



Presenter

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## Abstract

**Title: Ultra-high Q Resonators for On-Chip Si Photonics Applications**

Silicon-on-insulator microdisk resonators with efficient planar-integrated input-output coupling are demonstrated. Two structures of fully-etched and partially-etched Si-microdisk on substrate, compatible with active integration are compared. Experimental quality factors about  $2.5 \times 10^6$  and critical coupling are demonstrated. Potential unique applications of these novel high Q structures for on-chip Si photonics are discussed.

## Biography

**DR. ADIBI** is an associate professor in the School of Electrical and Computer Engineering and the director for center for Advanced Processing-tools for Electromagnetic/acoustics Xtals (APEX) at Georgia Institute of Technology. He was born in Shiraz, Iran in 1967. He received his B.S.E.E. from Shiraz University (Iran) in 1990, and received his M.S.E.E. and Ph.D. degrees from the Georgia Institute of Technology (1994) and the California Institute of Technology (1999), respectively. His Ph.D. research resulted in a breakthrough in persistent holographic storage in photorefractive crystals.

He worked as a postdoctoral scholar at the California Institute of Technology from 1999 to 2000. He has been an assistant professor from 2000 to 2004 in the School of Electrical and Computer Engineering at the Georgia Institute of Technology, where he is now an associate professor. His research interests include holographic data storage, holographic optical elements for optical communications; 3D optical pattern recognition; design, characterization, and applications of photonic crystals for chip-scale WDM and biosensors; spectrometers for bio and environmental sensing; high resolution optical imaging for biomedical applications; ultra-dense and ultra-fast optical interconnects; and optical communication and networking. Dr. Adibi has been the conference chair for the "Photonic Crystal Materials and Devices" conference in the Photonic West Meeting since 2001, and the program chair for the "Nanotechnology" program in the Photonic West Meeting since 2002. He has served as a technical committee member for several conferences organized by IEEE, Optical Society of America (OSA), and The International Society for Optical Engineering (SPIE).

He is the recipient of numerous awards including the Presidential Early Career Award for Scientists and Engineers (PECASE, from the White House), the Packard Fellowship (from the David and Lucile Packard Foundation), the NSF CAREER Award (from National Science Foundation), the Technology Achievement Award from SPIE, the SCEEE Young Faculty Development Award (from the Southeastern Center for Electrical Engineering Education), the NASA Space Act Award (from NASA), SPIE's Young Investigator Award, Outstanding Junior ECE Faculty Award (from Georgia Tech), Howard Ector Outstanding Teacher Award (from Georgia Tech), Richard M. Bass Outstanding Teacher Award (from Georgia Tech), Charles H. Wilts Prize from Caltech (best EE thesis of the year), New Focus Student Award from the Optical Society of America, Top Student (D. J. Lowell) Award from SPIE, and the Oscar P. Cleaver Award from Georgia Tech (Outstanding EE graduate student of the year). He is a senior member of IEEE and a member of Sigma Xi, OSA, SPIE, and ASM. He is also the chair of the IEEE LEOS Atlanta Chapter.