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Fields of Interest

Photonics and optoelectronics
Photonic crystals and photonic integrated circuits design
Plasmonics and Graphene
Analog and digital electronic systems design

Education

BSc:

Electrical and Electronic Eng., Razi University, Kermanshah, Iran, 2000.

MSc:

Electrical and Electronic Eng., Iran University of Science and Technology, Tehran, Iran, 2004.

PhD:

Electrical and Electronic Eng., Iran University of Science and Technology, Tehran, Iran, 2009.

Publications

Journal Papers:

1. Design and simulation of 1×4 phononic crystals based acoustic demultiplexers with square and triangular lattices, M Imani, K Fasihi, Journal of Iranian Association of Electrical and Electronics Engineers 22 (1), 1-9, 2025.
2. Design and simulation of 1×3 acoustic demultiplexer based on hexagonal phononic crystal ring resonators, M Imani, K Fasihi, Journal of Iranian Association of Electrical and Electronics Engineers 21 (3), 85-91, 2024.

3. Realization of pressure sensor based on a GaAs-based two dimensional photonic crystal slab on SiO₂ substrate, S Norouzi, K Fasihi, *Journal of Computational Electronics* 21 (2), 513-521, 2022.
4. Design and simulation of a highly sensitive photonic crystal temperature sensor based on a cavity filled with the distilled water, R Yosefi, K Fasihi, *Journal of Iranian association of electrical and electronics engineers* 18 (1), 101-108, 2021.
5. Design and simulation of a pressure sensor based on a two dimensional photonic crystal slab of PbMoO₄, S Nourouzi, K Fasihi, *Journal of Iranian association of electrical and electronics engineers* 18 (1), 109-116, 2021.
6. Design and Simulation of a New Micro-Displacement Sensor Based on Negative Refraction Photonic Crystal, K Fasihi, *Nashriyyah Muhandisi Barq va Muhandisi Kampyutar Iran*, 79 (2), 124.
7. A new 2×1 photonic crystal multiplexer assisted by Fano resonances and Kerr nonlinear effect, K Fasihi, S Bashiri, *Photonics and Nanostructures-Fundamentals and Applications*, 42, 100837, 2020.
8. An all-optical 1×2 Demultiplexer Using Kerr Nonlinear Nano-plasmonic Switches, S Bashiri, K Fasihi, *Plasmonics*, 15 (2), 449-456, 2020.
9. Low cross-talk and broadband waveguide nano-intersections, K Fasihi, S Bashiri, *Optics Communications* 459, 124990, 2020.
10. A 2×1 all-optical multiplexer using Kerr nonlinear nano-plasmonic switch, S Bashiri, K Fasihi, *Optical and Quantum Electronics*, 51 (11), 374, 2019.
11. Design and Simulation of a New Highly Sensitive Gas Sensor Based on Negative Refraction Photonic Crystal, K Fasihi, *Journal of Iranian association of electrical and electronics engineers*, 16, 9-15, 2019.
12. A highly sensitive optofluidic-gas sensor using two dimensional photonic crystals, A Anamoradi, K Fasihi, *Superlattices and Microstructures*, 125, 302-309, 2019.
13. High-contrast controllable switching based on polystyrene nonlinear cavities in 2D hole-type photonic crystals, R Paghousi, K Fasihi, *Optics Communications*, 415, 101-106, 2018.
14. A highly-sensitive label-free biosensor based on two dimensional photonic crystals with negative refraction, N Malmir, K Fasihi, *Journal of Modern Optics*, 64 (20), 2195-2200, 2017.
15. A new compact circuit-level model of semiconductor lasers: investigation of relative intensity noise and frequency noise spectra, M Darman, K Fasihi, *Journal of Modern Optics*, 64 (18), 1839-1845, 2017.
16. An equivalent circuit-level model for dual-wavelength quantum cascade lasers, M Darman, K Fasihi, *Optik-International Journal for Light and Electron Optics*, 136, 428-434, 2017.
17. An equivalent circuit-level model for dual-wavelength quantum cascade lasers, M Darman, K Fasihi, *Optik-International Journal for Light and Electron Optics*, 136, 428-434, 2017.

