

XVII International Youth Scientific School on Actual Problems of Magnetic Resonance and its Applications 2014

Journal of Physics: Conference Series Volume 560

**Kazan, Russia
22-27 June 2014**

Editors:

**M.S. Tagirov
A.S. Nizamutdinov**

V.V. Semashko

**ISBN: 978-1-63439-669-1
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.

Copyright© by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2015)

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: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Table of contents

Volume 560

XVII International Youth Scientific School on Actual Problems of Magnetic Resonance and its Applications
22–27 June 2014, Kazan, Russia

Accepted papers received: 5 November 2014

Published online: 24 November 2014

Preface

011001

[XVII International Youth Scientific School on Actual Problems of Magnetic Resonance and its Applications](#)

011002

[Peer review statement](#)

Papers

012001

[Growth of solid solutions with colquiriite structure \$\text{LiCa}_{0.2}\text{Sr}_{0.8}\text{AlF}_6\$: \$\text{Ce}^{3+}\$](#) OPEN ACCESS A A Shavelev, A S Nizamutdinov, V V Semashko and M A Marisov 1

012002

[Ultrashort pulsed UV lasers based on the \$\text{Ce}^{3+}:\text{LiCaAlF}_6\$ and \$\text{LiLuYF}_4:\text{Ce}^{3+}\$ crystals](#) OPEN ACCESS O R Akhtyamov, V V Semashko, A S Nizamutdinov and M A Marisov 6

012003

[Laser-like effects and upconversion fluorescence temporal dynamic in \$\text{Tm}^{3+}\$, \$\text{Yb}^{3+}\$ doped \$\text{YF}_3\$ single crystals](#) OPEN ACCESS B N Kazakov, V V Semashko, A V Lovchev and A K Naumov 10

012004

[TERS microscopy as a probe for visualizing the orientation of chromophores embedded in the glassy polymers](#) OPEN ACCESS K L Nefedyeva, S S Kharintsev, A I Fishman and M Kh Salakhov 14

012005

[Determination of the size of nanoparticles in photonic nanostructures from AFM images](#) OPEN ACCESS A A Akhmadeev and M Kh Salakhov 19

012006

[Self-energy function of quantum-dot states and resonance fluorescence](#) OPEN ACCESS R Kh Gainutdinov, M A Khamadeev, M R Mohebbifar and A A Mutygullina 23

012007

[Singular behavior of the photon density of states and the self-energy function of an electron in photonic crystal](#) OPEN ACCESS R Kh Gainutdinov, M A Khamadeev, D N Avramenko, K A Ziyatdinova and M Kh Salakhov 27

012008

[Laser field distribution near inclined taper optical antenna](#) OPEN ACCESS A R Gazizov, A M Rogov, S S Kharintsev and M Kh Salakhov 31

012009

[New approach of decomposition of complex spectral contours based on particles swarm optimization](#) OPEN ACCESS D Z Galimullin, M E Sibgatullin, D I Kamalova and M Kh Salakhov 36

012010

[Ce³⁺Pr³⁺:LiY_{0.3}Lu_{0.7}F₄ Mixed Crystal as a Perspective Upconversionally Pumped UV Active Medium](#) OPEN ACCESS V G Gorieva, V V Semashko, S L Korableva, M A Marisov and V V Pavlov 40

012011

[Toxicity of laser irradiated photoactive fluoride PrF₃ nanoparticles toward bacteria](#) OPEN ACCESS M S Pudovkin, S L Korableva, A O Krashennicova, A S Nizamutdinov, V V Semashko, P V Zelenihin, E M Alakshin and T A Nevzorova 44

012012

[Up-conversion luminescence of \$\text{LaF}_3:\text{Pr}^{3+}\$ crystal](#) OPEN ACCESS O A Morozov, A K Naumov, A V Lovchev and E Yu Tselishcheva 49

012013

[Photoconductivity of \$\text{SrAlF}_5\$ crystals doped with \$\text{Ce}^{3+}\$ ions](#) OPEN ACCESS V V Pavlov, V V Semashko, A N Yunusova and M A Marisov 53

012014

[Photodynamic processes in \$\text{LiCaAlF}_6:\text{Ce}^{3+}\$ UV active medium](#) OPEN ACCESS A I Galiev, V V Semashko, O R Akhtyamov, S A Shnaidman, M A Marisov and A A Shavelev 57

012015

[The effect of chromophores concentration on the nonlinear optical activity of methacrylic copolymers with azochromophores in the side chain](#) OPEN ACCESS M A Smirnov, A S Mukhtarov, N V Ivanova, T A Vakhonina, V V Semashko and M Yu Balakina 61

012016

[Laser characteristics of active medium \$\text{LiLu}_{0.7}\text{Y}_{0.3}\text{F}_4:\text{Ce}^{3+}\$ in ultra-short pulse mode](#) OPEN ACCESS I I Farukhshin, A S Nizamutdinov, V V Semashko and S L Korableva 65

012017

[The development of polymer laser-active media with improved performances](#) OPEN ACCESS R Idrisov, V Serova, I Farukhshin, A Nizamutdinov, V Semashko, A Lovchev and A Naumov 69

012018

[Measurements of thermal properties of crystals \$\text{CaF}_2:\text{Ce}^{3+}\$ activated \$\text{Yb}^{3+}\$ and \$\text{Lu}^{3+}\$ ions](#) OPEN ACCESS N F Rakhimov, A S Nizamutdinov, V V Semashko, P A Popov and M A Marisov 74

012019

[Distribution coefficient of \$\text{Pr}^{3+}\$ ions in crystals of solid solutions \$\text{LiF-LuF}_3\text{-YF}_3\text{-PrF}_3\$](#) OPEN ACCESS A A Shavelev, A S Nizamutdinov, V V Semashko, S L Korableva and V G Gorieva 79