Sandia National Laboratories
IEEE Optical Interconnects Conference 2012
Presentations

PHOTONIC LINKS AND DEVICES - I

Active Wavelength Control of Silicon Microphotonic Resonant Modulators
Tuesday, 22 May 2012 3:00 - 3:15 PM

We present simulations and preliminary experimental results of a new method to stabilize the resonant wavelength of an optical resonant modulator using bit error rate measurements from a local receiver to drive an integrated microheater.

Author(s): A. L. Lentine, W. Zortman, D. C. Trotter, Sandia National Laboratories, Albuquerque, NM, USA and M. R. Watts, Massachusetts Institute of Technology, Cambridge, MA, USA.

Adiabatic Resonant Microring (ARM) Modulator
Tuesday, 22 May 2012 3:15 - 3:30 PM

A high-speed adiabatic resonant microring silicon modulator, which simultaneously enables interior electrical contacts, 4-µm diameter, and 7-THz free spectral range, is demonstrated with open eye diagrams up to 12Gb/s, and extinction ratios up to 7.3dB.

Author(s): E. Timurdogan, Massachusetts Institute of Technology, Cambridge, MA, USA, M. Moresco, Massachusetts Institute of Technology, Cambridge, MA and PhotonIC Corporation, CA, USA, A. Biberman, J. Sun, Massachusetts Institute of Technology, Cambridge, MA, USA, W. Zortman, D. C. Trotter, Sandia National Laboratories, Albuquerque, NM, USA and M. R. Watts, Massachusetts Institute of Technology, Cambridge, MA, USA.

NOVEL PACKAGING AND MODULATORS

High Speed Travelling Wave Carrier Depletion Silicon Mach-Zehnder Modulator
Wednesday, 24 May 2012 3:15 - 3:30 PM

We present the first demonstration of a travelling wave carrier depletion Mach-Zehnder modulator impedance matched to 50 Ω. This device has a bandwidth of 24 GHz and a halfwave voltage length product of 0.7 V-cm, placing it among the best in its class.

Author(s): C. DeRose, D. C. Trotter, W. Zortman, Sandia National Laboratories, Albuquerque, NM, USA and M. R. Watts, Massachusetts Institute of Technology, Cambridge, MA, USA.

U.S. DEPARTMENT OF ENERGY NNSA National Nuclear Security Administration

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