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Front Matter: Volume 8700

, "Front Matter: Volume 8700," Proc. SPIE 8700, International Conference
Micro- and Nano-Electronics 2012, 870001 (8 January 2013); doi:
10.1117/12.2019787

SPIE.

Event: International Conference on Micro-and Nano-Electronics 2012, 2012,
Zvenigorod, Russian Federation

PROCEEDINGS OF SPIE

International Conference Micro- and Nano-Electronics 2012

Alexander A. Orlikovsky
Editor

1–5 October 2012
Zvenigorod, Russian Federation

Organized by
Institute of Physics and Technology, Russian Academy of Sciences (Russian Federation)

Sponsored by
Russian Academy of Sciences
Russian Foundation for Basic Researches
TechnoInfo Ltd. (United Kingdom)
NIX Company (Russian Federation)

Published by
SPIE

Volume 8700

Proceedings of SPIE 0277-786-786X, V.8700

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

International Conference Micro- and Nano-Electronics 2012, edited by Alexander A. Orlikovsky, Vladimir F. Lukichev,
Proc. of SPIE Vol. 8700, 870001 · © 2012 SPIE · CCC code: 0277-786/12/\$18 · doi: 10.1117/12.2019787

Proc. of SPIE Vol. 8700 870001-1

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *International Conference Micro- and Nano-Electronics 2012*, edited by Alexander A. Orlikovsky, Proceedings of SPIE Vol. 8700 (SPIE, Bellingham, WA, 2012) Article CID Number.

ISSN: 0277-786X

ISBN: 9780819494870

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445

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Dr. Alexander V. Tsukanov

Dipl. Eng. Lidiya M. Besschastnova

Dipl. Eng. Irina Yu. Lukianova

Dipl. Eng. Valeriya P. Sosina

Session Chairs

Plenary Session I

Vladimir F. Lukichev, Institute of Physics and Technology (Russian Federation)

Plenary Session II. Quantum Informatics I

Vladimir F. Lukichev, Institute of Physics and Technology (Russian Federation)

Plenary Session III

Vladimir F. Lukichev, Institute of Physics and Technology (Russian Federation)

Micro- and Nanodevices I

Vladimir V. Vyurkov, Institute of Physics and Technology (Russian Federation)

Quantum Informatics II

Sergey P. Kulik, Lomonosov Moscow State University (Russian Federation)

Simulation and Modeling I

Igor I. Abramov, Belarusian State University of Informatics and Radioelectronics (Belarus)

Superconducting Structures and Devices

Mikhail Yu. Kupriyanov, Lomonosov Moscow State University (Russian Federation)

Quantum Informatics III

Sergey A. Moiseev, Kazan Physical-Technical Institute (Russian Federation)

Simulation and Modeling II

Vladimir V. Vyurkov, Institute of Physics and Technology (Russian Federation)

Advanced Lithography

Vladimir F. Lukichev, Institute of Physics and Technology (Russian Federation)

Quantum Informatics IV

Leonid E. Fedichkin, Institute of Physics and Technology (Russian Federation)

Workshop Silicon-on-Insulator I

Alexander A. Orlikovsky, Institute of Physics and Technology (Russian Federation)

Workshop Silicon-on-Insulator II

Alexey N. Nazarov, Institute of Semiconductor Physics (Ukraine)

Quantum Informatics V

Eduard B. Fel'dman, Institute of Problems of Chemical Physics (Russian Federation)

Magnetic Micro- and Nanostructures

Mikhail A. Chuev, Institute of Physics and Technology (Russian Federation)

Micro- and Nanodevices II

Vladimir V. Vyurkov, Institute of Physics and Technology (Russian Federation)

Metrology and Characterization

Konstantin V. Rudenko, Institute of Physics and Technology (Russian Federation)

Micro- and Nanoelectronic Structures I

Igor G. Neizvestnyi, Institute of Semiconductor Physics (Russian Federation)

Plasma and Ion Beam Technologies I

Konstantin V. Rudenko, Institute of Physics and Technology (Russian Federation)

Quantum Informatics VI

Farid M. Ablayev, Institute for Informatics (Russian Federation)

Micro- and Nanoelectronic Structures II

Oleg S. Trushin, Institute of Physics and Technology (Russian Federation)

Micro- and Nanoelectromechanical Systems

Sergey P. Timoshenkov, National Research University of Electronic Technology (Russian Federation)

Quantum Informatics VII

Yuri I. Ozhigov, Lomonosov Moscow State University (Russian Federation)

Plasma and Ion Beam Technologies II

Alexander M. Efremov, Ivanovo State University of Chemistry and Technology (Russian Federation)

Introduction

The volume contains selected papers presented at the International Conference "Micro- and Nanoelectronics 2012" (ICMNE-2012) which has been held in Zvenigirod, Moscow Region, Russia during October 1-5, 2012. ICMNE is a biannual conference covering the main fields of micro- and nanoelectronic technologies and device physics. Since 1992 the Institute of Physics and Technology of the Russian Academy of Sciences is the permanent organizer of ICMNE. From 2003 ICMNE is an SPIE-affiliated conference.

ICMNE-2012 included the Extended Session "Quantum Informatics-2012" and the Workshop "Silicon-on-Insulator-2012". The ICMNE-2012 scope contained such scientific and technological fields as micro- and nanoelectronic materials and films, technologies and equipment, metrology, physics and technologies of micro- and nanodevices, simulation and modeling, silicon-on-insulator and low-dimensional structures, quantum informatics. ICMNE-2012 included three plenary sessions and 21 topical sessions covering the following areas of focus:

- Advanced Lithography
- Magnetic Micro- and Nanostructures
- Metrology and Characterization
- Micro- and Nanodevices
- Micro- and Nanoelectromechanical Systems
- Micro- and Nanoelectronic Structures
- Plasma and Ion Beam Technologies
- Quantum Informatics
- Silicon-on-Insulator
- Simulation and Modeling
- Superconducting Structures and Devices

The scientific program was based on invited and contributed papers from the scientists employed at European and Siberian Regions of Russia, Ukraine, Belarus, United Kingdom, France, United States, Japan, and Korea. The invited lectures on the current achievements and challenges in the contemporary microelectronics were delivered by the scientists from France, Belgium, Germany, Japan, Australia, and Russia. The contributions to the sessions of the Conference were made by academic institutions, universities as well as from the industry. More than 120 contributions were discussed at oral presentations; about 120 others were presented as posters.

We hope that helpful discussions of these works at the sessions of the Conference and during personal contacts between attendees will promote the research

activity in microelectronic community. Additional information about ICMNE-2012 can be found at the conference website <http://www.icmne.ftian.ru>

Alexander A. Orlikovsky