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VACUUM ARC PLASMA DECAY AFTER INTERRUPTION OF THE DISCHARGE CURRENT*

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The decay processes of vacuum arc discharge plasma with cathodes based on copper *Cu* and chromium *Cr* have been studied. As the main experimental approaches, the method of breaking the discharge current and measuring the emission current of charged particles from the plasma to the collector under a floating potential was used. Thus, it was shown that during arcing, the collector current is determined predominantly by more mobile electrons. The interruption of the arc current led to the appearance of an ion current in the collector circuit. The presence of an axial magnetic field in the discharge gap led to the appearance of a nonmonotonic decay of the ion current pulse, which consisted in the appearance of a second current peak. The time interval between the peaks also depended on the magnetic field induction. Based on these results, the mechanism of the influence of a magnetic field on plasma confinement in the interelectrode space of a vacuum-arc discharge system is considered.

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