

IX International Symposium "Modern Problems of Laser Physics" (MPLP 2021)

Journal of Physics: Conference Series Volume 2067

Novosibirsk, Russia
22 – 29 August 2021

ISBN: 978-1-7138-5038-0
ISSN: 1742-6588

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Preface	
Peer Review Declaration	
Specifics of Using Multifrequency Pumping to Register CPT Resonances	1
<i>K N Savinov, A K Dmitriev, A V Krivetskii</i>	
About Calculation of the Ground-State Energy of the Helium Atom.....	5
<i>E V Baklanov, P V Pokasov, A V Taichenachev</i>	
Method for Stabilization of the Microwave Modulation Index in Order to Suppress the Light Shift of the Coherent Population Trapping Resonances.....	9
<i>V I Yudin, M Yu Basalaev, A V Taichenachev, D A Radnatarov, V A Andryushkov, S M Kobtsev</i>	
Effects of Size and Dimension in Optic Relaxation in Rb Vapor	15
<i>S Atutov, V Sorokin</i>	
Forced Mode Locking in a Semiconductor Laser.....	19
<i>V F Zakharyash, V M Klement'ev, E A Titov</i>	
Light Shifts in the Rubidium CPT Atomic Clock with Laser Current Modulation at 3.4 and 6.8 GHz	22
<i>S M Ignatovich, I S Mesenzova, M N Skvortsov, N L Kvashnin, V I Vishnyakov</i>	
Spectroscopic Properties of CrOx/Al2O3 Nanopowders Synthesized by Cw CO2 Laser Vaporization.....	32
<i>M G Baronskiy, A I Kostyukov, V N Snytnikov</i>	
Luminescence Performance of Laser Synthesized Al2O3:Eu3+ Nanophosphors Depending on Synthesis Conditions	39
<i>A Kostyukov, A Nashivochnikov, M Rakhmanova, V Snytnikov</i>	
High-Efficiency Mini-Slab Laser Based on Tm-Doped Double Tungstate Crystal.....	46
<i>S M Vatnik, I A Vedin, M D Kolker, A A Pavlyuk</i>	
Fluorescence Quantum Efficiency of Ti3+:Al2O3 at Cryogenic Temperatures and Excitation by Laser Diodes.....	50
<i>A Gribanov, G Nikolaev, M Mosin, D Yakovin, M Yakovin</i>	
Millimetre-Wave Range Optical Properties of BIBO.....	55
<i>N A Nikolaev, A A Mamrashev, V D Antsygin, D M Ezhov, D M Lubenko, V A Svetlichnyi, Yu M Andreev, V F Losev</i>	
Detection of THz Waves in GaSe:S Crystals by Femtosecond Laser Radiation with a Telecom Wavelength of 1.55 μm	59
<i>O N Shevchenko, N A Nikolaev, K A Kokh</i>	
Tunable Mid-Infrared Laser Sources for Trace-Gas Analysis	64
<i>D B Kolker, I V Sherstov, A A Boyko, B N Nyushkov, E Y Erushin, N Y Kostyukova, A I Akhmathanov, A Y Kiryakova, A V Pavluck</i>	
Study of Ne:He Plasma of a Periodically Pulsed Discharge for Optically Pumped Rare Gas Laser.....	72
<i>A P Torbin, A K Chernyshov, M I Svistun, P A Mikheyev</i>	

Effect of Terahertz Radiation on Intermolecular Interactions of Albumin Under Aerobic and Anaerobic Conditions.....	78
<i>E A Nemova, G G Dultseva, N A Nikolaev, O P Cherkasova</i>	
Coexistence of Light-Induced Thermocapillary and Orientational Effects in Thin Nematic Films with a Free Surface.....	83
<i>S.A. Shvetsov, A.S. Zolot'ko, G.A. Voronin, A.V. Emelyanenko, P.A. Statsenko, S.I. Trashkeev</i>	
Semiconductor Quantum Well Based Shutters for NIR Laser Mode-Locking with ~ GHz Repetition Rate.....	89
<i>N N Rubtsova, A A Kovalyov, D V Ledovskikh, V V Preobrazhenskii, M A Putyato, B R Semyagin, S A Kuznetsov, V S Pivtsov</i>	
Theoretical Bases of Combined Nonlinear Optical Demodulator-Amplifier for Broadband Microwave Photonics System	95
<i>G N Nikolaev, S L Mikerin</i>	
Controlling the Type and Intensity of Low-Frequency Waves Generated by Laser Plasma Clots in a Force Tube of Magnetized Plasma	102
<i>A G Berezutsky, V N Tishchenko, A A Chibranov, I B Miroshnichenko, Yu P Zakharov, I F Shaikhislamov</i>	
Laboratory Modeling of a Field-Aligned Currents System Generated by a Flow of Inner Magnetospheric Plasma.....	108
<i>A Chibranov, A Berezutsky, M Efimov, Y Zakharov, I Miroshnichenko, V Posukh, M Rumenskikh, P Trushin, I Shaikhislamov</i>	
On the Opportunity of Laser Plasma Simulation of Plasma Jets Formation in Moderate Magnetic Fields ~ kGs.....	113
<i>Yu P Zakharov, V P Neznamov, V A Terekhin, I F Shaikhislamov, V G Posukh, P A Trushin, A A Chibranov, A G Berezutsky, M S Rumenskikh, M A Efimov</i>	

Author Index