Abstract Submitted for the TSF10 Meeting of The American Physical Society

Evolution of Structure and Energy Stability of Ag Nanoparticles¹ HECTOR BARRON, JUAN PEDRO PALOMARES-BAEZ, Instituto Potosino de Investigacion Científica y Tecnologica, JESUS VELAZQUEZ-SALAZAR, University of Texas at San Antonio, JOSE LUIS RODRIGUEZ-LOPEZ, Instituto Potosino de Investigacion Cientifica y Tecnologica, MIGUEL JOSE-YACAMAN, University of Texas at San Antonio, UNIVERSITY OF TEXAS AT SAN ANTONIO COLLABO-RATION, INSTITUTO POTOSINO DE INVESTIGACION CIENTIFICA Y TEC-NOLOGICA COLLABORATION — Nanotechnology is a leading interdisciplinary science that is emerging as a distinctive field of research. Its advances and applications will result in technical capabilities that will allow the development of novel nanomaterials with applications that will revolutionize the industry in many areas. In this work we present the structural evolution and energy stability results for silver nanoparticles from the small (1-2 nm) to the big (50 nm) size ranges. We have found that the appearances of structural lattice defects are important factors that influence the growth process. A simple assembly model for a path transformation for silver nanoparticles is presented and compared with experimental evidence.

 $^1\mathrm{Acknowledgements:}$ Financial support from National Science Foundation Grant DMR-0934218.

Hector Barron

Date submitted: 22 Sep 2010

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