

Hooman Akhavan

Micro Photonic Devices Group (Professor John D. O'Brien's research group)
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Education

Spring 2002 – Present, *University of Southern California (U.S.C.),*
Los Angeles, California USA
Ph.D. student in Electrical Engineering – Electrophysics

Fall 2000 – Fall 2001, *University of Southern California (U.S.C.),*
Los Angeles, California USA
Master of Science in Electrical Engineering (MSEE), GPA: 3.63/4

1992 - 1997, *Sharif University of Technology (S.U.T.),* Tehran, IRAN
B.Sc. in Applied Physics, GPA: 3.0/4

Coursework

Major courses at Sharif University

Spectroscopy

Physical Optics, Applied Optics, Optics lab, Laser Physics, Laser lab

Electronics, Electronics laboratories

Plasma Physics

Experimental Methods in Physics

Computational Methods in Physics

Advanced Physics labs

Courses at the University of Southern California (USC)

EE/MASC501: Solid State

EE504: Solid State Processing and Integrated Circuit Lab

EE506: Semiconductor Physics

EE537: Survey of Modern Solid State Devices

EE539: Engineering Quantum Mechanics

EE599: Nanotechnology and Nanoelectronics

EE599: Advanced Quantum Mechanics I

EE599: Advanced Quantum Mechanics II

EE599: Quantum Communication

EE570a: Advanced Electromagnetic Theory

EE529: Optics

EE530: Optical Materials, Instruments, and Devices

EE531: Nonlinear Optics

EE540: Quantum Electronics

EE509: Electromagnetics for Semiconductor Photonics I

EE599: Electromagnetics for Semiconductor Photonics II

EE599: Elements of Quantum Electronics and Quantum Optics
with Applications to Semiconductor Laser Physics

EE590: Directed Research (11 Units)

EE790: Directed Research (29 Units)

CSCI455: Introduction to Programming System Design (C++)

CSCI599: High Performance Scientific Computing

Activities

Micro Photonic Devices Group (MPDG)
Department of Electrical Engineering – Electrophysics
University of Southern California (USC)
Research Assistant, Spring 2003 –

Nanostructure Materials and Devices Laboratories (NMDL)
Department of Materials Science
University of Southern California (USC)
Research Assistant, Fall 2000 – Spring 2002

Department of Physics
Sharif University of Technology (S.U.T.)
Assistant in Electronics labs, Fall 1996 - Fall 1999
Assistant in Laser lab, Spring 1999
Teaching Assistant in Laser, Spring 1999

Technical Skills

Numerical and Analytical Modeling of Electromagnetic Structures
Waveguide Transmission Measurement
Photoluminescence (PL) Experiment
Solid State Processing
Scanning Electron Microscopy (SEM)

Graduate Research Experience

Microdisk Resonators
Photonic Crystals
MBE grown InAs/InGaAs Quantum Dot structures

Publications

Hooman Akhavan, Andrew Stapleton, Zhen Peng, Seung-June Choi, Roshanak Shafiiha, Stephen Farrell, Mahmood Bagheri, P. Daniel Dapkus, John D. O'Brien, "Active Semiconductor Microdisk Vertically Coupled to a Waveguide Bus as a Polarization Rotator", *OSA Annual Meeting 2005*, Tucson (AZ), October 2005.

A. Stapleton, S. Farrell, **H. Akhavan**, R. Shafiiha, Z. Peng, S. J. Choi, W. Marshall, J. D. O'Brien, and P. D. Dapkus, "Optical Phase Characterization of Active Semiconductor Microdisk Resonators in Transmission", *Applied Physics Letters*, vol. 88, 031106, (2006)

A. Stapleton, R. Shafiiha, **H. Akhavan**, S. Farrell, Z. Peng, S. J. Choi, W. Marshall, J. D. O'Brien, and P. D. Dapkus, "Experimental measurement of optical phase in microdisk resonators", *IEEE/LEOS Summer Topical Meetings 2004*, TuC4-3, San Diego (CA), June 2004.

Computer Languages and Skills

Pascal/C++
Mathematica, Matlab
Microsoft Office, Microcal Origin