

Radiation effect on Zn nanotubes

Ion implantation in nanostructured materials is one of the priority tasks in modern materials science. An increase in the electron-hole conductivity of nanostructures can be achieved by ion implantation is. The energy losses of the implanted ions are due to the loss of energy in collisions with nuclei and electrons. The use of ionizing radiation is an effective tool for stimulating a controlled modification of structural and conductive properties of nanomaterials. The paper presents the results of studies of the influence of irradiation with Ar+8 ions with an energy of 1.75 MeV/nucleon with a fluence from 1×10^9 to 5×10^{11} ion/cm² on structural and conductive properties of Zn nanotubes. Using SEM, X-ray diffraction and EDA methods it was established that irradiation with Ar+8 ions makes it possible to modify the crystal structure of nanotubes, increasing their conductivity and decreasing the resistance of nanostructures, without destroying the structure.

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Track Classification: Condensed Matter Physics