

# Investigation of the glow of the second positive molecular nitrogen system in a discharge with a liquid electrolyte cathode in air near a metal anode

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The luminescence intensity of the second positive nitrogen system was measured at the maximum luminescence near a metal electrode in a discharge with a liquid electrolyte cathode at atmospheric pressure in air for solutions of different compositions. It is shown that the luminescence intensity does not depend on the composition of the solution for discharge currents of 20 and 40 mA, but significantly depends on the composition of the solution for currents in the range of 60–100 mA. It is assumed that this is due to an increase in the transfer of solution components under the action of a liquid cathode discharge into the plasma with an increase in the discharge current. It has been established that the rotational and vibrational temperatures near the metal electrode in the current range from 40 to 100 mA do not depend on the composition of the solution with an accuracy up to the error of determination. It is shown that the rotational temperature near the metal electrode increases monotonously from a temperature of 1150 to a temperature of 1550 K with an increase in the discharge current from 40 to 100 mA. The oscillatory temperature near the metal anode remains equal to 3800 K for all solutions at all discharge currents, up to the accuracy of the determination error.

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