

Abstract Submitted  
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**Quantum Size Effects on Growth of Cylindrical Gold Nanoclusters on Surface** YONG HAN, FENG LIU, Department of Material Science and Engineering, University of Utah, Salt Lake City, UT 84112 — We use a cylindrical hard wall model to investigate the stability of cylindrical gold nanoclusters (nanomesas) containing hundreds to millions of atoms. The model shows an oscillating pattern of size dependence of preferred growth direction of mesa height vs. mesa radius, which leads to selected mesa height and radius in different range of mesa sizes. We will discuss our theoretical results in comparison with experimental growth of gold mesas on graphite surface. \*This work is supported by NSF.

Yong Han  
Department of Material Science and Engineering, University of Utah, Salt Lake City, UT 84112

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