

THE ION BEAM GENERATION IN THE SELF-MAGNETICALLY INSULATED ION DIODE

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The studies of the plasma formation on the anode surface of the self-magnetically insulated ion diode were performed. The plasma formation is carried out by the voltage prepulse of negative polarity. The electrodes have a focusing geometry to provide ballistic focusing of ion beam. The anode was a graphite focusing electrode of rectangular cross-section. The diode cathode was designed in form of a grid from stainless steel. During the studies the anode and cathode configuration which provides uniform plasma formation was obtained. The experimental data of the current density and energy distribution over the ion beam cross section depending on the plasma formation conditions at the anode surface were obtained.

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