

AMPL-2017
PULSED LASERS AND LASER APPLICATIONS

September 10–15, 2017
Tomsk, Russia

ABSTRACTS

GENERAL SPONSOR

Special Systems. Photonics, St. Petersburg, Russia

CONFERENCE ORGANIZERS

*Institute of Atmospheric Optics SB RAS
High Current Electronics Institute SB RAS
Tomsk State University
Tomsk Polytechnic University
Siberian Physical Technical Institute
General Physics Institute RAS
Institute of Monitoring of Climate and Ecological Systems SB RAS*

CONFERENCE SPONSORS

*Ministry of Education and Science of Russian Federation, Russia
Federal Agency for Scientific Organizations, Moscow, Russia
Russian Academy of Sciences, Russia
Siberian Branch of Russian Academy of Science, Russia
Russian Foundation for Basic Research, Moscow, Russia
Young Scientists Council IAO SB RAS, Tomsk, Russia
Laser Association, Russia
TOPAZ Research and Inculcation Enterprise, Tomsk, Russia
Crystaltechno LTD, Moscow, Russia
SP Equipment, Novosibirsk, Russia
CLZ Ltd, Moscow, Russia
Azimut Photonics, Moscow, Russia*

MEDIA SPONSORS

*Atmospheric and Oceanic Optics Journal, Tomsk, Russia
Photonics Journal, Moscow, Russia*

D-20

MOBILE MULTIWAVE AEROSOL FLUORESCENT LIDAR

A.N. Gritsuta¹, A.V. Klimkin¹, G.P. Kpkhanenko¹, A.N. Kuryak¹, K.Yu. Osipov¹,
Yu.N. Ponomarev¹, and G.V. Simonova²

¹*Institute of Atmospheric Optics SB RAS, 1 Zuev Sq., 634055 Tomsk, Russia, tosha@asd.iao.ru;*

²*Institute of Monitoring of Climatic and Ecological Systems SB RAS, 10/3 Akademicheskii Ave., 634055 Tomsk, Russia*

The task that faced the authors was construction of a mobile lidar complex for detection and investigation of aerosol-gas formations in the atmosphere. The complex must be constructed of commercial industrially produced components as much as possible. Many of engineering solutions had been previously worked out by the authors when the first lidar of such type was developed [1].

The complex is designed for study of capabilities of lidar sensing for remote investigation of aerosol-gas formations by their fluorescence and Raman scattering spectra, as well as topographic objects by fluorescence spectra of their surfaces. The complex has been tested in 2016, and may be applied for atmospheric sensing, for detection of potentially hazardous and dangerous admixtures above the cities, industrial and agricultural emissions, including emissions after disclosures of agricultural animal burial sites. The complex is mounted on a motor vehicle chassis and is energy-independent, and that allow using it for remote sensing of different objects in different natural conditions. Probing distance: 30000 m in elastic scattering channel and 5000 m in fluorescence channel.

1. *Makogon M.M.* Results of tests of the mobile scanning fluorescent-aerosol lidar // Atmos. Ocean. Opt. 2011. 24: 358. doi:10.1134/S1024856011040117.

D-21

CONDUCTIVE TRACKS FORMATION BY LASER SINTERING OF SILVER INK

R.M. Gadirov¹, A.V. Odod¹, S.Yu. Nikonov¹, A.I. Titkov², Yu.M. Yukhin², and N.Z. Lyakhov²

¹*Siberian Physical Technical Institute, 1 Novosobornaya Sq., 634050 Tomsk, Russia, grm882@ngs.ru;*

²*Institute of Solid State Chemistry and Mechanochemistry SB RAS, 18 Kutateladze, 630128 Novosibirsk, Russia, a.titkov@solid.nsc.ru.*

D-22

SPECTRAL STUDY OF ANOXYGENIC PHOTOTROPHIC MICROORGANISMS IN THE STRATIFIED RESERVOIRS OF THE KANDALAKSHA BAY AT THE WHITE SEA

A.A. Zhiltsova¹, A.V. Kharcheva¹, E.D. Krasnova², O.N. Lunina³, A.S. Savvichev²,
and S.V. Patsaeva¹

¹*Lomonosov Moscow State University, Faculty of Physics, 1 Leninskiye Gory Str., build. 2, 119991 Moscow, Russia, a.a.zhiltsova@gmail.com;*

²*Lomonosov Moscow State University, Faculty of Biology, 1 Leninskiye Gory Str., build. 12, 119991 Moscow, Russia, e_d_krasnova@mail.ru;*

³*Winogradsky Institute of Microbiology RAS, 7 k.2 60-letiya Otkryabrya Ave., 117312 Moscow, Russia, onlun@yandex.ru;*

The natural reservoirs found in different stages of isolation from the White Sea are a special group of hydrological objects. Their origin and evolution are associated with the elevation of the Kandalaksha Bay coast with the speed of about 4 mm per year. Stratified structure in such water