

Sajjad AbdollahRamezani

CONTACT INFORMATION

Electrical Engineering Department
Sharif University of Technology
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Integrated Photonics Lab (IPL)
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RESEARCH INTERESTS

- Plasmonics and Graphene Plasmonics
- Metamaterials and Metasurfaces
- Nanoantennas and Nanoresonators
- Optical Modulators and Inteconnects
- Silicon Photonics
- Circuit Modeling of Photonic Structures

EDUCATION

Sharif University of Technology, Tehran, Iran Sep. 2013 - July. 2015

M.Sc. with focus on Communications Microwave and Optics; **GPA:17.56/20.00**

- Thesis: Design and Simulation of Computational Operators with Graphene Metastructures
Supervisor: Prof. Amin Khavasi
Co-supervisor: Prof. Zahra Kavehvas

Isfahan University of Technology, Isfahan, Iran Sep. 2009 - Sep. 2013

B.Sc. with focus on Telecommunications; **GPA:18.62/20.00**

- Thesis: Design, Simulation and Fabrication of High Power Dummy-load
Supervisor: Prof. Reza Safian
- Thesis: Simulation and Implementation of Spectrum Sensors and Detectors on Universal Software Radio Peripheral (USRP) Boards
Supervisor: Prof. Javad Omid

HONORS & AWARDS

- Ranked 2nd among 17 students in class of 2013 Communications Microwave and Optics 2015
- Accepted as a talented student for graduate studies in Sharif University of Technology without participating in the national university entrance exam 2013
- Ranked 5th among 134 students in class of 2009 Electrical Engineering entrants 2013
- Ranked 2nd among 44 students of Telecommunications 2013
- Member of Iranian National Elite Foundation 2010

PUBLICATIONS

Journal Papers and Preprints

- MA. Panahi, **S. AbdollahRamezani**, G. Ebrahimzadeh Ardakani, R. Safian, “An Efficient High Power RF Dummy-Load”, published in IEEE Microwave and Wireless Components Letters, May 2015 (link)
- **S. AbdollahRamezani**, K. Arik, A. Khavasi, Z. Kavehvas, “Analog Computing Using Graphene-based Metalines”, published in Optics Letters, October 2015 (link)
- **S. AbdollahRamezani**, K. Arik, S. Farajollahi, A. Khavasi, Z. Kavehvas, “Beam Manipulating by Gate-tunable Graphene-based Metasurfaces”, published in Optics Letters, October 2015 (link)
- S. Farajollahi, **S. AbdollahRamezani**, K. Arik, B. Rejaei, A. Khavasi, “Circuit Model for Plasmons on Graphene with One Dimensional Conductivity Profile”, published in IEEE Photonics Technology Letters, October 2015 (link)

- K. Arik, **S. AbdollahRamezani**, S. Farajollahi, A. Khavasi, B. Rejaei, “Design of Mid-infrared Ultra-wideband Metallic Absorber Based on Circuit Theory”, submitted to IEEE Photonics Technology Letters (under review), August 2015
- K. Arik, **S. AbdollahRamezani**, S. Farajollahi, A. Khavasi, B. Rejaei, “Polarization-insensitive and Broadband Terahertz Absorber Using Graphene Patches Based on Circuit Theory”, submitted to Plasmonics (under review), November 2015
- S. Farajollah, **S. AbdollahRamezani**, K. Arik, A. Khavasi, B. Rejaei, “Graphene Plasmons Scattering at Oblique Incidence on Discontinuities”, will be submitted soon to Optics Letters

Conference Papers

- **S. AbdollahRamezani**, K. Arik, S. Farajollahi, A. Khavasi, Z. Kavehvas, “Beam Manipulating by Graphene-based Metasurface Transmit-array”, 23rd Iranian Conference on Electrical Engineering (ICEE)(indexed by IEEE), May 2015
- K. Arik, **S. AbdollahRamezani**, A. Khavasi, “Polarization-independent Ultra-broadband Electromagnetic Wave Absorber Using Graphene Disks Based on Circuit Theory”, submitted in Proceedings of the 6th International Conference on Nanostructures (ICNS), October 2015
- F. Zanganeh-nejad, **S. AbdollahRamezani**, K. Arik, A. Khavasi, “Beam Focusing Using Two-dimensional Plasmonic Meta-reflect-array”, submitted to the 24th Iranian Conference on Electrical Engineering (ICEE), November 2015

PROFESSIONAL EXPERIENCE

Optical Networks Research Lab (ONRL)

Nov. 2015 - Present

Research Assistant, Sharif University of Technology

- Metastructure Holograms
- Holographic CDMA
- Femtosecond or Ultra-short Light Pulse CDMA

Integrated Photonics Lab (IPL)

Feb. 2014 - Present

Research Assistant, Sharif University of Technology

- Light-matter Interaction
- Controlling EM Waves with Metamaterials and Metasurfaces
- EM Behavior of Graphene-based Structures
- Plasmonic Devices
- Integrated Nanophotonics
- Silicon Photonics

