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Experimental research on discharging mode of helicon plasma thruster

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Research on Helicon Plasma Thruster (HPT) mainly focuses on coupling of RF power, magnetic confinement, discharging mode. The great advantage of HPT is higher plasma density. With applied RF power, radial velocity can convert to axial velocity through the magnetic nozzle, which will enhance the thrust. Discharging mode is determined by plasma density jump. The article illuminates the apparatus of HPT and the diagnose equipment, analyzes the plasma density of HPT flow with Langmuir probe and the RF power rang in which helicon mode established is diagnosed. The experimental result is compared with that carried out from similar experiments. The similar trend and differences are discussed considered with energy loss and coupling efficiency. Further work is arranged at the end of the article.

Biography

Ding Liang has completed his PhD from Chinese Academy of Sciences and mainly focuses on electrical propulsion, thermal protection. He is interested about Helicon Plasma Thruster, VASIMR and air-breath electrical propulsion. He has published more than 15 papers in reputed journals and has been in charge of relevant programmes.

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