

MAHMOOD SEIFOURI

Associate Professor

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BIOGRAPHY:

Mahmood Seifouri received the B.Sc. (Hons) and PhD degrees in electrical and electronic engineering from the University of Wales College of Cardiff, UK, in 1985 and 1989, respectively. After spending two years as a Lecturer at Brighton University, UK, Dr Seifouri moved to Iran University of Science and Technology in 1991. After spending 9 years at IUST, in 2000, he was employed as a Senior Development Engineer at Bookham Technology, UK, where he was primarily involved in research & development projects in the field of optoelectronics. In September 2001, he joined Optinetrics, CA, USA, as a Senior Development Engineer and continued with his work over there. Since 2006, Dr Seifouri has been with the Faculty of Electrical Engineering, Shahid Rajaei Teacher Training University, Tehran, Iran.

TEACHING SUMMARY:

UNDERGRADUATE COURSES:

- Electronics I, II & III
- Solid State Electronic Devices
- Electronic Circuits Lab
- English Language for the Students of Electrical Engineers

POSTGRADUATE COURSES:

- Fiber Optics
- Optical Networks
- Optoelectronics
- Theory and Fabrication Technology for Semiconductor Devices

RESEARCH SUMMARY:

Dr Seifouri research interests include experimental and numerical studies of electromagnetic fields and waves with particular emphasis on the theory, modeling and simulation of optical waveguides, lasers, amplifiers and nano-scale photonic circuits.

PUBLICATIONS, PEER REVIEWED JOURNALS:

- A Cheshmberah, **M Seifouri**, S Olyaei, "Supercontinuum generation in PCF with As₂S₃/Ge₂₀Sb₁₅Se₆₅ Chalcogenide core pumped at third telecommunication wavelengths for WDM", *Optical and Quantum Electronics* 52 (12), 1-14, 2020.
- M Mohammadi, V Fallahi, **M Seifouri**, "Ultracompact all-optical full adders using an interference effect based on 2D photonic crystal nanoring resonators", *Journal of Computational Electronics*, 1-10, 2020.
- F Moradiani, AM Mohamadi, **M Seifouri**, "High-performance tunable multi-channel graphene-based square ring resonator demultiplexer", *Optics Communications* 475, 126218, 2020.
- SA Monfared, **M Seifouri**, SM Hamidi, SM Mohseni, "Two-dimensional graphene-plasmonic crystals for all-optical switch applications", *Optical and Quantum Electronics* 52 (11), 1-16, 2020.
- F Moradiani, **M Seifouri**, K Abedi, FG Gharakhili, "High Extinction Ratio All-Optical Modulator Using a Vanadium-Dioxide Integrated Hybrid Plasmonic Waveguide", *Plasmonics*, 1-10, 2020.
- M Mohammadi, V Fallahi, **M Seifouri**, "Optimization and performance analysis of all-optical compact 4 and 5-channel demultiplexers based on 2D PC ring resonators for applications in advanced optical communication", *Silicon*, 1-11, 2020.
- M Mohammadi, **M Seifouri**, E Boyerahmadi, R Udaiyakumar, "Exploring refractive index ultra compact Nano sensor using photonic crystal resonant cavities", *Journal of Computational and Theoretical Nanoscience* 17 (7), 2926-2931, 2020.
- F Moradiani, A Farmani, MH Mozaffari, **M Seifouri**, K Abedi, "Systematic engineering of a nanostructure plasmonic sensing platform for ultrasensitive biomaterial detection", *Optics Communications*, 126178, 2020.
- S Olyaei, **M Seifouri**, EA Sourani, V Dhasarathan, "Design and Numerical Analysis of an All-optical 4-channel Power Splitter in E, S, C, L, and U Bands via Nano-line Defects in Photonic Crystal", *Journal of Optical Communications* 41 (3), 241-247, 2020.
- V Fallahi, **M Seifouri**, "Design of a High-Quality Optical Filter Based on 2D Photonic Crystal Ring Resonator for WDM Systems", *Journal of Optical Communications* 41 (4), 355-361, 2020.
- E Sharif-Kazemi, S Olyaei, **M Seifouri**, H Afkham, "Investigation and simulation of the effect of silver, aluminum, gold, and platinum nano-ribbons on the efficiency of amorphous silicon solar cell", *Nanotechnology for Environmental Engineering* 5 (1), 4, 2020.
- MR Alizadeh, **M Seifouri**, "Design and Analysis of a Dispersion-engineered and Highly Nonlinear Rib Waveguide for Generation of Broadband Supercontinuum Spectra", *Frequenz* 74 (3-4), 153-161, 2020.
- G Delphi, S Olyaei, **M Seifouri**, A Mohebzadeh-Bahabady, "Design of an add filter and a 2-channel optical demultiplexer with high-quality factor based on nano-ring resonator", *Journal of Computational Electronics* 18 (4), 1372-1378, 2019.
- M Mohammadi, S Olyaei, **M Seifouri**, "Passive integrated optical gyroscope based on photonic crystal ring resonator for angular velocity sensing", *Silicon* 11 (6), 2531-2538, 2019.
- M Mohammadi, **M Seifouri**, "A new proposal for a high-performance 4-channel demultiplexer based on 2D photonic crystal using three cascaded ring resonators for applications in advanced optical systems", *Optical and Quantum Electronics* 51 (11), 350, 2019.
- G Delphi, S Olyaei, **M Seifouri**, A Mohebzadeh-Bahabady, "Design of low cross-talk and high-quality-factor 2-channel and 4-channel optical demultiplexers based on photonic crystal nanoring resonator", *Photonic Network Communications* 38 (2), 250-257, 2019.

