Mobina Abbaspour

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PERSONAL DETAILS

Place of Birth: Abadan, Iran
Birth Date: June 22, 1999
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EDUCATION

Ph.D.

PhD Student at Sharif University of Technology, Tehran, Iran, 2024
Nano Electronics

M.Sc.

Kashan University, Kashan, Iran, 2021-2023.
Electrical Engineering, Electronics
Thesis Topic: Design and simulation of optical modulator using phase change materials on SiC platform
Supervisor: Dr. Mahmoud Nikoufard

B.Sc.

Ayatollah Borujerdi University, Borujerd, Iran, 2017-2021.
Electrical Engineering, Electronics
final project topic: Design and manufacture of calculators engineer
Supervisor: Dr. Alireza Khoshsaadat

Research Interests and Studies

- Optoelectronics
- Plasmonics
- Nanophotonics
- Phase change materials

- Photonic Crystals
- Optical Physics
- Active Plasmonics
- Waveguides
- Optics and Photonics
- Metamaterials
- Integrated Optics
- Silicon Photonics

Publications

Journal Papers

1. M. Abbaspour, M. Nikoufard, and M. A. Mahdian, "Optical modulator based on SiC structure using VO_2 phase change material at 2.1 um wavelength," Journal of Materials Science: Materials in Electronics, vol. 35, no. 2, p. 124, 2024/01/12 2024, doi: 10.1007/s10854-024-11925-w.

2. M. Abbaspour, M. Nikoufard, and A. M. Mohammad, "Electro-Thermo-Optical Simulations of Phase-Change GST-SiC Plasmonic Optical Modulator for Telecom Applications," Advanced Theory and Simulations, p. 2400546, doi: 10.1002/adts.202400546.

Conference Papers

1. M. Abbaspour and M. Nikoufard "Optical modulator based on SiC structure using VO_2 phase change material at 2.1 um wavelength" Presented at the 3rd International Conference on Research in Nanoscience and Technology, 2023.

2. M. Abbaspour and M. Nikoufard "Optical switches based on SiC structure using VO_2 phase change material at 1.55 um wavelength" Presented at the 39th Iran Physics Conference, 2023.

3. M. Abbaspour and M. Nikoufard "Electrothermal simulation of optical modulator based on SiCOI structure using GST phase change material" Presented at the 40th Iran Physics Conference, 2024.

TEACHING EXPERIENCE

Teaching Assistsnt (TA) for "Electronics 1, electrical circuits 2 and engineering mathematics"

Azad Abadan University, Iran, 2019

WORK EXPERIENCE

Designing and building a laboratory sample of a positioning system independent of GPS using the DWM1000 module

kashan, Iran, 2022

Supervisor: Dr. Mahmoud Nikoufard

PROJECTS

Lumerical

- Graphene modulator simulation.
- Simulation of photonic crystals in one-dimensional and two-dimensional configurations, and calculation of band structures and bandgaps.
- Ring resonator simulation.
- Coupler grating simulation.
- Electrical and thermal simulation of perovskite solar cells.
- Mach-Zehnder interferometer simulation.

Comsol

- Simulation of waveguide, filter, and photonic crystal multiplexer.
- Simulation of wave propagation in the human head and brain.
- Simulation of optical fibers (conventional fibers and photonic crystals).
- Simulation of resonators and optical splitters.
- Simulation of plasmonic filters.
- Simulation of optical modulators.
- Simulation of solar cells.
- Simulation of graphene absorbers and metamaterials.
- Simulation of photoacoustic.
- Simulation of piezoelectric.
- Simulation of detectors with biosensors.
- Simulation of skin redness treatment using laser radiation.
- Simulation of coil winding in MRI imaging devices.
- Plasma simulation.

Skills

Technical Skills:

- Mastering Lumerical Software including Mode Solution, FDTD, Device, and Interconnect
- Mastery of different physics including wave optics, beam optics, AC/DC, fluids
- Experience working with MATLAB software
- Mastery of VHDL coding
- experience with Microcontrollers

Languages:

Persian (Mother Tongue)

English (Foreign Language): Intermediate

Software:

- Lumerical
- Comsol
- Altium Designer
- Matlab
- Quartus
- Hspice
- CodeVisionAVR
- Proteus
- Microsoft Office
- LATEX

NOTABLE COURSES

M.Sc. Courses

- Theory and technology of manufacturing semiconductor devices 1: 20/20
- Optical integrated circuits: 19/20