

Authors: Umesh R Kadhane

Title: Development and implementation of electric propulsion diagnostics system

Short Abstract:

Electric propulsion system (EPS) for space applications is the most efficient propulsion method developed so far. The advantages of EPS are partially offset by the developmental complications of the complex plasma devices and the requirement of exceptionally long duration operation. These aspects make development of EPS an extremely challenging and economically taxing process. Various plasma and beam diagnostics substantially mitigate these shortcomings. At IIST, we have been working on the EPS diagnostic in collaboration with the Indian Space agency for almost a decade. In this process, various customized and advanced EPS diagnosis tools have been developed and implemented. This include, multi spectral imaging, optical spectroscopy, ion beam analysers and plasma probes. A brief report will be presented on the development and implementation of these systems.