MOHAMMADAMIN MAHDIAN

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🎓 EDUCATION

M.Sc. **Electrical Engineering- Electronics**

Kashan University, Isfahan, Iran

(Ranked 501–600 th in world university ranking of 2020)

GPA: 18.77/20 (4/4)

Thesis Title: Changing the Layer Stack of InP based Hybrid Plasmonic Waveguide with the purpose of Propagation Length Increment.

Supervisor: Dr. Mahmoud Nikoufard

Defended Master thesis with Excellent grade (20/20)

Sept.2016 – May.2018

B.Sc. **Electrical Engineering- Control Engineering**

Vali-e-Asr University of Rafsanjan, Kerman, Iran

GPA: 15.58/20 (3/4)

Thesis Title: Design and Simulation of a PID control system for a SEPIC Converter Using Matlab.

Supervisor: Dr. Meisam Yahyazadeh

Sept.2012 – Jun.2016

≡ AWARDS & HONORS

- **Ranked 1st GPA** among the graduating class of 2018 in the master's program at Kashan University.
- **Ranked 3rd GPA** among the graduating class of 2016 in the undergraduate program of Vali-e-Asr University of Rafsanjan.
- Received national graduate and undergraduate full scholarship (tuition waiver).
- Ranked within the top 5% among more than 40,000 participants in the Iranian University entrance exam for the Master's degree in electrical engineering.
- Ranked within the top 5% among more than 300,000 participants in the Iranian University entrance exam for the Bachelor's degree in electrical engineering.

RESEARCH INTERESTS

- Integrated Photonics
- Hybrid Plasmonics and Plasmonic devices
- Terahertz devices for communications applications
- Deep-learning-based inverse design of Terahertz devices
- metasurface and metamaterial
- Photonic Crystals

PUBLICATIONS

- **M. A. Mahdian**, M. Nikoufard, and F. Soleimannezhad. Effect of etching depth on the performance of InP-based hybrid plasmonic waveguides. International Journal of Electronics and Communications 2020. https://doi.org/10.1016/j.aeue.2020.153403
- F. Soleimannezhad, M. Nikoufard, and **M. A. Mahdian**. Low-loss indium phosphide-based hybrid plasmonic waveguide. Microwave and Optical Technology Letters 2020. https://doi.org/10.1002/mop.32488
- A novel structure based on ridged gaped waveguides for terahertz applications. In preparation for the IEEE Journal of Lightwave Technology.
- **M. A. Mahdian**, M. Nikoufard, and F. Soleimannezhad. Effect of Etch Depth on Design of InP Based Multi-Mode Interferometer . Annual Physics Conference of Iran. Aug. 2017. Qazvin, Iran.
- F. Soleimannezhad, **M. A. Mahdian**, and M. Nikoufard. Effective Mode Area and Propagation Length of Deeply-etched InP-Based. Annual Physics Conference of Iran. Aug. 2017. Qazvin, Iran.
- F. Soleimannezhad, **M. A. Mahdian**, and M. Nikoufard. Investigation of Effective Parameters on Coupling Length in Deeply Etched Directional Hybrid Plasmonic Coupler Based on InP. Annual Physics Conference of Iran. Aug. 2019. Tabriz, Iran.

ACADEMIC PROJECTS

- M. A. Mahdian, *"Design and simulation of an 8-bit full-adder alongside with layout design",* VLSI Circuit Design, Dr. Hossein Karimiyan, Kashan University, Spring 2017.
- M. A. Mahdian, *"Design and Simulation of a high gain operational amplifier based on Gain Boosting technique",* Linear integrated Circuits (CMOS), Dr. Farzan Rezaei, Kashan University, Fall 2017.
- M. A. Mahdian, *"Principles and Design of Passive Photonic Integrated Circuits based on InP technology",* Optoelectronics (1), Dr. Mahmoud Nikoufard, Kashan University, Fall 2017.
- M. A. Mahdian, *"Investigation of Waveguide based Passive Photonic Integrated Circuits operation through FDTD simulation",* Photonic Integrated Circuit (PIC), Dr. Mahmoud Nikoufard, Kashan University, Spring 2017.
- M. A. Mahdian, "*Review, Comparison and Simulation of HPW devices in prior recent literatures through FEM Simulations ",* Photonic Integrated Circuit (PIC), Dr. Mahmoud Nikoufard, Kashan University, Spring 2017.

Experience

- Teaching Experience
  - Teaching assistant of Electronics II in Vali-e-Asr university of Rafsanjan for two semesters of 2015-2016 | Troubleshooted the students' problems in the Electronics II course.
  - Taught hardware design for freshmen in Vali-e-Asr university of Rafsanjan.
  - Online volunteer project | Teaching Electronics hardware design for teenagers.
- Work experience
  - Hardware designer at Vali-e-Asr university of Rafsanjan Robotic team| Designed Power supply and the main microcontroller PCB of a Rescue Robot as a part of the team.
  - RoboCup Iran open April 2015 | participated as an electronic engineer with Vali-e-Asr university of Rafsanjan Robotic team.
  - Internship at SATHA Co. | Became familiar with MV / LV electrical panels.
  - Freelance hardware engineer | Designed and assembled different hardware projects as a freelancer.

CERTIFICATES

- AVR, Certified by Iran Technical & Vocational Training Organization. (272 Hours, Standard code: 0 -23/93/1/1)
- PLC, Certified by Iran Technical & Vocational Training Organization. (272 Hours, Standard code: 0-84/55/2/4)
- ICDL, Certified by Iran Technical & Vocational Training Organization.
- Photonic Integrated Circuit design with Lumerical software, Certified by the Nanotechnology Promoting committee, Pars Allameh Asia.

SKILLS

Programming Languages	
	• C
	• C++
	• Python
	• MATLAB

Web Languages	
	• HTML
	• CSS
	• JavaScript
	• JQuery

Applications	
• COMSOL Multiphysics®	• Keil µVision®
• Lumerical	• CodeVisionAVR
• CST Studio Suite®	• Arduino Software (IDE)
• Synopsys HSPICE®	• Proteus Design Suite
• Tanner EDA	• Adobe Photoshop®
• OriginPro (by OriginLab)	• Adobe Audition®
• Altium Designer	• Adobe Illustrator®
• Blender	• CorelDRAW Graphics Suite®

SELECTED COURSES AND GRADES

- Theory and Technology of Manufacturing Semiconductor Devices (19/20)
- Photonic Integrated Circuit (PIC) (18.5/20)
- Optoelectronics (1) (19/20)
- Semiconductor Devices (19.5/20)
- VLSI Circuits Design (19/20)

SELECTED PROJECTS

- Implementation of isolated power supply for a Rescue Robot.
- Design and Implementation of a microcontroller-based system for Indore IoT devices.
- Design and Implementation of an Ultrasonic Insect Repellent System with adjustable output frequency.
- Design and Implementation of an Educational Development board based on STM32 microcontrollers.

LANGUAGE SKILLS

- Persian (Native)
- Arabic (Familiar)
- English (Fluent)

-TOEFL iBT: 104 (R 28, L 29, S 23, W 24).

HOBBIES AND VOLUNTEERING

Sports	• Swimming • Basketball
Personal Interests	• Graphic Design • Web Design • Podcast Production • Educational Content Creation • Playing Piano
Volunteering	• Monthly Donation to indigent families • Member of HazratRoghaye charity

REFERENCES

- Dr. Mahmoud Nikoufard: mnik@kashanu.ac.ir
- Dr. Farzan Rezaie: f.rezaei@kashanu.ac.ir
- Dr. Daryoosh Dideban: dideban@kashanu.ac.ir