

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

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Crystaltechno LTD, Moscow, Russia

SP Equipment, Novosibirsk, Russia

CLZ Ltd, Moscow, Russia

Azimet Photonics, Moscow, Russia

MEDIA SPONSORS

Atmospheric and Oceanic Optics Journal, Tomsk, Russia

Photonics Journal, Moscow, Russia

Scientific & Technical Transitions



PUBLISHING

Tomsk, 2017

E-7

A PULSED DISCHARGE EXCILAMPS IN APOKAMP MODE

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First in the mixtures Xe-Cl₂ and Kr-Cl₂ plasma jets (apokamps), formed on bend of the channel of a pulse-periodic barrier discharge obtained. Experimentally shown that the presence of electronegative gases in the mixture is one of conditions for the formation of apokamp. The possibility of creating a source of ultraviolet radiation on the basis of apokamp formed in typical environments for excilamps of capacitive and barrier discharges.

The work is performed in the framework of the Russian Science Foundation (the Project No. 14-29-00052).

E-8

EMISSION SPECTRA OF APOKAMP-TYPE ATMOSPHERIC PRESSURE PLASMA JETS IN AIR, ARGON, AND HELIUM

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Emission spectra of atmospheric pressure plasma jets formed in the areas of strengthening of the electric field near the bends of potential channel of the pulse-periodic discharge and are studied. Plasma jets consists of a bright narrow branch (offshoot) connected with the discharge channel and with the diffuse jet - apokamp. It is shown that, in argon, apokamp emission spectra contain not only N₂ and N₂⁺, but also Ar lines. In emission spectra of apokamp in helium the N₂ and N₂⁺ bands are dominates, while offshoot emission consists on lines and bands of He, N₂, N₂⁺, O, and OH. We proposed that the surrounding air plays an important role in the formation of apokamp in helium and argon.

This study was supported by a grant of the Russian Science Foundation, Project No. 14-29-00052.

The work was performed in the framework of the State task for HCEI SB RAS, Project No. 13.1.3.

E-9

DEVELOPMENT OF A XeCl EXCILAMPS FOR AGRICULTURE AND STOCK FARMING

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The parameters of irradiation units based on electroluminescent XeCl excilamps developed in the optical radiation laboratory of High Current Electronics Institute SB RAS are presented. The results of studies of the action of XeCl excilamp radiation on animals and plants are summarized. It may be inferred that the irradiation units is convenient for compensation ultraviolet failure of animals and increase crop yields.

The work performed in the framework of IHCE SB RAS theme No. 13.1.3.