

**Tarnavsky G. A., Anishchik V. S.** *Processor System Solvers of Nanomod Program Complex* . . . . . 6

The brief description of main solvers of NanoMod suite for computer-aided design of nanostructured semiconductor materials is given.

**Keywords:** nanoelectronics, semiconductor materials, computer-aided design, processor system solvers.

**Kovalevsky A. A., Strogova A. S., Plyakin D. V., Borisevich V. M.** *Study of Highly Ordered Germanium Nanocluster's Self-Organization in the Process of Polycrystalline Silicon Doped by Germanium Films Deposition* . . . 14

Using methods of atomic-forced microscopy and combination scattering of light by optical phonons in germanium clusters the characteristic features of formation of self-organized germanium (Ge) clusters and solid solution SiGe first formed in the regime of deposition of subfine polycrystalline films of silicon doped by Ge on nanosized dielectrics' films are studied. Interrelation of form, size and density of nanoclusters' (NC) of Ge with conditions of their self-organization is investigated. The influence on the process of self-organization of clusters of interdiffusive processes significant at high temperatures of deposition and doping of polycrystalline silicon (PCS) is determined. The principal possibility to manage the geometric parameters of self-organizing NS (nanoislets) by choosing conditions of their self-organization is shown.

**Keywords:** nanoclusters, dislocation, monosilan, monogerman.

**Rekhviashvili S. Sh., Shomahov Z. V., Karmokov A. M.** *Acoustic Emission at the Probe — Metal Surface Interaction* . . . . . 19

The acoustic emission at a blow of solid microprobe (corundum) on metal surface (Pb, Al, Cu, Ta) is experimentally investigated. Measurements have shown that acoustic emission intensity increases in proportion to microprobe oscillations amplitude that agrees with theoretical representations. Acoustic emission at probe-surface interaction can be used for diagnostics of viscoelastic properties of materials and images formation in atomic force microscope.

**Keywords:** blow of probe on solid state surface, acoustic emission, acoustic velocity, metals, atomic force microscope.

**Kamentsev K. E., Ostashchenko A. Yu., Fetisov L. Yu.** *Influence of Conductivity on Frequency Characteristics of Magnetoelectric Voltage in a Multilayer Ferrite-Piezoelectric Film Structure* . . . . . 23

Magnetoelectric effect in a multilayer structure fabricated by the thick film ceramic technology was investigated. The structure consisted of nickel-zinc ferrite and lead zirconate-titanate layers. It was shown that frequency dependence of the layers conductivity leads to formation of the maximum in the frequency dependence of magnetoelectric voltage generated by the structure under external field conditions. Investigated structures are promising for design of magnetic field sensors.

**Keywords:** magnetoelectric effect, film structure, piezoelectric, ferrite, magnetic field sensors.

**Egorov V. V.** *Surface Microroughnesses Influence on the Characteristics of the Images in Optic Precise Devices. The Scalar Approach. Part 2.* . . . . . 26

There are statistical fits of field scattered by rough plane absolute soft surface is calculated in that article. It is indicated that field calculated by the integral equation method is differs of Kirhgoﬀ's approach field.

**Keywords:** boundary problem, integral equation method, radius of correlation of irregularities, boundary field, scattering field.

**Kartashev V. A.** *Investigation of Autonomous Microvehicle Mobility by Scale Factor Method* . . . . . 32

The paper investigates mobility of microvehicles by scale factor method. It is shown that motion conditions for such devices are more complicated than for their full-scale prototypes. It restricts mobility of those microvechicles which based on traditional technology.

**Keywords:** autonomous microvehicle, movability, scale factor method.

**Malyutin D. M., Malyutina M. D.** *Micromechanical Accelerometer Direct Transformation.* . . . . . 35

Dynamic characteristics and an opportunity of correction of dynamic properties micromechanical accelerometer direct transformation are considered. It is shown, that correction of dynamic properties accelerometer allows to reduce a dynamic error of a measured signal.

**Keywords:** micromechanical accelerometer, correction of dynamic properties, a dynamic error.

**Yashin K. D., Osipovich V. S., Medenko P. V., Login V. M.** *Microsystem Technics for Cosmic Satellites* . . 38

This review considers questions of designing of microcosmic satellites due to application of microsystem technics.

**Keywords:** microsatellite, nanosatellite, picosatellite, construction of microcosmic satellites, cosmic group.

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