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Effect of a Biased Disk on the Afterglow Characteristic of HECRAL Ion Source

Previous studies indicate that the biased disk enhances the charge state distribution (CSD) in the plasma in continuous wave (CW) mode and it also improves the ion flux towards the extraction in pulsed mode. However, in these studies the biased disk voltage is always shifted from 0 V to a certain value (or vice versa) with different timing, for an electron cyclotron resonance (ECR) ion source operated in afterglow mode, this means that the RF-heating stage and RF-off stage could not be simultaneously affected in this condition. Therefore, in this study, to further investigate the effect of the biased disk on both the RF-heating stage and RF-off stage in afterglow mode, the waveform characteristic was systematically measured between two non-zero voltages with different timing on HECRAL (Hybrid superconducting Electron Cyclotron Resonance ion source with Advance in Lanzhou) ion source. The experimental results are presented and the physical mechanism behind experimental observation is discussed.

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Yes

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