



Personal Info

Name

Fatemeh Shojaei

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ResearchGate

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EDUCATION

Since Dec. 2022 ● **PhD in Micro- and Nano- Electronics**

University of Pavia, Pavia, Italy

Research Activity: Analyzing Neutron-Irradiation Effects on Dual and single layer CMOS Single Photon Avalanche Diode (SPAD) Arrays, In Terms of Dark Count Rate (DCR) and Random Telegraph Signal (RTS) Noise.

Supervisor: Professor Lodovico Ratti

2018-2021 ● **M.Sc. in Electrical Engineering, Micro and Nano-Electronics Technologies**

Iran University of Science and Technology (IUST) [Rank in Iran = 15](#), Tehran, Iran

CGPA: 3.8/4

Thesis Title: Ionizing Radiation Tolerance Enhancement in Single-Photon Avalanche Diodes and Jitter Modulation by Photon Wavelength Variation in These Devices

Supervisor: Dr. Mohammad Azim Karami

2014-2018 ● **B.Sc. in Electrical Engineering, Electronics**

University of Zanjan (ZNU), Zanjan, Iran

CGPA: 3.3/4

Thesis Title: Fabrication of a Tool for Taking Patient's Pulse and Sending It to Doctor as a SMS

RESEARCH INTERESTS

- Radiation Effects
- Single Photon Avalanche Diodes (SPADs)
- CMOS Image Sensor (CIS)
- Reliability
- FinFET

PUBLICATIONS

- F. Shojaei, M. Zarei, L. Ratti, and M. A. Karami, "A New Guard Ring for Ionizing Radiation Tolerance Enhancement in Single-Photon Avalanche Diodes," *Microelectronics Reliability*, vol. 135, no. 114573, pp. 1-7, 2022. DOI: <https://doi.org/10.1016/j.microrel.2022.114573>
- F. Shojaei, T. Haddadifam, and M. A. Karami, "Jitter modulation by photon wavelength variation in single-photon avalanche diodes (SPADs)," *Optical and Quantum Electronics*, vol. 53, no. 7, pp. 1-10, 2021. DOI: <https://doi.org/10.1007/s11082-021-02991-z>

HONORS & AWARDS

- Ranked 5th GPA among the graduating class of 2021 in the masters' program at Iran University of Science and Technology, Tehran, Iran.
- Received full scholarship from Iran University of Science and Technology in M.Sc. degree. (Tuition waver)
- Ranked within the top 2% of the Iranian University Entrance Exam for master's degree in electrical engineering among approximately 35,000 candidates, 2018.
- Ranked within the top 4% of the Iranian University Entrance Exam for bachelor's degree in electrical engineering among more than 300,000 candidates, 2014.

Computer Skills

- Programming Languages: MATLAB
- Applications: SILVACO, Lumerical, OrCAD PSpice, VMware, GAMS, Microsoft Office

Language Skills

English 

● IELTS iBT: Overall=7 L=8 R=7.5 W=6 S=7

Persian 

Azerbaijani 

SEMINARS & WORKSHOPS

- "Ionizing Radiation Effects on CMOS Image Sensors (CIS)", Iran University of Science and Technology, Dec. 2019, Tehran, Iran.
- "Jitter in Digital Circuits", Iran University of Science and Technology, Dec. 2019, Tehran, Iran.
- "Structure and Application of Optical Modulators", Iran University of Science and Technology, July 2019, Tehran, Iran.
- "Organic Logic Gates", Iran University of Science and Technology, May 2019, Tehran, Iran.
- "Radiation Effects on Electronic Devices and Circuits", Iran University of Science and Technology, April 2019, Tehran, Iran.
- "Nanostructure Infrared Photodiodes", Iran University of Science and Technology, Dec. 2018, Tehran, Iran.

EXPERIENCES

Research Experience

- Since Dec. 2022 ● Electronic Instrumentation Laboratory, University of Pavia, Pavia, Italy
- 2018-2021 ● Image Sensor Lab, Iran University of Science and Technology, Tehran, Iran

Industry Experience

- May 2016-Aug. 2016 ● Trainee, Iran Transfo, Zanjan, Iran

SELECTED COURSES & GRADES

M.Sc.

- Master's Final Project, Dr. Karami, 20/20
- Optical Electronics, Prof. Mohammadnejad, 17/20
- Nanodevice and Integration, Dr. Karami, 19/20
- Image Sensors, Dr. Karami, 17/20
- Semiconductor Material and Characterization, Dr. Yazdanpanah, 18.8/20

B.Sc.

- Bachelor's Final Project, Dr. Taheri, 19/20
- Engineering Mathematics, Dr. Sharifi, 17/20
- Electronic Physics, Dr. Ghobadi, 15/20
- Electronic 3, Dr. Parsa, 18.3/20
- Electronic 1, Dr. Ghobadi, 18.7/20

MEMBERSHIP

- Research Fellow for the Italian National Institute of Nuclear Physics (INFN), Section of Pavia, Since 2023
- Member of Zanjan University Technology Development Center, Since 2019.