- V Fallahi, **M Seifouri**, "Novel structure of optical add/drop filters and multi-channel filter based on photonic crystal for using in optical telecommunication devices", *Journal of Optoelectrical Nanostructures* 4 (2), 53-68, 2019.
- M Mohammadi, **M Seifouri**, "Numerical investigation of photonic crystal ring resonators coupled bus waveguide as a highly sensitive platform", *Photonics and Nanostructures-Fundamentals and Applications* 34, 11-18, 2019.
- S Olyaei, **M Seifouri**, R Karami, A Mohebzadeh-Bahabady, "Designing a high sensitivity hexagonal nano-cavity photonic crystal resonator for the purpose of seawater salinity sensing", *Optical and Quantum Electronics* 51 (4), 97, 2019.
- **M Seifouri**, MA Rouini, S Olyaei, "A Photonic Crystal Fiber Based Surface Plasmon Resonance Biosensor with Elliptical and Circular Holes", *Journal of Nanoelectronics and Optoelectronics* 14 (3), 335-341, 2019.
- M Mohammadi, **M Seifouri**, "Numerical simulation of all optical demultiplexer based on pillar photonic crystal ring resonators", *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields* 32(2), 2019.
- V Fallahi, **M Seifouri**, M Mohammadi, "A new design of optical add/drop filters and multi-channel filters based on hexagonal PhCRR for WDM systems", *Photonic Network Communications* 37 (1), 100-109, 2019.
- **M Seifouri**, S Olyaei, M Sardari, A Mohebzadeh-Bahabady, "Ultra-fast and compact all-optical half adder using 2D photonic crystals", *IET Optoelectronics* 13 (3), 139-143, 2019.
- G Delphi, S Olyaei, **M Seifouri**, A Mohebzadeh-Bahabady, "Design of an add filter and a 2-channel optical demultiplexer with high-quality factor based on nano-ring resonator", *Journal of Computational Electronics*, 1-7, 2019.
- G Delphi, S Olyaei, **M Seifouri**, "Software-based teaching of optical demultiplexers by using photonic crystals with presenting the syllabus for MSc students in electronic engineering major", *Technology of Education Journal (TEJ)* 13 (4), 762-774, 2019.
- G Delphi, S Olyaei, **M Seifouri**, A Mohebzadeh-Bahabady, "Design of low cross-talk and high-quality-factor 2-channel and 4-channel optical demultiplexers based on photonic crystal nano-ring resonator", *Photonic Network Communications* 38 (2), 250-257, 2019.
- S Olyaei, **M Seifouri**, A Mohebzadeh-Bahabady, M Sardari, "Realization of all-optical NOT and XOR logic gates based on interference effect with high contrast ratio and ultra-compacted size", *Optical and Quantum Electronics* 50 (11), 385, 2018.
- V Fallahi, **M Seifouri**, "Novel Four-Channel All Optical Demultiplexer Based on Square PhCRR for Using WDM Applications", *Journal of Optoelectrical Nanostructures* 3 (4), 59-70, 2018.
- P Palizvan, S Olyaei, **M Seifouri**, "High Sensitive Optical Pressure Sensor Using Nano-Scale Plasmonic Resonator and Metal-Insulator-Metal Waveguides", *Journal of Nanoelectronics and Optoelectronics* 13 (10), 1449-1453, 2018.
- **M Seifouri**, MA Rouini, S Olyaei, "Design of a surface plasmon resonance biosensor based on photonic crystal fiber with elliptical holes", *Optical Review* 25 (5), 555-562, 2018.
- P Palizvan, S Olyaei, **M Seifouri**, "An Optical MIM Pressure Sensor Based on a Double Square Ring Resonator", *Photonic Sensors* 8 (3), 242-247, 2018.
- **M Seifouri**, S Olyaei, M Ahmadvand, "Arrayed waveguide grating based on Si nanowire with two center wavelengths", *Journal of Optoelectronics and Advanced Materials* 20 (7-8), 356-362, 2018.
- **M Seifouri**, V Fallahi, S Olyaei, "Ultra-high-Q optical filter based on photonic crystal ring resonator", *Photonic Network Communications* 35 (2), 225-230, 2018.

