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**Henri-Jean Drouhin
Jean-Eric Wegrowe
Manijeh Razeghi**
Editors

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Introduction

The fifth edition of the Spintronics symposium of the SPIE conference gathered more than sixty five speakers in San Diego from Sunday 12 to Thursday 16 August 2012.

As for the four previous editions, the symposium covered the main topics of Spintronics, witnessing for the dynamism of a very active field of research. These proceedings report some important results presented at the meeting.

The fourteen sessions covered: Spin Coherence, Spin Injection (three sessions), Magnetic Tunnel Junctions, Spin-Orbit Interaction, Spin-Transfer, Nanomagnetism, Voltage Controlled Magnetism, Magnetic Semiconductors, Multiferroics and Graphene, Spin-Optics (two sessions), Spin Caloritronics, Spin-Optics and Optoelectronics, Fundamental Properties of Materials, and Optical Methods and Devices.

This symposium was an opportunity to focus on the hot topics of Spin Caloritronics, Voltage Controlled Magnetism, and Spin-Optics.

This year, for the first time, three sessions were devoted to the emerging field of spin optics, where effects related to the photon spin are observed on the propagation of light beams, e.g. optical Spin Hall Effect, in analogy to spintronics experiments based on the electron spin. These spin optics sessions, introduced by a keynote presentation by Erez Hasman (see proceedings), allowed a stimulating matching with other conferences focused on photonics and were an opportunity for exciting discussions and cross-fertilization.

Overall, the conference was an invaluable opportunity for open exchange and stimulating discussions in a friendly atmosphere.

We are grateful to SPIE, to the Program Committee, and to all speakers and authors that have made this conference a success.

Henri-Jean Drouhin
Jean-Eric Wegrowe
Manijeh Razeghi

