

The invention relates to the electronics, in particular to the technology of materials manufacturing for electronics and instrument engineering, namely to the ordered compound nanostructures.

The nanostructure includes current-conducting nanothreads in common dielectric isolation. Novelty consists in that the nanostructure is made filiform and contains nanothreads, closely packed in microbeam, the nanothreads being made of metallic, magnetic, semimetallic, semiconducting and/or superconducting material in industrial dielectric isolation, at the same time the dimension of the cross-section of each nanothread is of 1...500 nm, and the thickness of its isolation is of 1...2000 nm.

The current-conducting threads may be made of several groups of diverse materials.

The nanothread space in dielectric isolation may be filled up with metallic, semimetallic, semiconducting, superconducting or dielectric material, the melting and softening temperature of which is lower than the nanothread maximum melting temperature.

The process of nanostructure manufacture includes the formation of a blank, containing a thread-forming core, place into a glass tube, heating of the blank up to the melting of the thread-forming core and softening of the glass tube, extending of the microthread and subsequent cooling thereof. Novelty of the process consists in that the thread-forming core is made in the form of a closely packed beam of current-conducting microthreads in individual dielectric isolation, the common diameter of which is of 1...25 mm and is equal to the internal diameter of the glass tube, and the heating is carried out up to the melting and softening of each of the microthreads and softening of the dielectric isolation thereof.

Claims: 7

Fig.: 3