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Laser Physics and Applications

Tanja Dreischuh
Elena Taskova
Ekaterina Borisova
Alexander Serafetinides
Editors

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Introduction

The International School on Quantum Electronics: Laser Physics and Applications (ISQE) has been organized biennially since 1978 by the Institute of Electronics of the Bulgarian Academy of Sciences and co-organized since 1992 by the SPIE Bulgaria Chapter. The School has already turned into a well-known forum, where both senior and young scientists can present and discuss the recent developments in the field of lasers and their applications in material processing, spectroscopy, nonlinear optics, remote sensing, medicine, and ecology.

The 15th International School on Quantum Electronics took place from 15–19 September 2008 in Bourgas, Bulgaria. Over 120 scientists from Armenia, Austria, Belgium, Canada, France, Germany, Greece, Israel, Italy, Japan, Latvia, Mexico, Romania, Russia, Serbia, Sweden, the Netherlands, United Kingdom, the United States of America, and Bulgaria participated in this edition of the School. A wide range of subjects reflecting the current trends in laser physics were discussed during the invited lectures and two poster sessions. Additionally, the special session "Oral presentation of selected posters," gave the opportunity to the most pronounced young researchers to present their work before the entire audience. For the first time in this issue of the School our co-organizers, SPIE *Europe*, also provided three special awards for the best student posters.

The School was financially supported by SPIE *Europe*, Bulgarian Academy of Sciences, National Technical University of Athens (Greece), Evrika Foundation (Bulgaria), Institute of Electronics, Austrian Science and Research Liaison Office – Sofia, HORIBA Jobin Yvon Inc., Optella Ltd., and Coherent Inc., to which the organizing committee expresses deep gratitude.

The proceedings volume contains the presented lectures and the most interesting posters, refereed and selected for publication by the invited lecturers. It is divided into five parts covering the following topics: laser-matter interactions, laser spectroscopy and metrology, laser remote sensing and ecology, lasers in biology and medicine, and laser systems and nonlinear optics.

The organizing committee would like to thank all lecturers and participants for their contribution to the School, and their work and kind attention. We also invite the readers of this volume to take part in the next 16th ISQE, which will be held in 2010.

Tanja Dreischuh
Elena Taskova
Ekaterina Borisova
Alexander Serafetinides