

Abstract Submitted
for the GEC06 Meeting of
The American Physical Society

Numerical study on characteristics of neutral beam in plasma-grid-reflector system for material processing SEUNG-HOON PARK, YONG-SEOK JHO, TAESANG LEE, Korea Advanced Institute of Science and Technology, CHOONG-SEOCK CHANG, Korea Advanced Institute of Science and Technology and Courant Institute-NYU — Low energy neutral beam source has been proposed as one of candidates reducing charging damage in the nano-scale etching process. The neutral beam is generated by interaction between accelerated ion from a grid which is applied hundreds voltage with a metal reflector. Whole simulation is composed of two parts, ion beam simulation and ion-reflector interaction simulation. Ion beam simulation describes ion trajectory, such as ion trajectory deflection and variation of ion energy caused by ion-ion interaction, in a grid and a reflector. Fast Multipole Method (FMM) is used for calculation of long-range interaction of ions. Ion-reflector interaction simulation is performed using molecular-dynamics for calculation ion reflection characteristics. The neutral distribution is obtained by ion-reflector simulation from ion distribution onto a reflector surface.

Seung-hoon Park
Korea Advanced Institute of Science and Technology

Date submitted: 15 Jun 2006

Electronic form version 1.4