

ATOMIC BATTERY BASED ON ORDERED DUST-PLASMA STRUCTURES

*A.V. Filippov, A.F. Pal', A.N. Starostin, V.E. Fortov¹,
O.F. Petrov¹, P.P. D'Yachenko², V.A. Rykov²*

SRC RF TRINITI

(Troitsk, Moscow region, Russia;

e-mail: staran@triniti.ru),

¹IHED RAS

(13/19, Izhorskaya Str., Moscow, Russia),

²SRC RF IPPE

(Obninsk, Kaluga region, Russia)

S u m m a r y

We report the results on creating the physical basis for a new-type atomic battery on the base of ordered plasma-dusty structures. The ranges of parameters, for which the Coulomb crystallization of the dusty plasma in an atomic battery is expected, are determined. Experiments on the photovoltaic transformation of the energy of fast electrons to electric energy are carried out. A dusty plasma excited by the decay products of Cf²⁵⁵ or by a proton beam is experimentally investigated.