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Optimization methodology for integral pressure-temperature multisensors is presented aimed at higher linearity of tensor-sensitive membrane elements in low-pressure cases and lowering cross-sensitivity for temperature sensitive elements.

Based on the original array crystals the methodology is highly effective.

The minimal number of extra masks needed is determined only by the modern series multisensors (nomenclature).

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The paper presents the results of the STM investigation of the Si-SiO₂-polymer system on the air. Earlier the Si surface modification with the use of STM was explained by the irreversible oxidization. The modern techniques of the surface etching and passivation together with the existence of the uncontrolled adsorbate layer hamper obtaining of the reliable information about the surface. In order to exclude surface adsorption, desorption and oxidization the polymer coating was used. Earlier it was shown that the polyheteroarylenes films of less than 100 nm thick deposited on the conductive surface can be studied with the use of STM. The specific emission "pseudorelief" was registered in these experiments. The electrophysical properties of thin films of these polymers is known to strongly affected by the processes on the metal-polymer interface which makes it possible to use these films as specific sensors for charge phenomena.

It was shown that modification of the pseudorelief is possible in certain scanning modes. These modes are near the same as those for the initial Si-SiO₂ surface. When the positive voltage is applied to the sample, depressions are registered, in the opposite polarity "protrusions" are observed. The conditions for "rewriting" of the pseudorelief on the same place were found. The electronic model of the phenomenon is discussed. The model considers tunneling of the charge into the polymer through the oxide layer with its subsequent capturing by the polymer traps. The captured charge influences the tunneling parameters of STM. This phenomenon makes it possible to use STM for recording, erasing and reading of information on the Si-SiO₂-polymer structure.

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Подписку за рубежом принимают:

For foreign subscribers:
ЗАО МК-Периодика. E-mail: info@periodicals.ru;

Editor-in-Chief Ph. D. Petr P. Maltsev
Index 79493.

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