

Abstract Submitted
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The charge of single micro-particles in a low pressure spatial plasma afterglow¹ BOY VAN MINDERHOUT, JUDITH VAN HUIJSTEE, ANTOINE POST, Eindhoven University of Technology, TON PEIJNENBURG, JOHN VOGELS, PAUL BLOM, VDL Enabling Technologies Group, GERRIT KROESEN, JOB BECKERS, Eindhoven University of Technology — We have measured the charge of individual micro-particles in the spatial afterglow of an inductively coupled plasma. In our setup micro-particles fall through a spatially limited region of plasma where through interaction with the plasma they are charged. The particle charge is measured using their acceleration in an externally applied electric field. Up to now research has focused on the plasma charging of spherical particles. However in almost all applications particles are not spherical, for which the charging processes can significantly differ from that of single particles. We have developed an *in situ* cluster size detection technique based on the settling velocity of these clusters. Using this method, first cluster charge measurements are presented. We compare our results to an analytical particle decharging model.

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