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Keywords: micromechanical devices, tests, gages, gages of angular speed, acceleration gages

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Keywords: complex-profiled silicon membrane, pressure sensor element, gauge pressure sensor, overload capacity

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Keywords: cathodoluminescence semiconductors, scanning electron microscopy, recombination

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Keywords: resistive switching effect, atomic layer deposition, non-volatile memory, hafnium oxide

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Keywords: flexural edge wave, multi-layered graphene, AAA, ABA, ABC-stacking, density, thin elastic plate, Young's modulus, Poisson's ratio, flexural stiffness, Kirchhoff theory of plate bending, Harrison's quantum-chemical method

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Keywords: recrystallization, porous aluminum oxide, thermal annealing, atomic force microscopy, optical microscopy

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The results of scientific work performed by IUHFSE RAS are reported in the paper. Metamorphic nanoheterostructures for 57–64 GHz power amplifier and low-noise amplifier MMICs are fabricated. Characteristics of manufactured test transistors are studied.

Keywords: monolithic integrated circuit, metamorphic nanoheterostructure, low-noise amplifier, power amplifier

Bobrinetskiy I. I., Bessonova A. V., Komarov I. A., Malovichko A. M., Nazarkin M. Yu., Nevolin V. K., Rimarenko V. S., Tsarik K. A. Sensitive Properties of Percolating Networks of Carbon Nanotubes and ZnO Nanorods Investigation. 32

In this article authors suggested a method of nanoconductor based sensor structures sensitivity improvement. This is based on the usage of heterogenic composite of carbon nanotubes and semiconducting nanorods. Structure with composite based sensing area was developed. A dependence of sensor resistance and response on ammonia vaporous, composite specific surface on carbon nanotube and ZnO proportion in composite. It was shown that sensitivity decrease ten times when nanotube concentration changes from 60 to 80 %. This result can be used in "electronic nose" systems development.

Keywords: specific surface area, ammonia, gas sensor

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Keywords: underwater communication systems, LED/laser emission, sensors based on electric double layers, high-penetrating component of the emission

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Keywords: inertial system, satellite navigation system, microelectromechanical system, data complexification, intellectual navigation system

Abramov I. I. The Brain is an Object of Organic Hybrid Nanoelectronics, or Another Point of View. Part IV. 49

A new interpretation of human brain as an organic hybrid nanoelectronics object created by Nature is presented. The nearest analogue in artificial electronics is an integrated circuit of micro- and nanoelectronics. Therefore the comparison of the neuronal circuits of the brain with integrated circuits was made and their basic differences were determined. The proposed interpretation and its consequences allow, on the one hand, to analyze the principles of the brain functioning more deeply, and, on the other — to suggest a complex approach of brain investigation, based on multilevel simulation combined with experimental methods. In the part IV the answer to the following question is presented: "What's further?"

Keywords: the brain, nanoelectronics, an electronic interpretation

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