, M., AlAmri, R.D., Nevels, M.S., Zubairy, "Nanoscopy using a semiconductor heterostructure as the sample stage", submitted in Optics Express, 2017.

CONFERENCE PUBLICATIONS

2017 H.T., Abbas, R.D., Nevels, "An Integral Equation Scheme for Plasma based Thin Sheets", In Antennas and Propagation & USNC/URSI National Radio Science Meeting, 2017 IEEE International Symposium on.

2017 H.T., Abbas, R.D., Nevels, K.A., Michalski , "Plasma based Terahertz devices", Wireless & Microwave Circuits & Systems, 2017 IEEE Texas Symposium on.

2016 H.T., Abbas, R.D., Nevels, "Plasma based integrated on-chip antenna", In Antennas and Propagation & USNC/URSI National Radio Science Meeting, 2016 IEEE International Symposium on, pp. 1645-1646, 2016.

2015 J., Shin, H.T., Abbas, R.D., Nevels, "A numerical method for the electromagnetic field time domain propagator equations", In Antennas and Propagation & USNC/URSI National Radio Science Meeting, 2015 IEEE International Symposium on, pp. 1480-1481, 2015.

2015 J., Shin, H.T., Abbas, R.D., Nevels, "A numerical method for the electromagnetic field time domain propagator equations", In Antennas and Propagation & USNC/URSI National Radio Science Meeting, 2015 IEEE International Symposium on, pp. 1480-1481, 2015.

2015 H.T., Abbas, J., Shin, R.D., Nevels, "Numerical techniques for evaluating electromagnetic field propagators", In Computational Electromagnetics (ICCEM), 2015 IEEE International Conference on, pp. 22-23, 2015.

2014 R.D., Nevels, K.A., Michalski, H.T., Abbas, "Plasmonic and surface wave propagation in boundary layers in the microwave, THz, and optical regimes", In Antenna Measurements & Applications (CAMA), 2014 IEEE Conference on, pp. 1-3, 2014.

Conference Talks

[1] Complex Plane Interpretation of Nano-Aperture Excited Plasmon Waves. In: *University of Electronic Science and Technology China (UESTC) National Summer School*, Chengdu, China, July, 2015.

[2] A decomposition and interpretation of plasma and plasmonic waves. In: *Institute for Quantum Science and Engineering Workshop*, College Station, TX, January 13–14, 2015.

[3] Twisted Waves: Concept and Limitations. In: *2013 IEEE AP-S/USNC-URSI Symposium*, Orlando, FL, July 7–13, 2013.

Teaching Experience

Texas A&M University, College Station, TX

Substitute Lecturer **January 2016**

- ECEN 322: Electric and Magnetic Fields
  - Undergraduate course
  - Main instructor: Robert D. Nevels

Substitute Lecturer **October 2015**

- ECEN 445: Applied Electromagnetic Theory
  - Undergraduate course
  - Main instructor: Robert D. Nevels

Substitute Lecturer **January 2015**

- ECEN 351: Applied Electromagnetics
  - Undergraduate course
  - Main instructor: Robert D. Nevels

University of Engineering & Technology, KSK Campus, Pakistan

Lecturer **August 2009 to August 2012**

- Instructor for EE 480: Antennas and Propagation
- Instructor for EE 380: Electromagnetic Theory
- Instructor for EE 381: Applied Electromagnetic Theory

Lab In-charge **December 2009 to August 2012**

- Set up Microwave and Antennas Laboratory
- Authored Antennas lab manual

- Lab Instructor for EE 360: Communication Systems
  - Spring 2012

Honors

Fulbright Foreign Student

- Pursue Doctoral Degree at Texas A&M University, 2012–2017

Best Young Faculty

- Department of Electrical Engineering & Technology, UET Lahore, Pakistan, 2010-2011

Professional Service

Professional Memberships

- IEEE Antennas & Propagation Society
- IEEE Microwave Theory & Techniques Society
- American Physical Society

Referee Service

- *IEEE Antennas and Wireless Propagation Letters*
- *IEEE Transactions on Antennas and Propagation*
- *American Journal of Physics*

Software and Hardware Skills

Computer Programming:

- C, C++

Numerical Analysis:

- MATLAB, Python

Desktop Editing and Productivity Software:

- Atom, Git
- TEX (LATEX, BIBTEX, PSTricks),
- Microsoft Office, Google Docs
- TikZ, InkScape

Operating Systems:

- Microsoft Windows family, Linux (Ubuntu)

Expertise

Mathematics:

- PDE, Stability Analysis, Linear Algebra, Fourier Transforms

Embedded and Real-time Systems:

- Software and hardware development with several MCU and DSP platforms (e.g., Atmel ATmega MCU's, Microchip PIC MCU's, Arduino and others)

Student Mentoring

Usman Samad

Undergraduate student in Electrical and Computer Engineering, Texas A&M University. Modeling and Implementation of a Home Automation System 2015.

References Available to Contact

Furnished upon request.