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*Editors*

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# Introduction

The seventh edition of the Spintronics symposium of the SPIE conference gathered more than one hundred speakers in San Diego from Sunday to Thursday, 17–21 August 2014.

In line with the previous editions, the Spintronics symposium held in the framework of the Optics+Photonics conference covered most of the hot topics in Spintronics. The conference was also an invaluable opportunity for informal and extremely stimulating discussions between experts and networking in a friendly atmosphere, witnessing for the dynamism of our field of research. These proceedings do not include a full overview of the presentations, but they report a significant part (about 33%) of important results presented at the meeting. The symposium concerns fundamental results in experimental and theoretical physics, and also technological developments. During the last year, we have felt that the MRAM technology is really coming to market, and may have a strong impact on the future of data storage and processing; therefore, we had three focused sessions (8-11) with the participation of key industrial partners, and a key-note opening by Hideo Ohno (Tohoku University). The state of the art in domain wall manipulation and application was presented by S. S. P. Parkin in a keynote lecture. Besides, the program shows the growing importance of the studies and developments about optical manipulation and detection of spins, with a whole session (1) devoted to spin laser, a session on spin photonics (3A), a session based on magnetooptics (7), and two sessions related to optical pumping (2A and 4A).

The symposium was divided into 26 oral sessions plus one poster session that covered: Low-dimensional systems (sessions 2B and 3B), multiferroics, half-metals, oxides, and skyrmions (sessions 4B and 5), helical order and organic semiconductors (session 6), domain walls (session 14), spin caloric transport (sessions 11 and 12), spin transfer and spin-orbit interaction (sessions 13 and 15A), optical and electrical control (session 15B), spin pumping (sessions 16A, 17A, and 18A), topological insulators and Majorana fermions (sessions 16B and 17B), and graphene and chalcogenides (session 18B).

If new fields are emerging (Majorana fermions and helical order), the traditional topics of spintronics remain very active (spin injection, spin dynamics, spin transfer, spin Hanle effect, spin-Hall effects, spin pumping etc). Moreover, this 7th edition of the symposium has shown that there are still exciting debates related to Spin Caloritronics. This topic triggered many open discussions on the possible interpretation of experimental data.

Finally, we are grateful to SPIE, to the Program Committee members who did tremendous work, and to all speakers and authors for their active participation: they have made this conference a great success.

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