

References

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3.9 Radiation and temperature of a dense plasma column

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3.10 A solution-jet method for mass transport study

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Abstract

A new technique has been developed for mass transport study in d. c. arc plasma. Pulsed injection of examined element's aqueous solution is used in order to reduce the evaporation time to the time of substance's passing through the arc. Chopping of the liquid jet into small bullets enables relatively undisturbed burning of the arc.

Excitation of the substance, which evaporated in the arc, enables observations of its motion either by photomultiplier technique or high-speed camera method. Time resolution is achieved by an oscilloscope or time-base marker at the high-speed camera film, respectively. The advantages of the equipment lie in the determination of transport velocities, and residence time by different means.

3.11 Investigations of convection in d. c. arc

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Abstract

Time-resolved photomultiplier technique and high-speed camera method have been used for determination of convection velocities in the d. c. arc. The values of convection velocity are taken as equal to those of electrode particles' motion. A component of general transport velocity,