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**Voitsekhovskii A. V., Nesmelov S. N., Kulchitsky N. A., Kulchitsky A. N., Melnikov A. A.** *The Threshold Characteristics GeSi/Si Heterojunction Detectors with the Internal Photoemission in a Spectral Range 8–12* . . . . . 2

The questions of creation of infra-red detectors on epitaxial heterostructures  $Ge_xSi_{1-x}/Si$  are considered. Calculation of threshold characteristics of photoemission detectors in a spectral range 8–12 microns and the analysis of opportunities of their optimization is carried out by change of their parameters.

**Rynkov D. O., Checha V. V., Schuka A. A.** *One-Electron Devices* . . . . . 8

Modern scientific and technical progress is determining evolution of electronics. The latest advances in field of electronics binding with physics of nanostructure, theirs technology of producing and creating new devices having new functional potentialities. One of these technologies there are creating one-electron devices. This work devote to creating one-electron transistors and devices are based of this.

**Kondratjev A. S., Mitrenin V. B., Senchik K. Ju., Vasiljev N. F., Jukhnev A. D.** *Pump for Mechatronical Perfuzing Medical Systems* . . . . . 24

The questions of mechatronical systems design of medical purpose and construction of modules entering into their structure on the basis of principle of "open architecture" are considered. The application of the integrated transmitters and actuators in combination with microprocessor technology ensures the simplicity of modification and the wide spectrum of the mechatronical systems use.

**Altshuller G. M., Vaks V. L., Gaikovich K. P.** *Microwave Sounding of the Inner Temperature at the Heating and Cooling of Living Tissues* . . . . . 28

For the sounding of the subsurface temperature profile dynamics at the heating and cooling of the human living tissues the method of near-field radiometry that uses the dependence of the depth of the received emission formation is applied. The problems of the temperature distribution retrieval at the measurements of the biological tissues in water and in air are reduced to the solution of the integral Fredholm equations of the 1-st kind.

**Burdakov S. F., Kirichenko V. V., Korotynsky A. V., Smoljnikov B. A., Chistjakov V. M.** *Classification of Foreign Mini- and Microrobotic Systems of Military Assignment on the Basis of Lattice-Functional Approach* . . . . . 37

The necessity of complex approach for classification of mini- and microrobotic systems with regard for functional dimensional and constructible-technological indications is shown.

The definitions of robotic systems (RS) are given. They are based on prevalent influence of technological development level of element base on technical look of the system as a whole. In this case the trends of the dimensional classification RS of the different forms of based (the aerial, water, land and cosmic) permit to detachments of systems in limits of class agreed upon the medium of functioning.

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