

# PROCEEDINGS OF SPIE

*Saratov Fall Meeting 2006*

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## **Laser Physics and Photonics, Spectroscopy and Molecular Modeling VII**

**Vladimir L. Derbov**  
**Leonid A. Melnikov**  
**Lev M. Babkov**  
*Editors*

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## Introduction

This SPIE proceedings volume contains original contributions presented at the Workshops on Laser Physics and Photonics VIII, Spectroscopy and Molecular Modeling VII in the framework of International School for Young Scientists and Students on Optics, Laser Physics, and Biophysics at the Saratov Fall Meeting 2006. The Workshop and School were held in Saratov, Russia, in September 2006. The main topics of the Workshop and School included wide spectrum of the modern problems of fundamental and applied optics and photonics, including frontier research in laser physics, electrodynamics, photonic crystals, nonlinear optics, spectroscopy, and quantum optics.

Many of presented and discussed materials were the result of international collaboration between Russian universities, particularly Saratov State University, in with international programs such as INTAS, and others, as well as direct scientific and educational contacts with U.S., European, and Asian universities. The meeting featured the participation of many young scientists and students from Saratov State University, Saratov State Technical University, Moscow State University, and other Russian universities and institutions of the Russian Academy of Science.

These Proceedings include selected oral and poster presentations, divided into the following subsections:

- Nonlinear Optics
- Matter in Strong Electromagnetic Fields
- Optical Microstructured Fibers and Band-Gap Structures
- Electrodynamics of Laser Optical Systems
- Quantum Optics
- Spectroscopy and Molecular Modeling

Scientific collaboration is not possible without efficient communication. English has now become an international scientific language. That is why a special session devoted to English as a communicative tool in the scientific community was included into the program of the meeting. A selected talk delivered at this session is presented in the last section of this volume.

We hope that this volume will contribute to the development of optical technologies and that it will be useful for scientists, engineers, and students.

We would like to thank all authors for their contributions to this volume. We are grateful to all of the sponsoring organizations and foundations that supported this meeting very effectively, especially to the Nonlinear Dynamics and Biophysics Research and Educational Center of Saratov State University, and SPIE Russia Chapter. We also would like to thank all the organizers of the meeting.

**Leonid A. Melnikov**  
**Vladimir L. Derbov**  
**Lev M. Babkov**