18. Three-level rate-equations-based model of quantum cascade lasers with a single solution regime, M Darman, K Fasihi, *Optical and Quantum Electronics*, 49 (3), 110, 2017.
19. Circuit-Level Modeling of Quantum Cascade Lasers: Influence of Kerr Effect on Static and Dynamic Responses, M Darman, K Fasihi, *Optik-International Journal for Light and Electron Optics*, 127 (22), 10303–10310, 2016.
20. Design and simulation of linear logic gates in the two-dimensional square-lattice photonic crystals, K Fasihi, *Optik-International Journal for Light and Electron Optics*, 127 (11), 4669-4674, 2016.
21. Crosstalk investigation in channel-drop filters with coupled-cavity based wavelength-selective reflection feedbacks, K Fasihi, A Hesam, *Optik-International Journal for Light and Electron Optics*, 127 (4), 2294-2297, 2016.
22. A novel single control all-optical switching and routing in nonlinear photonic crystals, K Fasihi, *Optik-International Journal for Light and Electron Optics* 127 (3), 1474-1478, 2016.
23. All-optical controllable channel-drop filters in two dimensional square-lattice photonic crystals, K Fasihi, *Journal of Modern Optics*, 2015.
24. All-optical analog-to-digital converters based on cascaded 3-dB power splitters in 2D photonic crystals, K Fasihi, *Optik-International Journal for Light and Electron Optics*, 125 (21), 6520-6523, 2014.
25. High-Contrast All-Optical controllable Switching and Routing in Nonlinear Photonic Crystals, K Fasihi, *Journal of lightwave technology*, 32 (18), 3126-3131, 2012.
26. Photonic crystal wavelength-selective attenuators: Design and modeling, K Fasihi, *Photonics and Nanostructures-Fundamentals and Applications*, 10, 470-477, 2012.
27. Coupled-Mode Analysis of a T-Branch Waveguide with a Wavelength-Selective Reflection Feedback, K Fasihi, *International Review on Modelling and Simulations (I.RE.MO.S.)*, 4 (6), 3383-3387, 2011.
28. Highly efficient channel-drop filter with a coupled cavity-based wavelength-selective reflection feedback, K Fasihi, S Mohammadnejad, *Optics express*, 17 (11), 8983-8997, 2009.
29. Orthogonal hybrid waveguides: an approach to low crosstalk and wideband photonic crystal intersections design, K Fasihi, S Mohammadnejad, *Journal of Lightwave Technology*, 27 (6), 799-805, 2009.
30. Improving Laser Range Finder Performance with Modified Phase-Shift Measurement Technique. K Fasihi, S Mohammadnejad, *Journal of Applied Science and Technology*, 2008.

International Conference Papers

1. Design and Modeling of Hybrid Waveguides with Quasi-Flat Transmission Band, K Fasihi, S Mohammadnejad, IEEE conference HONET, Malaysia, 2008.
2. A new design of laser phase-shift range finder independent of environmental conditions and thermal drift, 9th International Conference on Photonics, K Fasihi, S Mohammadnejad, Networking and Computing (PNC), JCIS, 2006, Tiawan.
3. A narrow-band wavelength-selective reflector based on coupled cavities, K Fasihi, S Mohammadnejad, IEEE Applied Electronics 2009, Czech Republic.

Teaching experience

Teacher of courses:

Electrical Circuits I

Electronic circuits I, II, III

General Mathematics I

Engineering Mathematics

Electromagnetics

Digital Circuits Design

Electronic Physics

Electronic circuits Lab I, II, III

Optoelectronics I, II

Quantum Electronics

Photonic Integrated Circuit Design