

PROCEEDINGS OF SPIE

# ***Integrated Optics: Physics and Simulations***

**Pavel Cheben**  
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*Editors*

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## Introduction

Recent advances in integrated optics have created the possibility of entertaining the implementation of complex functionalities into optoelectronics (OE) integrated circuits. OE circuits have the potential to be miniaturized and mass-produced at an affordable cost for many applications and markets, including telecommunications, optical interconnects, medical screening, and biological and chemical sensing, to name a few. Recent developments in diverse areas such as light sources, modulators, switches, detectors, photonic crystals, waveguide structures, resonators, sensors, and various sub-systems, indicate that integrated optics remains an extremely active and firmly established research field.

This conference on Integrated Optics: Physics and Simulations is part of the SPIE 2013 Optics and Optoelectronic Symposium. It focuses on the physics, design and simulation of integrated optical structures, devices and systems. The conference aims to provide an international forum for researchers from academia, industry and government laboratories for sharing the latest advancements relevant to integrated optics physics, design and simulations. The conference covers a wide range of topics, including: simulation and design of optoelectronic devices; waveguide photonic bandgap engineering and microcavities; passive and active waveguide devices; diffractive and subwavelength structures; integrated optical circuits for datacom, WDM networks and coherent communications; waveguide based light sources; photodetectors, modulators, amplifiers, wavelength converters, switches, couplers, resonators, filters and subsystems; waveguide devices for aerospace applications and defence; optical interconnects; photonic design automation, manufacturing and verification tools; and novel algorithms and photonic CAD software for photonics and integration with electronics.

These Conference Proceedings include original research papers presented at the conference, including a number of invited papers from leading authorities in the field. We thank all the contributors for submitting their interesting work. We hope that these Integrated Optics: Physics and Simulation Conference Proceedings will prove valuable to those working in integrated optics and will help advance research in this field.

**Pavel Cheben,  
Jiří Čtyroký  
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