Effect of energetic electrons for dust charging in a large rectangular RF helium plasma

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— A large rectangular RF plasma device (44 x 50 x 120 cm$^3$) has been developed for the study of transport and removal of dusts. Effects of dust grains and properties of background plasma are investigated by a planar electric probe in dusty plasma, which is consisted of helium plasma and tungsten dust. To check effect of the energetic electrons on the charging process, low density energetic electrons are produced by applying negative bias to a meshed tungsten grid installed between the upper power electrodes of RF antenna and the bottom ground electrodes. Density and charge of dusts are deduced by comparing pure helium plasma to that of dusty helium plasma.

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