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Three Dimensional Particle-in-Cell Simulation of Device for Plasma Processing SEIJI ISHIGURO, National Institute for Fusion Science, Japan, WAKAKO SHIRATORI, Hitachi Kokusai Electric Inc., Japan, ARIMICHI TAKAYAMA, National Institute for Fusion Science, Japan, UNRYU OGAWA, KAZUYUKI TOYODA, Hitachi Kokusai Electric Inc., Japan — For development of high-efficiency device for plasma processing it is important to investigate plasma characteristics in the device. The device has wafers, some structural objects inside and external electrodes for RF discharge. Plasma characteristics such as density distribution, temperature distribution and potential profile are influenced by structure of inside objects and external electrodes. In order to investigate plasma characteristics in the device and the effect of additional objects inside, we have developed a three-dimensional Particle-in-Cell simulation code with Monte Carlo collision. Simulations are performed under the condition in which plasma is produced by capacitive discharge with 13.56MHz RF power supply. Plasma behavior and effect of additional objects are investigated.

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