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Melting Dynamics of Core-Shell Ni-Ag Nanoalloys

H. Arslan[1], D. Zehir[1]

[1] *Department of Physics, Bulent Ecevit University, Turkey*

h.arslan@beun.edu.tr

Molecular dynamics simulations at constant temperature are performed to investigate melting-like transition in core-shell ordering Ni_nAg_m (n+m=55, 147,309, 561) nanoalloys using a Gupta potential. The caloric curves and Lindemann parameters are calculated to get the phase changes of nanoalloys. For all the core-shell nanoalloys studied, their geometric shape and chemical ordering are preserved well before the complete melting transition occurs and their premelting corresponds to the surface melting.

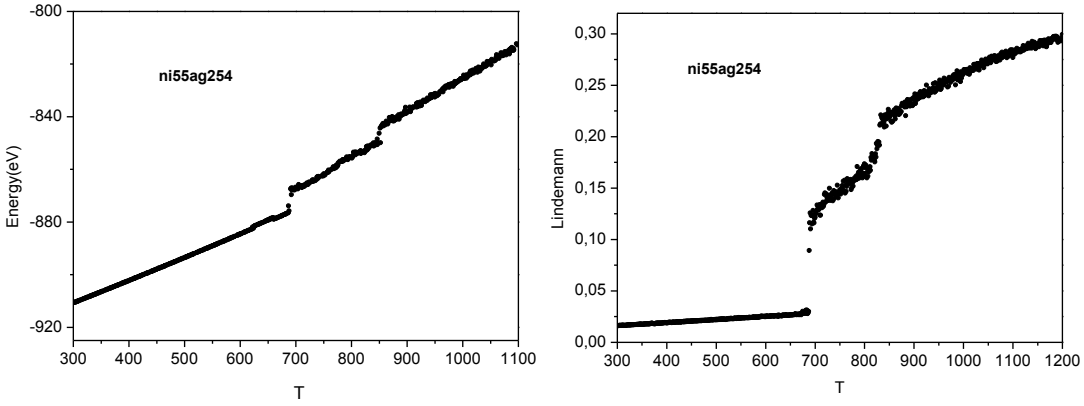

Figure 1: The caloric curve and Lindemann parameter of $Ni_{55}Ag_{254}$ nanoalloys.