Microwave and Antenna Lab (MAL)

Nov. 2012 - Sep. 2013

Research Assistant, Isfahan University of Technology

- Transmission Line Modeling
- High Power Absorbers
- Microwave Circuit Components
- Microwave Measurement

Software Defined Radio Lab (SDRL)

Jul. 2012 - Sep. 2013

Research Assistant, Isfahan University of Technology

- Cognitive Radio
- Signal Detection Methods (Energy, Matched Filter, Cooperative)
- Spectrum Sensing and Analyzing
- Mod/Demod Techniques in Radio Applications

TEACHING EXPERIENCES

- Teaching Assistant for “Fields and Waves”, responsible for designing course exercises, Prof. Khavasi, Sharif University of Technology Spring 2015
- Teaching Assistant for “Fields and Waves”, responsible for designing course exercises, Prof. Ahmadi-Boroujeni, Sharif University of Technology Spring 2015
- Laboratory Assistant for “Digital Communications”, Prof. Omid, Isfahan University of Technology Fall 2012

SELECTED COURSES

Graduate Courses

- Advanced EM Theory 17.3/20.0
- Optical Fibers 18.0/20.0
- Computational Electromagnetism 17.2/20.0
- Microwave Solid State Devices .. 16.8/20.0
- Metamaterials and Plasmonics .. 18.7/20.0
- EE seminar 19.0/20.0
- Terahertz Technology audited
- Integrated Photonics audited

Undergraduate Courses

- Electromagnetism 19.1/20.0
- EM fields and waves 20.0/20.0
- Engineering Mathematics 20.0/20.0
- Communication Circuits 18.0/20.0
- Communication Systems 17.9/20.0
- Fundamental of Electronics 19.8/20.0
- Signals and Systems 19.1/20.0
- Optical Communications 19.6/20.0
- Microwave Engineering 17.0/20.0
- Engineering Probability 20.0/20.0
- Antenna Theory and Design 18.0/20.0
- Digital Communications 19.2/20.0

Certifications

- Phot1x Silicon Photonics Design, Fabrication and Data Analysis edX.org

SELECTED PROJECTS AND TERM PAPERS

Sharif University of Technology

- Design and simulation of a low noise, broadband and high gain amplifier (Microwave Active Circuits, AWR)
- Design and simulation of computational metamaterials (Optical Fiber, COMSOL Multiphysics)
- Design and simulation of various plasmonic lenses (EE Seminar, COMSOL Multiphysics)
- Modeling graphene with the FDTD method (Computational Electromagnetism, MATLAB)
- Design and simulation of plasmonic meta-transmit-array (Metamaterials and Plasmonics, Ansoft's HFSS)
- Design and simulation of Mach-Zehnder interferometer (edX Course, Lumerical)

Isfahan University of Technology

- Developing an optimized OFDM transceiver considering channel effects (path loss, shadowing, ...) (Wireless Communications, MATLAB)
- Design, simulation and optimization of fractal antennas (Antenna Theory and Design, Ansoft's HFSS)
- Design and simulation of a low noise amplifier (Communication Circuits, Agilent's ADS)
- Design and simulation of a digital timer (Digital Design, Proteus)

TECHNICAL SKILLS

Computer Skills

- **Numerical Simulations:** COMSOL Multiphysics, CST Design Studio, Ansoft's HFSS, Lumerical, Agilent's ADS, AWR, SPICE, GNURadio, Proteus
- **Programming:** MATLAB, C, \LaTeX
- **Computer and OS:** Microsoft Windows, Linux (Ubuntu), Microsoft Office

Languages

- **English:** Professional working proficiency
- **Persian:** Native

REFERENCES AVAILABLE TO CONTACT

- **Dr. Jawad A. Salehi (E-mail: jasalehi@sharif.edu)**
Professor, IEEE Fellow, Electrical Engineering, Sharif University of Technology (PhD: USC)
- **Dr. Khashayar Mehrany (E-mail: mehrany@sharif.edu)**
Associate Professor, Electrical Engineering, Sharif University of Technology (PhD: Sharif)
- **Dr. Javad Omid (E-mail: omidi@cc.iut.ac.ir)**
Associate Professor, Electrical Engineering, Isfahan University of Technology (PhD: Toronto)
- **Dr. Zahra Kavehvash (E-mail: kavehvash@sharif.edu)**
Assistant Professor, Electrical Engineering, Sharif University of Technology (PhD: Sharif)
- **Dr. Reza Safian (E-mail: rsafian@cc.iut.ac.ir)**
Assistant Professor, Electrical Engineering, Isfahan University of Technology (PhD: Toronto)
- **Dr. Amin Khavasi (E-mail: khavasi@sharif.edu)**
Assistant Professor, Electrical Engineering, Sharif University of Technology (PhD: Sharif)