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Dynamics of ion beam current compensation by RF pulsed electron flow emitted from the single-grid ICP source DMYTRO RAFALSKYI, STANISLAV DUDIN, V.N. Karazin Kharkiv National University — The investigation results of the time-dependent current and potential of the target under bombardment by combined ion-electron flow extracted from the single-grid ICP source with RF grid biasing are presented. Experimental measurements of the floating target potential show that the target potential oscillation amplitude is about 4% of the RF grid biasing amplitude. It is shown that the floating target potential and the target current oscillate with doubled frequency of the RF bias that is caused by electron transient effects in the ion-beam plasma in the beam transport space. The obtained results allow optimizing the regime of ion-beam processing of thin nanoscale dielectric films in the context of their electrical breakdown prevention. The etching test results are also presented.

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