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Fields of Interest

Photonics and optoelectronics
Photonic crystals and photonic integrated circuits design
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. 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.
2. 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.
3. 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.
4. 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.

5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. All-optical controllable channel-drop filters in two dimensional square-lattice photonic crystals, K Fasihi, Journal of Modern Optics, 2015.
11. 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.
12. High-Contrast All-Optical controllable Switching and Routing in Nonlinear Photonic Crystals, K Fasihi, Journal of lightwave technology, 32 (18), 3126-3131, 2012.
13. Photonic crystal wavelength-selective attenuators: Design and modeling, K Fasihi, Photonics and Nanostructures-Fundamentals and Applications, 10, 470-477, 2012.
14. 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.
15. 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.
16. 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.
17. 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 circuits Lab I, II, III

Optoelectronics I, II

Quantum Electronics

Photonic Integrated Circuit Design