

Investigation of the emission spectrum of molecular nitrogen in a discharge with a liquid electrolyte anode

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The distribution of the luminescence intensity of the second positive nitrogen system in height in a discharge with a liquid electrolyte anode at atmospheric pressure in air was measured. It was shown that the luminescence intensity of the second positive nitrogen system has an absolute maximum near the metal electrode, exceeding the integral luminescence intensity of the rest of the discharge. It was shown that the rotational temperatures of molecular nitrogen in a discharge with a liquid anode near the surface of the solution and near the metal electrode in the current range of 20–40 mA monotonously increase with increasing discharge current, and near the metal electrode they are 1.2–1.6 times higher than near the surface of the solution.

Keywords: liquid anode; plasma; electric discharge; air; atmospheric pressure; spectroscopy; emission intensity; second positive nitrogen system; rotational and vibrational temperatures.

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