

Abstract Submitted
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Frequency Effect on RF Gas Breakdown VALERIY LISOVSKIY, Kharkov National University, 4 Svobody sq., Kharkov, 61077, Ukraine, VLADIMIR YEGORENKOV, Kharkov National University, JACQUES JOLLY, Laboratoire de Physique et Technologie des Plasmas, Ecole Polytechnique, Palaiseau 91128, France, JEAN-PAUL BOOTH, Laboratoire de Physique et Technologie des Plasmas, Ecole Polytechnique — We registered rf breakdown curves of the parallel-plate capacitive discharge in the range of frequency values from 13.56 MHz to 105 MHz with the inter-electrode gap of 3 cm and in the hydrogen pressure range of values from 0.001 to 1 Torr. Rf breakdown curves for the frequencies up to 40 MHz possess the diffusion-drift branch with a multi-valued section, then with lowering the pressure the Paschen and multipactor branches are observed. For higher frequency values the diffusion drift branch assumes a U-shaped form, it does not possess a multi-valued section and transforms directly to the multipactor branch. On increasing the frequency the rf breakdown voltage of the multipactor branch grows linearly, and the minimum of the diffusion-drift branch is shifted to the range of higher gas pressure and rf voltage values.

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