- **M Seifouri**, MR Alizadeh, "Supercontinuum Generation in a Highly Nonlinear Chalcogenide/MgF₂ Hybrid Photonic Crystal Fiber", *International Journal of Optics and Photonics* 12 (1), 69-78, 2018.
- M Mohammadi, S Olyaei, **M Seifouri**, "Passive Integrated Optical Gyroscope Based on Photonic Crystal Ring Resonator for Angular Velocity Sensing", *Silicon* 11(6), 2531-2538, 2018.
- V Fallahi, **M Seifouri**, "A new design of a 4-channel optical demultiplexer based on photonic crystal ring resonator using a modified Y-branch", *Optica Applicata* 48 (2), 2018.
- C Kumar, R Goyal, "?????"
- F Moradiani, **M Seifouri**, K Abedi, "Design and Analysis of Plasmonic Switch at mid-IR Wavelengths with Graphene Nano-Ribbons", *Journal of Research on Many-body Systems* 8 (16), 101-105, 2018.
- V Fallahi, **M Seifouri**, "Design of an Improved Optical Filter Based on Dual-Curved PCRR for WDM Systems", *Journal of Optoelectrical Nanostructures* 2 (4), 45-56, 2017.
- **M Seifouri**, P Amiri, I Dadras, "A transimpedance amplifier for optical communication network based on active voltage-current feedback", *Microelectronics journal* 67, 25-31, 2017.
- V Fallahi, **M Seifouri**, S Olyaei, H Alipour-Banaei, "Four-channel optical demultiplexer based on hexagonal photonic crystal ring resonators", *Optical Review* 24 (4), 605-610, 2017.
- MR Alizadeh, **M Seifouri**, "Dispersion engineering of highly nonlinear rib waveguide for mid-infrared super continuum generation", *Optik* 140, 233-238, 2017.
- **M Seifouri**, S Olyaei, M Dekamin, R Karami, "Dispersion compensation in optical transmission systems using high negative dispersion chalcogenide/silica hybrid microstructured optical fiber", *Optical Review* 24 (3), 318-324, 2017.
- R Karami, **M Seifouri**, S Olyaei, M Chitsazian, MR Alizadeh, "Numerical analysis of a circular chalcogenide/silica hybrid nanostructured photonic crystal fiber for the purpose of dispersion compensation", *International Journal of Numerical Modelling: Electronic Networks, Devices and Fields* 30(3-4), 2017.
- **M Seifouri**, R Sharaf, "Symmetric metal nanogratings and horned shape extended pads to enhance light transmission of plasmonic metal-semiconductor-metal photodetector", *Optical and Quantum Electronics* 49 (4), 136, 2017.
- **M Seifouri**, S Olyaei, R Karami, "A New Design of As₂Se₃ Chalcogenide Nanostructured Photonic Crystal Fiber for the Purpose of Supercontinuum Generation", *Current Nanoscience* 13 (2), 202-207, 2017.
- S Olyaei, **M Seifouri**, "Improvement of Optical Properties in Hexagonal Index-Guiding Photonic Crystal Fiber for Optical Communications", *Mathematics Interdisciplinary Research* 2 (1), 45-57, 2017.
- M Rakide, **M Seifouri**, P Amiri, "A folded cascade-based broadband transimpedance amplifier for optical communication systems", *Microelectronics Journal* 54, 1-8, 2016.
- S Olyaei, **M Seifouri**, H Mohsenirad, "Label-free detection of glycosylated haemoglobin in human blood using silicon-based photonic crystal nanocavity biosensor", *Journal of Modern Optics* 63 (13), 1274-1279, 2016.
- H Mohsenirad, S Olyaei, **M Seifouri**, "Design of a new two-dimensional optical biosensor using photonic crystal waveguides and a nanocavity", *Photonics & Lasers in Medicine* 5 (1), 51-56, 2016.
- S Olyaei, **M Seifouri**, A Nikoosohbat, "Hexagonal-circular photonic crystal fiber with low chromatic dispersion, low confinement loss, and low nonlinearity", *Nashriyyah-i Muhandisi-i Barq Va Muhandisi-i Kampyutar-i Iran, A-Muhandisi-i Barq* 14(2), 156-160, 2016.

