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Laurent Vivien
Seppo Honkanen
Lorenzo Pavesi
Stefano Pelli
Editors

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Introduction

This Proceedings book contains the papers presented at the 4th edition of the “*Silicon Photonics and Photonic Integrated Circuits*” Conference of Photonics Europe 2014. The conference focused on integrated photonics devices based on silicon as well as on other optical materials (e.g. glass, crystals, polymers...). The aim was to present new trends in research, technology and applications.

More than 50 papers were presented, either oral or poster, which covered a whole range of subjects. The quality of the presentations was excellent, which is also reflected in the papers published in this book.

As in the previous edition, the conference has confirmed how silicon technologies are getting pervasive in diverse application fields, from the domains of telecommunications/interconnects to sensing and light emission. The conference has in fact understandably given a particular focus to light amplification and emission devoting two sessions to this topic.

Light coupling and integration are in many ways two very strictly connected issues affecting the viability and efficiency of devices. The conference therefore devoted several sessions to these topics, which included presentations about very diverse optical structures and material systems.

A special session with invited papers devoted to Hybrid Photonics was organized to highlight how novel devices can take advantage from combining the properties of different material systems to obtain better performances and new functionalities.

All sessions were very well attended and actively enlivened by many questions and comments posed by the participants, testifying the interest risen by the quality of the presentations offered by the speakers.

We were delighted to assign the Best Student Paper Award offered by SPIE for this conference to Joan Manel Ramirez, Univ. de Barcelona, Spain, for the paper, *On the photoluminescence of as-deposited Tb-doped silicon oxides and oxynitrides fabricated by ECR-PECVD*.

We would like to thank the members of the Programme Committee and the authors for helping us organizing this high-level conference and SPIE for the smooth organization of the whole symposium.

Vivien Laurent
Seppo Honkanen
Lorenzo Pavesi
Stefano Pelli