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ABSTRACTS
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I-21

ELECTROLUMINESCENCE OF NV CENTERS IN DIAMOND

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The paper presents the results of the electroluminescence study of a diamond sample, which consist in the NV centers. The sample surface was scanned to find the points of maximum luminescence intensity. The spectra were recorded at a voltage of 300 V. The current voltage characteristics of the sample were investigated and compared with the current voltage characteristics of diamond samples, which demonstrated the electroluminescence of nickel centers.

The study was carried out within the framework of the state task of the Ministry of Education and Science of Russia, project No. FSWM-2020-0048.

I-22

MORPHOLOGY OF CRATERS FORMED ON THE SURFACE OF DIAMOND PLATES UNDER THE ACTION OF FOCUSED LASER RADIATION

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In this work, we studied the morphology of craters formed on the surface of HPHT synthetic diamond plates under the action of high power laser radiation in the course of their study by the method of laser-spark emission spectroscopy. Samples of diamond plates were irradiated both with individual laser pulses and with series of up to 30 pulses at one point. An analysis of the results obtained shows that the shape of the crater depends on several factors: the energy of the laser pulse, the number of pulses in a series, and the crystallographic orientation of the plate. The influence of the laser pulse energy is manifested in the transition from the oval to the polygonal shape of the crater. The crystallographic orientation of the plate affects the shape of the polygonal crater: in the direction of the cube ‹100› rectangular pyramidal depressions with a linear or dotted bottom are formed, and in the direction of the octahedron ‹111› triangular flat-bottomed depressions are formed.