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THE INVESTIGATION OF DIAMOND ABSORBANCE SPECTRUM DOPED WITH BORON

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The trend of using of the radiaton with shorter wave length in leading high technological processes demands the detected search of materials for the solid-state electronics equipment and optical systems of an ultra violet and vacuum ultra violet spectral range. Diamond photon detectors of ultra violet radiation have the advantage of their opponents due to their unique properties, such as high sensitivity at the range of 190-250 nm and low sensitivity to the solar irradiation. The modification of semiconductive diamond material properties by the doping to get photon detectors with different of photosensitivity range is of a great interest. Due to this fact the spectroscopic investigation of artificial diamonds doped with boron took place for the definition of their applicability to produce the wide-spectral photosensitive equipment. The samples of thin diamond films were cut out in a crystallography plane (001). Sample transmission spectra were measured by vacuum infrared Fourier transform spectrometer at the range of 400-7000 sm -1. As a result it was explored that diamond based detectors doped with boron could be applied for the detection of infrared irradiation at the average infrared spectral range, however it is necessary to optimize the doping level of diamond materials to reach the compromise between the sensitivity and the speed capability of produced diamond photodetectors.

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