TDLS 2011

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The Eighth International Conference on Tunable Diode Laser Spectroscopy, TDLS 2011, was held in Zermatt, Switzerland in the period of July 11–15, 2011. The conference under patronage of Connecticut College (New London, Connecticut USA), General Physics Institute, Russian Academy of Sciences (Moscow, Russia), and ETH Zurich (Zurich, Switzerland), was chaired by Arlan W. Mantz, Alexander I. Nadezhdinskii, and Markus W. Sigrist.

The meeting brings together experts in broad, multidisciplinary and dynamically evolving fields of laser technology, fundamental and applied spectroscopy, as well as their applications in science, and industry. The meeting takes place every 2 years and its organizational structure is optimized to promote interactions between researchers, students and industry from diverse areas of laser science and technology.

The organization of the TDLS-2011 was carried out by the Conference Chairs with a support of the International Advisory Committee that consisted of A. R. W. McKellar (Canada), Andrew J. Orr-Ewing (UK), Frank Tittel (USA), Gerard Wysocki (USA). To establish the main areas of scientific discussions for the 2011 meeting the conference organizing committee invited five top experts to provide an overview of the most exciting new findings and developments in the field of laser spectroscopy. The committee also accepted 84 high-quality contributed papers that provided a balanced overview of various scientific problems

and cutting-edge technologies in the field. Sixteen countries were represented at the TDLS 2011 including Belarus, Belgium, Canada, China, France, Germany, India, Italy, Japan, Russia, Sweden, Switzerland, Syria, The Netherlands, UK, and USA. Out of the pool of submitted papers, 13 were selected for oral presentations and 71 were presented in a poster format. The meeting's six poster sessions as well industrial exhibition floor provided an opportunity for in-depth discussion and networking for authors, industry and other participants.

This is the third time that the selected papers from TDLS conference are being published in the *Special Issue of Applied Physics B*. Twenty carefully selected papers are presented in this special issue. The selection represents four distinct research areas discussed at the meeting that include: (1) frequency combs in spectroscopy, (2) new semiconductor laser sources for spectroscopy, (3) novel spectroscopic techniques and systems, and (4) applications of tunable laser spectroscopy. The papers in this issue have been grouped and published in an order that reflects these four general topic areas.

The Guest Editors also would like to acknowledge the authors for their high-quality papers contributed to this special issue, the multiple referees for performing the highest quality peer-review, the TDLS-2011 organizing committee for providing very valuable advice, the electrical Engineering Department at Princeton University for providing the secretarial support, and last but not least, special thanks to Beth Jarvie (Princeton University), and Jutta Kaisig (University of Kassel) for great office support and help in assembly of this special issue.

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