- **M Seifouri**, R Kalhor, "Proposing a new photonic crystal fiber structure for improving supercontinuum spectrum generation", *Electronic Industries* 7 (1), 5-10, 2016.
- P Amiri, **M Seifouri**, B Afarin, AH Pour, "Design of RGC Preamplifier with Bandwidth 20GHz and Transimpedance 60 dBΩ for Telecommunication Systems", *Tabriz Journal of Electrical Engineering* 46 (276), 15-23, 2016.
- S Olyae, **M Seifouri**, A Nikoosohbat, "HEXAGONAL-CIRCULAR AND SQUARE-HEXAGONAL INDEX-GUIDING PHOTONIC CRYSTAL FIBERS", *Romanian Review Precision Mechanics, Optics & Mechatronics* 13, 2016.
- **M Seifouri**, M Dekamin, S Olyae, "A new circular chalcogenide/silica hybrid microstructured optical fiber with high negative dispersion for the purpose of dispersion compensation", *Optik* 126 (21), 3093-3098, 2015.
- **M Seifouri**, P Amiri, M Rakide, "Design of broadband transimpedance amplifier for optical communication systems", *Microelectronics Journal* 46 (8), 679-684, 2015.
- S Olyae, **M Seifouri**, A Nikoosohbat, MSE Abadi, "Low nonlinear effects index-guiding nanostructured photonic crystal fiber", *International Journal of Chemical, Nuclear, Materials and Metallurgical Engineering* 9(2), 253-257, 2015.
- **M Seifouri**, S Olyae, M Dekamin, "A New Design of As₂Se₃ Chalcogenide Glass Photonic Crystal Fiber with Ultra-Flattened Dispersion in Mid-Infrared", *Majlesi Journal of Electrical Engineering* 8 (4), 9-15, 2014.
- P Amiri, M Kohestani, **M Seifouri**, "THD Analysis in Closed-Loop Analog PWM Class-D Amplifiers", *Journal of Electrical and Computer Engineering Innovations* 2 (1), 1-5, 2014.
- **M Seifouri**, A Faraji, "Simulation of the Optimized Structure of a Laterally Coupled Distributed Feedback (LC-DFB) Semiconductor Laser Above Threshold", *Engineering, Technology & Applied Science Research* 3 (5), 522-525, 2013.
- **M Seifouri**, F Shahshahani, A Faraji, "Numerical Analysis of SHB Effects in Laterally-Coupled Distributed Feedback (LC-DFB) Lasers", *Engineering, Technology & Applied Science Research* 2 (5), 273-277, 2012.
- **M Seifouri**, MM Karkhanehchi, S Rohani, "Design of Multi-Layer Optical Fibers with Ring Refractive Index to Reduce Dispersion and Increase Bandwidth in Broadband Optical Networks", *Engineering, Technology & Applied Science Research* 2 (3), 216-220, 2012.
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PUBLICATIONS, CONFERENCE PAPERS:

