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Features of current flow in a discharge with a liquid cathode prepared from an aqueous solution of sodium chloride

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Experimental studies of a discharge with a liquid electrolyte cathode in the current range of 50–100 mA at an interelectrode distance of 3–4 mm were carried out. An aqueous solution of sodium chloride with a molar concentration of 0.15 mol/l was used as the cathode. The presence of current ripple in the investigated range of parameters were fixed. The appearance of current ripple were considered under the assumption of a droplet transfer of matter and charges from an aqueous solution to the discharge plasma. Based on the analysis of the current waveforms, the sizes of individual droplets were estimated.

Keywords: gas discharge, liquid electrode, electrolyte cathode, contact glow discharge electrolysis, mass carryover of electrolyte.

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