

TECHNIQUE OF EXPERIMENTAL DEFINITION OF OPTICAL THICKNESS OF THE PLASMA CHANNEL BY THE METHOD OF LIGHTENING AND POSSIBILITIES OF ITS APPLICATION FOR PULSING DISCHARGE IN WATER

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Results of development and application of a technique of experimental definition of optical thickness τ of the plasma channel in water by the method of lightening are given. Plasma of the discharge in water managed to be lighten through on a stage of relaxation and the logarithm of coefficient of passage of radiation from an extraneous radiation source have been determined. The basic contribution to size of optical thickness gives absorption of radiation, instead of dispersion. But this value is not real optical thickness. Calculation of atoms N_a concentration in the channel on values τ , received by the lightening through method, at 4 - 15 times is overestimated in comparison to the values of concentration, received by other independent method. Results of direct measurements of τ by illumination of the plasma channel by reference source OB-45 are overestimated because of features of passage of appearing through radiation through the channel of the discharge in water of the cylindrical form as it represents a disseminating lens. The reasons of this distinguish of the received by lightening through method values of τ in cylindrical plasma channel in liquids are given. The technique of definition of time of a delay of the beginning of expansion of the channel concerning the moment of submission of a voltage on a digit interval is developed.