- S.Olyae, **M. Seifouri**, M. Ahmadvand "Low crosstalk and low insertion loss 43-channel AWG Demultiplexer" 1st West Asian Colloquium on Optical Wireless Communications (WACOWC2018), Isfahan, April 2018
- S. Olyae, **M. Seifouri**, A. Nikosohbat, "Low Chromatic Dispersion and Confinement Loss Nano Photonic Crystal Fiber", ICN 2014, Turkey, 9 Oct. 2014

- M. Seifouri, and F. Moradiani, "Design and Analysis of Plasmonic Switch at mid-IR Wavelengths with Graphene Nano- Ribbons", RIAPA-LDS 2017, Tabriz, 23 May 2017
- S. Olyaei, **M. Seifouri**, and A. Nikoosohbat, "Low Chromatic Dispersion and Confinement Loss Nano Photonic Crystal Fiber", 2nd International Conference on Nanotechnology, Istanbul University, Turkey, 9-11 July 2014.
- **M.Seifouri**, et al. "A special-purpose embedded controller for an implantable spinal cord simulation System" 18th ICBME, 14-16 December 2011, Tehran, Iran.
- **M. Seifouri**, et al "Single-electron box simulation using a new equivalent circuit model for single-electron tunneling junction" The second Conf. on applications of nanotechnology in Sciences, Engineering and Medicine (NTC2011), 16 & 17 May 2011, Mashhad, Iran.
- **M.Seifouri**, et al. "Continuous-tone gray-scale photomasks based on photosensitive spin-on-glass technology for deep-UV lithography applications" 23rd Annual BACUS Symposium on Photomask Technology. Proceedings of the SPIE, Volume 5256, pp. 889-896, December 2003, CA, USA
- **M.Seifouri**, et al. "Single mode optical waveguides in silicon" Integrated optics, IEE Colloquium, PP. 11/1-11/4, June 1989, UK
- **M.Seifouri**, et al. "Optical waveguides and Simox Characterization", 1989 IEEE SOS/SOI Technology Conference, USA
- **M.Seifouri**, et al. "Coupled wave devices for III-V semiconductor optics", SIOE 1988, UWIST, UK
- **M.Seifouri**, et al. "Coupled wave devices for III-V semiconductor integrated optics", Proc XXI Yugoslav, Telecom Symposium, Vol 2, pp G/5-1 – G/5-4, Ljubliana, 1987

PUBLICATIONS, BOOKS:

- **M. Seifouri**, "Principles and Applications of Optical Metamaterials with Numerical Simulations using LUMERICAL software", Shahid Rajaei Teacher Training University Press, (Translation & Compile), 1397
- **M. Seifouri**, "Optoelectronic Devices and Systems" (Translation, 2 books). Published by Shahid Rajaei Teacher Training University Press, 1389
- **M. Seifouri**, Optoelectronics (Translation). Published by Iran University of Science & Technology Press, 1378

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