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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