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Control of erosion and ignition of pulsed vacuum arcs

We will present recent results related to control of vacuum arc ignition and erosion in pulsed vacu-um arc devices. As a particular example, we will consider vacuum arc microthruster devices. To this end, we will discuss breakdown process in the case of a micro-vacuum arc thruster. In these devices ignition analysis includes effects of insulator material, cathode material deposition and cy-clic nature of insulation of the inter electrode layer. One example of plasma thruster is two stage device. The first stage is a short micro-second pulsed vacuum arc while the second stage is a long duration vacuum arc. Longer milli-second pulses of the second stage are formed in the presence of initial plasma formed during the first stage. This arrangement leads to enhanced cathode erosion.

Topic

Applications

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