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Seisyan R. P. *EUV Lithography as Means of Ulsi Production and an Instrument of nanotechnologies*

Analytical review of the ideas and the current state of the Extreme Ultraviolet (EUV) nanolithography, as well as Deep Ultraviolet (DUV) lithography, with elements of the original study is presented. The key factors having an influence on photolithography process resolution like wavelength and numerical aperture dependences, along with reduction possibilities of the "technological" coefficient in the expression for a minimal stripe resolved by photolithography are considered. The data on development of the native model of the Experimental Nanolithography Tool aimed at most high resolution are presented. Limiting resolution of the method of EUV Lithography is estimated as well as prospects of further achievement of the several nanometers resolution necessary for creation of any nanostructure is estimated.

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Nepochatenko V. A., Kudzin A. Y. *The Equations 90° Domain Walls a Coordinate System of Tetragonal Phase in BaTiO₃*

The method of determination of the equations domains walls is proposed in a coordinate system paraphase in ferroelastics and multi-axial ferroelectrics. The equations 90° domains walls in barium titanate are obtained and is shown that is possible formation of 4 types of structural domains, to which correspond 12 orientations states and 24 electric domains in this crystal.

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served in experiment. This effect can be explained if to take into account the emission of electrons from contacts to conducting channel of quantum wire.

Rogatkin Yu. B. *Systematic Design of Analog-Digital IP Blocks*

This paper describes the design of analog-digital IP blocks and introduces a design methodology that can help to bridge the gap. This paper describes the design of a 12-b 20-Msample/s pipeline analog-to-digital converter (ADC) implemented in 0,25- μ m double-poly triple-metal CMOS process for example.

Is shown, that major factors influencing on a condition anisotropic plasma chemical of etching are: common pressure of a gas mix, partial of pressure of each of components and size given up to a substrate of HF-capacity. The vertical position of walls of contact windows in dioxide of silicon with anisotropic plasmachemical etching is provided with common pressure of a gas mix octafluoropropane (Chladon-218) — oxygen 4–8 Pa and contents of oxygen, in relation to octafluoropropane 2–4 vol. %.

Kashtankin I. A., Gurin N. T. *Temperature Characteristics of Bipolar Silicon N-shaped Devices with Guided I–V Characteristics*

The temperature models of bipolar silicon N-shaped devices with guided I–V characteristics were developed. The temperature changes cause the increasing of the max current in the output I–V characteristics. The results of modeling correspond to experimental data.

Potygalova A. S., Soltan I. E., Tkachev D. F., Khapaev M. M. *Practical Technique for Reduced-Order Modeling of RLCK Circuits Based on Krylov Space Methods*

In this paper, we present an implementation of model order reduction (MOR) for resistance-inductance-capacitance (RLCK) network. The algorithm generates guaranteed-passive models using numerically stable and efficient Krylov-subspace iterations. A result of reduction algorithm is a small network whose port behavior is similar to that of large RLCK-network. Further it is shown how to reduce a model via congruence transformations of matrix pencil. This paper presents some results of comparison simulation for full and reduced networks.

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E-mail: nmst@zknet.ru; <http://www.microsystems.ru>

Адрес редакции журнала: 107076, Москва, Стромынский пер., 4/1. Телефон редакции журнала (495) 269-5510. E-mail: it@novtex.ru; nmst@zknet.ru

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