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**Victor F. Tarasenko  
Andrey M. Kabanov**  
*Editors*

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**Georges Zisis**, Université de Toulouse (France)

#### *Session Chairs*

- A Gas and Plasma Lasers, Metal Vapor  
**Anatoly N. Soldatov**, National Research Tomsk State University  
 (Russian Federation)  
**Igor G. Ivanov**, Southern Federal University (Russian Federation)
- B Photonics of Optical Materials, Optoelectronics  
**Tatyana N. Kopylova**, Siberian Physical Technical Institute  
 (Russian Federation)  
**Olga N. Tchaikovskaya**, National Research Tomsk State University  
 (Russian Federation)
- C Femtosecond Lasers and Laser Systems  
**Alexander A. Zemlyanov**, V.E. Zuev Institute of Atmospheric Optics  
 SB RAS (Russian Federation)  
**Valery F. Losev**, Institute of High Current Electronics SB RAS  
 (Russian Federation)
- D Laser Systems and New Laser and Optical Technologies, Laser  
 Applications  
**Gennadiy S. Evtushenko**, National Research Tomsk Polytechnic  
 University (Russian Federation)  
**Mikhail Levitskiy**, TOPAZ Research and Inculcation Enterprise  
 (Russian Federation)
- E Non-coherent UV and VUV-radiation Sources  
**Eduard A. Sosnin**, Institute of High Current Electronics SB RAS  
 (Russian Federation)  
**Mikhail I. Lomaev**, Institute of High Current Electronics SB RAS  
 (Russian Federation)

- F Conversion of Laser Radiation, Optoelectronic Devices  
**Yury M. Andreev**, Institute for Monitoring of Climatic and Ecological  
Systems SB RAS (Russian Federation)  
**Valeriy A. Svetlichnyi**, Siberian Physical Technical Institute  
(Russian Federation)
- G Biophotonics  
**Yury V. Kistenev**, National Research Tomsk State University  
(Russian Federation)  
**Andrey M. Kabanov**, V.E. Zuev Institute of Atmospheric Optics SB RAS  
(Russian Federation)

# Introduction

The *International Conference: Atomic and Molecular Pulsed Lasers* (AMPL) is devoted to the physical processes in laser active media, new active media and pumping methods; new lasers development technologies; fundamental issues of laser physics; and non-coherent UV and VUV-radiation sources. One of the principal goals of the conference is the contiguity of fundamental and applied sciences. Therefore, much attention was paid to the application of lasers and excilamps in science, engineering, medicine and other areas of activity as well as the discussion of problems with laser and excilamp-based apparatus and to new optical technologies.

This year's conference was organized by:

- V.E. Zuev Institute of Atmospheric Optics SB RAS (Russian Federation)
- Institute of High Current Electronics SB RAS (Russian Federation)
- Institute of Monitoring of Climatic and Ecological System SB RAS (Russian Federation)
- National Research Tomsk State University (Russian Federation)
- National Research Tomsk Polytechnic University (Russian Federation)
- V.D. Kuznetsov Siberian Physical Technical Institute (Russian Federation)
- P.N. Lebedev Physical Institute SB RAS (Russian Federation)
- A.M. Prokhorov General Physics Institute (Russian Federation)

The scientific program for this year's conference included the following sessions:

- Gas and Plasma Lasers, Metal Vapor
- Photonics of Optical Materials, Optoelectronics
- Femtosecond Lasers and Laser Systems
- Laser Systems and New Laser and Optical Technologies, Laser Applications
- Non-coherent UV and VUV-radiation Sources
- Conversion of Laser Radiation, Optoelectronic Devices
- Biophotonics

We wish to thank our sponsors for their contribution to the conference's success:

- Russian Foundation for Basic Research (Russian Federation)
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AMPL was first held in Tomsk in 1992, and in 1995 it became a biennial scientific forum hosted in Tomsk. The AMPL agenda covers the following issues:

- Physical processes in gas lasers including: excimer lasers, metal vapor lasers, and plasma lasers
- Dye lasers and photo-processes in complex organic molecules, photonics of optical materials
- Incoherent UV and VUV sources
- Diffuse discharges initiated by runaway electrons
- Conversion of laser radiation
- Optoelectronic devices
- Laser systems and advanced laser optics technologies
- Applications of lasers in different fields of science and technology, including ecology, medicine, industry, scientific research, struggle against terrorism
- The creation of laser-based devices

Also included in the AMPL program were related issues such as research in non-laser pulsed UV sources, nonconventional isotope separation methods, optoacoustic devices, etc.; problems of femtosecond laser systems (since 2009), and a round-table discussion on bio-photonics (since 2015).

The conference also provides for special sessions. In particular, a special session devoted to diffuse discharges initiated by runaway electrons was organized two times (2011, 2013). Generally, about 200 reports are presented at the conference. The AMPL conference has gained wide acceptance in the scientific community involved with laser research, attracting scientists from different countries and cities within the Russian Federation, and this would be impossible without close cooperation with the Tomsk scientific and educational institutions.

Each conference is attended by students from National Research Tomsk State University and Tomsk Polytechnic University. As part of AMPL, an AMPL-SCHOOL conference of young scientists is held. During the conference, excursions are made to the scientific laboratories of institutes and universities in Tomsk.

This is the twelfth year of the conference, all of which have been chaired by Prof. V. F. Tarasenko from the Institute of High Current Electronics. The conference materials are published and can be found in issues of *Atmospheric and Ocean Optics (Optika Atmosfery i Okeana)*, the Proceedings of SPIE (Proc. SPIE. Vol. 2619



[1995]; Vol. 3403 [1997]; Vol. 4071 [1999]; Vol. 4747 [2001]; Vol. 5483 [2003]; Vol. 6263 [2005]; Vol. 6938 [2008]), *Quantum Electronics (Kvantovaya Elektronika)*, and the *Bulletin of the Tomsk Polytechnic University (Izvestia TPU)*.

The next AMPL conference in Tomsk will take place in September 2017.

**Victor F. Tarasenko**  
**Andrey M. Kabanov**

