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Effect of Accelerated Ions Interacted with Al Targets Using Plasma Focus Device

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Abstract : The Aluminum made targets were placed at the central part of a Fillipov type (90KJ) plasma focus cathode. These targets were exposed to perpendicular dense plasma stream incidence. Melt layer erosion by melt motion, surface smoothing, and bubble formation were some of different effects caused by diverse working conditions. Micro hardness of surface layer tends to decrease particularly in the central region of the sample where destruction is more intense. The most pronouced melt motion is registered in the region of the maximum gradient of pressure and the etching of aluminium surface is noticeable in the central part of target. The crater with a maximum depth of 200μm, and the diameter of about 8.5mm is observed close to the mountains. Adding Krypton admixture to the Deuterium gas lead to collapsing bubbles and greater surface damage.

Keywords : fillipov type plasma focus, al target interaction, bubbling effect, melt layer motion, surface smoothing
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