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**Potential fluctuation induced by discrete particle effect in a nano-scale trench** TAESANG LEE, Korea Advanced Institute of Science and Technology, SEONGSIK KIM, National Fusion Research Center, CHOONGSEOCK CHANG, Korea Advanced Institute of Science and Technology — A simplified two-dimensional Monte Carlo simulation is performed to investigate the electric field fluctuations caused by strong Coulomb interactions between discrete particles in nanometer scale trenches. It is found that the discrete particle effect should be an important part of the nano-scale trench physics, raising the ion orbit scatterings in the trench, enhancing the ion deposition on the side walls, and dispersing the material contact energy of the incidence ions.

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