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Alekhin V. A. One-dimensional Micro-Optical-Electro-Mechanical
Systems and Their Application in Devices of display and Registration
of the Information

Principles of construction and functioning of projective displays and printers with one-dimensional MOEMS on a basis elastomer and GLV-technology are considered.

The research of combined work of IP-blocks (in SOC) and local synchronization devices included in these blocks on high frequencies is carried out in this article. The recommendations on synchronization signals supply at all SOC design stages are given. The basic directions of development of local synchronization devices circuitry are allocated. The basic elements of IP-blocks synchronization subsystems are described. New possible effective decisions and practically implemented circuits are shown.

By means of devises instrument-technological simulating modeling is explored lateral bipolar magnetotransistor (BMT), formed in the well at the outerconnected of substrate with the well. Shown that in the optimized structure BMT occurs a shaping the flows of carriers of charge and their volumetric recombination, which are changed at the influence of magnetic field. Origin concentration-recombination sensitivity BMT gives a motivation a mechanism of arising two signs relative magnetosensitivity on the current. Choice of parameters of structure and state of working BMT in accordance with the install mechanism of sensitivity allows raise relative sensitivity on the current before 30 T⁻¹.

A model of temperature distribution in a convection-based microaccelerometer had been developed. Influence of dimensions of the cavity and temperature of a heater on linearity and sensitivity of microaccelerometer had been analyzed.

The images of the silicon test object have been studied. An image for in-line hologram for hard X-ray (8—18 KeV) is presented. The transmission of a hologram image for hard X-ray radiation using Fresnel phase zone plate has been investigated. The experimental investigations have been conducted on the station BL29XU, Spring-8.

Thin film deposition methods for synthetic opal substrate are analysed. Vacuum evaporation and ion-plasma sputtering and ion deposition are selected. Multi-source vacuum tool with ion-beam source, magnetron sputtering system and are evaporator is worked out. Opal matrix surface with thin film coatings topography and one's electric resistance and laser beam reflection are examined.

Two reflectometers in IPM RAS are described. One enables investigation of the angular and spectral characteristics of mirrors with any shape of a reflecting surface in the 0.6-20 nm spectral range. The other, designed especially to study the influence of powerful EUV sources on the reflecting characteristics of multilayer mirrors and provides a resolution of the reflection coefficient variation at a level of 0.1%.

Balabanov D. E., Nikitov S. A. Investigation of 2D-micromagnetic Stray Fields by Computer Magneto-Optic Visualization Method. . . 41

The new method for definition of spatial distribution of micromagnetic stray fields by computer magneto-optic visualization is developed and approved. The factors defining magneto-optic visualization system sensitivity are found and analyzed. The analysis considers Faraday rotation angle and the out-of-plane magnetic field. The optimal conditions for registration and observation of domain structures images with CCD camera are defined. The theoretical limit of Faraday rotation angle sensitivity is found.

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