

Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

Modeling dust crystal in a cylindrical rf plasma reactor ALTHEA WILSON, The University of Alabama in Huntsville, MOHAMMAD DAVOUD-ABADI, ANSYS, Inc., BABAK SHOTORBAN, The University of Alabama in Huntsville — In this study, the effect of the radiofrequency on the modeling of three-dimensional dust crystal was examined. A low pressure cylindrical argon reactor was modeled numerically using the local field approximation model, then multiple small dust grains were released and tracked in a three-dimensional Lagrangian framework. The dust grain configuration was obtained for two different cases; one using the rf-period-averaged plasma variables and one using the instantaneous plasma variables. The results of two cases were compared and significant differences were observed.

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Date submitted: 12 Jul 2013

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