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Island Size Selectivity during 2D coarsening of Ag/Ag(111) Surface[1] GIRIDHAR NANDIPATI, ABDELKADER KARA, SYED ISLAMUDDIN SHAH, TALAT RAHMAN, University of Central Florida — We have carried out realistic kinetic Monte Carlo [1] simulations to study initial stages of submonolayer Ag island coarsening on the Ag(111) surface. We find that during initial stages, coarsening proceeds through sequence of magic island sizes and this selectivity occurs via adatom detachment/attachment processes. We will present detailed analysis of island creation/annihilation (selection) and its dependence on island shape and also its dependence on temperature and initial Island size distributions. These simulations were carried out using a very large database of activation barriers for processes identified by their local environment. This database has been generated from previous self-learning kinetic Monte Carlo [2] simulations of small and medium sized clusters and the energy barriers were calculated using embedded atom method.

[1] J. Phys.: Cond. Mat. **21**, 084214 (2009).
[2] Phys. Rev. B **72**, 115401 (2005).

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