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Peculiarities of microwave discharge between a copper pin electrode and technical water

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Abstract

© 2014, Pleiades Publishing, Ltd. Some experimental results on burning of the microwave discharge between a copper pin electrode and technical water, in air, are presented within the ranges of the voltage U = 28–75 kV, the frequency f = 40–100 MHz, and the interelectrode space l = 2–20 mm. The essential influence of the pulse repetition frequency and the interelectrode space on the development, the shape, and the structure of the microwave discharge between the copper electrode and the technical water is revealed. Also the transition of the weakly glowing microdischarges inside the microwave discharge into the multichannel spark discharge is revealed. A temperature decrease below room temperature in the interelectrode gap of the microwave discharge with the technical water is discovered.

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