



## **Photoemission from lunar dust simulant: Estimation of work function**

Libor Nouzak, Jakub Vaverka, Jiri Pavlu, Jana Safrankova, and Zdenek Nemecek

Charles University in Prague, Faculty of Mathematics and Physics, Department of Surface and Plasma Science, Prague, Czech Republic (nouzak@aurora.troja.mff.cuni.cz)

The lunar surface is covered by a layer of dust grains. On the Moon, these grains are charged by particles coming from the Sun (photons, electrons, and ions). A balance of several charging processes on both sunlit and night sides has not been completely understood so far. On the sunlit side, the work function of the grain plays a key role for energy of the produced photoelectrons and, as a consequence, on the grain dynamics. We present laboratory determination of the work function of a single micron-sized lunar simulant grain caught in the electrodynamic trap. The grain's specific charge is evaluated by an analysis of its motion within the trap. In the measurements, we observe a time evolution of the charge-to-mass ratio of the grain irradiated by UV (He I 21.2 eV and He II 40.8 eV) photons. A comparison of the photoelectron currents caused by different emission lines of known energies (in the UV discharge) allows us to establish the work function of a trapped grain. The first results indicate that the work function of such grains is about 5 eV.