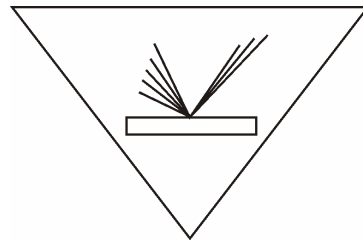


# PROCEEDINGS OF SPIE

## 14th International School on Quantum Electronics **Laser Physics and Applications**

**Peter A. Atanasov**  
**Tanja N. Dreischuh**  
**Sanka V. Gateva**  
**Lubomir M. Kovachev**  
*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 at the Bulgarian Academy of Sciences and co-organized since 1992 by SPIE Bulgaria Chapter. The School has already turned into a well-known forum where both senior and young scientists can present and discuss recent developments in the field of lasers and their applications in material processing, spectroscopy, non-linear optics, remote sensing, medicine, and ecology.

The 14th International School on Quantum Electronics took place on 18-22 September 2006 in Sunny Beach, Bulgaria. Over 120 scientists from Armenia, Australia, Belarus, Czech Republic, France, Germany, Greece, Italy, Israel, Latvia, Japan, Mexico, Poland, Portugal, Romania, Russia, Serbia, Switzerland, United Kingdom, 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 delivered lectures and two poster sections. Additionally the special session "Oral presentation of selected posters", introduced six years ago, is about to become a tradition. It gives an opportunity for the most prominent young researchers to present their work to the entire audience.

The School was financially supported by SPIE Bulgaria Chapter, Evrika Foundation, Institute of Electronics, Optocom Ltd., National Technical University of Athens (Greece), and Coherent Inc, and the organizing committee expresses their deep gratitude for this support.

This 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 spectroscopy and metrology, laser-matter interaction, nonlinear optics applications, laser remote sensing and ecology, and lasers in biophysics and medicine.

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 ISQE, the 15th, which will be held in 2008.

**Peter A. Atanasov**  
**Tanja N. Dreischuh**  
**Sanka V. Gateva**  
**Lubomir M. Kovachev**

