
Development and research of cathode assemblies of high plasma devices at the Plasma Power Plants Department

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The history of the development of motor direction at the Plasma Power Plants Department was summarized. Since foundation of the Department significant attention to the research and development of high-current plasma devices, including electric propulsion thrusters, has been paid. The main key moments in the development and testing of arc and high-current engines, electrodes for unipolar generators, vacuum melting furnaces and atmospheric plasma generator, cathodes-compensators for stationary plasma engines and the development of methods of accelerated testing of such cathodes were presented in chronological order. Various design of high-current hollow cathode was developed, performance tests, including life test were conducted. The processes in high-current cathodes were investigated; wear mechanisms of thermionic cathodes were studied. Organizations, enterprises and their employees, with which cooperation work was carried out, were specified. The basic characteristics of the developed and investigated cathodes, cathode units and plasma devices were presented.

Keywords: *cathode, electric propulsion thrusters, cathode-compensator, high-current devices, plasma technology.*

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