From: **Abstract** <abstract@megatron2.apsmsgs.org>
Date: Fri, Jan 4, 2013 at 7:48 PM
Subject: APS March Meeting 2013 Scheduling Notice
To: jli@mail.utexas.edu

PLEASE READ THIS ENTIRE MESSAGE. THERE IS IMPORTANT INFORMATION THROUGHOUT.
Please DO NOT reply to this address. All comments must be sent to abs-help@aps.org

- - - - > SCHEDULING NOTICE FOR:

APS March Meeting 2013
Baltimore, Maryland, March 18-22, 2013

The abstract you submitted:
(Abstract Log Number MAR13-2012-007283)
'Monolithic Single-Mode DFB Laser Array with Precise Wavelength Control for Optoelectronic Integration using an Equivalent Phase Shift Method,'

has been accepted and scheduled for session W21, (Optoelectronics & Photonics)
which will begin at 02:30 PM on Thursday, 03/21/13 in room: 323.

All of the scientific sessions will take place in the Baltimore Convention Center
or the Baltimore Hilton.

The complete program of the meeting is now available online at:

http://meetings.aps.org/Meeting/MAR13

- - - - - > VIEWING YOUR ABSTRACT

LaTeX commands do not compile correctly in HTML-based web pages: the commands are simply echoed
without the surrounding dollar signs. To view the LaTeX formulas correctly, remember to click on "Preview Abstract" under each abstract listing.

Thank you for your abstract contribution. We look forward to seeing you in Baltimore, Maryland.

APS Meetings Department
abs-help@aps.org
(301) 209-3290

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

**Monolithic Single-Mode DFB Laser Array with Precise Wavelength Control for Optoelectronic Integration using an Equivalent Phase Shift Method** JINGSI LI, JULIAN CHENG, University of Texas at Austin, MICROELECTRONICS RESEARCH CENTER TEAM — The integrated distributed feedback (DFB) laser array is a key component in photonic integrated circuits for wavelength-division multiplexing (WDM) system. However, it is difficult to precisely control the wavelength of individual lasers. When the rear facet of the laser is coated with a high-reflectivity mirror, a random phase change is introduced that shifts the lasing wavelength, making monolithic integration of a wavelength-controlled WDM array very difficult. To solve this problem, we propose a method to precisely control the lasing wavelength of DFB lasers over a wide range by introducing an equivalent phase shift in the cavity using sampled Bragg gratings, using wafer-scale optical lithography and requiring only coarse dimension control. The wavelength can be fine-tuned by applying different DC currents. It is shown that a WDM-DFB laser array with uniform wavelength spacing can be controlled accurately in this manner. Integrated arrays of single-mode DFB lasers for WDM systems can thus be fabricated in a low-cost manner without using low-throughput e-beam lithography, and is scalable for mass-manufacturing.

Jingsi Li
University of Texas at Austin

Date submitted: 09 Nov 2012 Electronic form version 1.4