

# Mohammad Mahdi Tajdini

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## Education

**Northeastern University, Boston, MA**  
**Ph.D. Candidate in Electrical Engineering** **September 2009 – present**

Research: Semi-Analytic Modeling of Rough Surface Clutter

Advisor: Professor Carey M. Rappaport

GPA: 4.00

Selected Courses: Antennas and Radiation, Computational Methods in Electromagnetics, Modern Imaging

**Sharif University of Technology, Tehran, Iran**  
**Master of Science in Electrical Engineering** **September 2006 –September 2008**

Research: The Green's Function Analysis of Planar Layered Structures

Advisor: Professor Amir A. Shishegar

GPA: 3.48

Selected Courses: Optical Fibers, Laser and Photonic Crystals, Fourier Optics, Microwave Solid State Devices

**University of Tehran, Tehran, Iran**  
**Bachelor of Science in Electrical Engineering** **September 2002 – July 2006**

Research: Designing a Wideband Planar Log-Periodic Antenna

Advisor: Professor Mahmoud Shahabadi

GPA: 3.53

Selected Courses: Electronics (Three Courses), An Introduction to Bioengineering, Communication Circuits, Digital Transmission Systems, Telecommunications, Digital Signal Processing, Electrical Circuits (Two Courses), Microwave Active Circuits, Fields and Waves, Electrical Measurement, Computer Networks, Engineering Probability and Statistics

## Honors and Awards

- Northeastern University honored in Electromagnetics, 1st rank with full mark GPA, 2011.
- Awarded research/teaching assistantship, Electrical and Computer Engineering Department, Northeastern University, 2009-present.

- Awarded to study in M.Sc. program in Field Communications Major without university entrance exam, University of Tehran, 2006.
- Ranked 100 among nearly 450,000 students participating in the National University Entrance Exam (Math and Physics division), Iran, 2002.

## Publications

M. M. Tajdini, B. Gonzalez-Valdes, J. A. Martinez-Lorenzo, A. W. Morgenthaler, and C. M. Rappaport, "An efficient method for simulation of GPR scattering from a randomly rough surface," in preparation.

M. M. Tajdini, B. Gonzalez-Valdes, J. A. Martinez-Lorenzo, A. W. Morgenthaler, and C. M. Rappaport, "Efficient 3D forward modeling of GPR scattering from rough ground," presented in *2015 IEEE AP-S/USNC-URSI Symp.*, Vancouver, Canada, Jul. 2015.

Y. Fuse, A. Caganda, M. M. Tajdini, B. Gonzalez-Valdes, J. A. Martinez-Lorenzo, and C. M. Rappaport, "Model-based clutter suppression method for FLGPR," presented in *2015 RISE Exhibition*, Boston, MA, Apr. 2015.

M. M. Tajdini, C. M. Rappaport, B. Gonzalez-Valdes, and J. A. Martinez-Lorenzo, "An innovative algorithm for ground penetrating radar (GPR) detection of concealed subsurface objects," presented in *2014 RISE Exhibition*, Boston, MA, Apr. 2014.

M. M. Tajdini and C. M. Rappaport, "Analytic analysis of ground penetrating radar wave scattering of reinforced concrete bridge decks," in *2013 IEEE Int. Geosci. Remote Sens. Symp.*, Melbourne, Australia, pp. 21-26, Jul. 2013.

M. M. Tajdini and C. M. Rappaport, "An efficient forward model of ground penetrating radar for sensing deteriorated bridge decks," presented in *2013 IEEE AP-S/USNC-URSI Symp.*, Orlando, FL, pp. 1022-23, 2013.

M. M. Tajdini and H. Mosallaei, "Characterization of large array of plasmonic nanoparticles on layered substrate: dipole mode analysis integrated with complex image method," *Opt. Express*, vol. 19, no. S2, A173-A193, Mar. 2011.

M. M. Tajdini, S. Ghadarghad, and H. Mosallaei, "Plasmonic nanoparticles manipulating solar systems: a dipole mode-complex image analysis," in *Photonic Metamaterials and Plasmonics*, Tucson, AZ, Jun. 2010.

M. M. Tajdini and A. A. Shishegar, "A novel analysis of microstrip structures using the Gaussian Green's function method," *IEEE Trans. Antennas Propag.*, vol. 58, no. 1, pp. 88-94, Jan. 2010.

M. M. Tajdini and A. A. Shishegar, "A closed form spatial Green's function for the microstrip structure using the Gaussian expansion," in *Proc. 2008 Asia-Pacific Microw. Conf.*, Macau, China, 2008, pp. 1-4.

M. M. Tajdini and A. A. Shishegar, "The Gaussian expansion of the Green's function of an electric current in a parallel-plate waveguide," in *Proc. 2008 IEEE Int. RF. Microw. Conf.*, Kuala Lumpur, Malaysia, 2008, pp. 46-48.

M. M. Tajdini and M. Shahabadi, "Wideband planar log-periodic antenna," in *Proc. IEEE Int. Workshop Antenna Technol.*, Cambridge, U.K., 2007, pp. 331-334.

## **Professional Affiliations**

Institute of Electrical and Electronics Engineers (IEEE)  
Eta Kappa Nu  
IEEE Antennas and Propagation Society  
Golden Key International Honor Society

## **Skills/Interests**

**Computer Skills:** MATLAB, C++, Agilent ADS, Microsoft Office (Word, PowerPoint, Excel)

**Activities:** Admin of a Book Reading Group, Boston, MA; member of International Karate Organization

**Interests:** Quantum mechanics, philosophy, mathematics, psychoanalysis; basketball, football, motorcycling