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The Polarization Phenomena in Materials with Metastable Electrical Polarization in a View of Effect at Anomalous Electron

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Darintsev O. V., Migranov A. B. The Assembly Process of Hybrid MEMS on the Basis of Three-Dimensional Reconstruction of the Technological

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Aristov V. V., Mordkovich V. N., Maltsev P. P. "Silicon-on-Insulator"

Technology in Microsystems 41 This paper discussed the prospects of "Silicon – On-Insulator" (SOI)

technology in creation of microsystems with different function (such as sensors sensitive elements and ASIC, microelectromechanical systems, microfotonics elements) and describes the successful examples of practical SOI technology realization in microsystems.

Ageichenko A. S., Tochitsky Ja. I., Vasiliev A. A., Yesman V. M. Accuracy of the Photolithography Processes and Photolithography Equipment 47

Basic parameters of micro- and nanotechnology depends on geometric accuracy of the structure formation processes, which are determined by the accuracy of the photolithography processes and equipment. Between the two parameters: accuracy of feature size (CD) and overlay error, overlay error is the decisive one. In this article methods to reduce this error in photolithography and photolithography equipment are discussed.

Arzhadeeva E. A., Moiseev P. D., Malykh V. N. The Programmable Widerange Pulse Shaper With the Use of "System-on-Chip" Technology

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New opportunities of electronic design automation development with use of "system on chip" technology are viewed in this article. The design technology route of the soft IP-core of a pulse shaper is given, opportunities in support of core's implementation parameters as reprogrammable logic integrated circuit and as the Application Specific Integrated Circuit (ASIC) are compared. Examples of its implementation are given on the base of macros library of Field Programmable Gate Array (FPGA) Spartan-3 with use of graphic interface ISE 7.1i and with use of Verilog behavioral model. The example of electronic design implementation - the pulse generator is given. Achievable characteristics and an errors are proved. Authors consider, that in this article the following positions and results are new: the behavioral model of the pulse shaper is developed, the soft IP-core implemented, functional and timing parameters of IP-core are verified in silicon and in electronic design automation structure.

Kostsov E. G., Kamvshlov V. F. Fast Microelectromechanical

It is considered the operational principle of a microelectromechanical micro-valve, based on the use of the effect of an electrostatic rolling of metallic films on the surface of a ferroelectric. These micro-valves, created by means of microelectronic technology, differ in high operating speed (microsecond range), capability to maintain a high pressure drop, manufacturability. Theoretical and experimental data, that characterize the operating process of the micro-valve, are given.

In article the review of the new small-sized integrated inertial systems on micro-electromechanical sensors, their characteristics and variants or application in resulted. Systems are developed by employees of MSTU n.a. Bauman, under the characteristics have no analogues in the world market. Now the batch production of such systems is adjusted.

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