Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Resistivity of thiol-modified Au thin films[1] PATRICIO HÄBERLE, JONATHAN CORREA-PUERTA, VALERIA DEL CAMPO, RICARDO HENRíQUEZ, Universidad Técnica Federico Santa María, Chile — Electrical transport in conductors with sizes in the nanoscale range is indeed a surface dependent feature. We report on the modification of electrical transport in thin gold films by the functionalization of alkanethiols, which form a self-assembled monolayer. Theoretical models such as the Fuchs-Sondheimer-Lucas and Namba [1], have been used to describe the electrical conduction, including size effects. Within these models, the resistivity can be attributed to an electron-surface scattering mechanism. Measurements performed in different films display an increased resistivity in the functionalized films. This increment depends mainly of the gold surface topography and not necessarily on the film thickness.

[1] J. Correa-Puerta, V. Del Campo, R. Henríquez, P. Häberle, Thin Solid Films, 570, Part A,150 (2014).

[1]Partial funding provided by CONICYT, Chile

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Date submitted: 13 Nov 2014 Electronic form version 1.4