






OMID ABED

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OBJECTIVE

A highly motivated engineer, skilled in electromagnetic/photonic device designs and familiar to artificial intelligence; with 2 years' experience in cutting-edge research.



EDUCATION

MSc in Electrical Engineering – Field and Waves | University of Tehran 17.00 / 20 (thesis excluded)
2017 – 2020

Thesis: Realization of Optical Beam Steering for Integrated Lidars (more detail [here](#))

Defended on 15 Sep 2020 with "Excellent" grade.

Advisor: Dr. Leila Yousefi

BSc in Electrical Engineering - Telecommunications | Azad University (with honors) 18.08 / 20
2012 – 2016

Final Project: Study of OFDM systems



EXPERIENCE

Research Assistant | Nanophotonics Research Group – University of Tehran

2018 – 2020 (<http://www.nanophotonics.ir>)

- ✓ Designed a novel tunable beam steering device using phase change materials in the near-IR range.
- ✓ Designed a novel tunable 2-dimensional beam steering device using transparent conducting oxides in near-IR range.
- ✓ Achieved a solid background in machine learning (especially deep learning) to use it in further researches e.g., inverse design, optical neural networks.
- ✓ Performed numerous numerical Multiphysics analysis on nanophotonic structures (electromagnetic, AC/DC, and semiconductor analysis).
- ✓ Collaborated with other students in the lab or research meetings.
- ✓ Redesigned and updated group website.

Chief Teaching Assistant | University of Tehran (Engineering Electromagnetics) 2019- 2020

- ✓ Chief teaching assistant in engineering electromagnetics course for undergraduate students.
- ✓ Designed homework problems.

Teaching Assistant | University of Tehran (Circuit laboratory) 2017-2018

- ✓ Teaching assistant in circuit laboratory course for undergraduate students.

Microcontroller programming Intern | Nira System. 2016

- ✓ Learning fundamentals of microcontrollers and helping senior engineers for programming AVR Microcontrollers.



PUBLICATIONS

Submitted Manuscripts

1. Abed, O., Yousefi, L. "Voltage-Contrlled Tunable Metasurface using Phase Change Materials and Transparent Graphene Heaters". Submitted in Optics Express, major revisions requested. (more detail in [here](#))
2. Abed, O., Yousefi, L. "Free Space Beam Shaping Using phase-change Reconfigurable metasurfaces". Accepted in 3rd West Asian Symposium on Optical and Millimeter-wave Wireless Communications. (more detail in [here](#))

Manuscripts in preparation

3. Abed, O., Yousefi, L. "Double-Axis Optical Beam Steering Enabled by Voltage Controlled Tunable Metasurface". (more detail in [here](#))



SKILLS

- COMSOL MULTIPHYSICS
 - ✓ High frequency simulations
 - ✓ AC/DC simulations
 - ✓ Semiconductors Analysis
 - ✓ Heat Transfer Simulations
- PYTHON
 - ✓ Numpy
 - ✓ Pandas
 - ✓ Sklearn
 - ✓ Tensorflow
- MATLAB
 - ✓ 5 years' experience in scientific programming
- OTHER
 - ✓ Lumerical FDTD
 - ✓ CST studio suite
 - ✓ Microsoft Office
 - ✓ Adobe illustrator



HONORS

- Achieved rank 25 in national university entrance exam (Konkur) for MSc in electrical engineering, among more than 30,000 competitors (in top 0.1%).
- Former member of Iran rowing national team. Winner of a bronze and a silver medal in Asian Junior Championships.



CERTIFICATIONS

Silicon Photonics Design, Fabrication and Data Analysis

- ✓ Conducted by Sharif University of Technology ([certificate](#))

Deep learning Specialization

- ✓ Conducted by Coursera ([certificate](#))

Machine Learning

- ✓ Authorized by Stanford University – Conducted by Coursera ([certificate](#))



LANGUAGES

English: Fluent

Persian: Native