

4H-SiC detectors for VUV spectral range

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Modern development of Astronautics, the study of atmospheres of planets and their satellites, the study of interplanetary space, radiation monitoring of accelerators are keen on registration of VUV in the wavelength range 10-400 nm. Working conditions of such equipment are considered an extreme activity that requires the use of a new generation of electronics that can work at elevated radiation levels, sharp changes and high temperatures. Promising material for photodetectors VUV range is wide bandgap semiconductor 4H-SiC. Detectors on the basis of “solar-blind” are used to eliminate the need to use filters. Radiation-resistant 4H-SiC devices are operable to 600° C and do not require forced cooling, which greatly reduces the size and energy supply of the equipment. The transparent to light Cr Schottky barriers with thickness of 20 nm and diameter of 10 mm were formed by thermal evaporation. The height of the Schottky barriers were ≥ 1.2 V and reverse currents less than 10^{-13} A for a reverse voltage of 10 V. The first results of the spectral properties for the 4H-SiC Cr Schottky barriers detectors are presented in the report.