

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Islands as nanometric probes of strain distribution in heterogeneous surfaces ELDAD PERETZ, HENRY REALPE, Ben Gurion University of the Negev, Israel, NOAH SHAMIR, MOSHE H. MINTZ, Nuclear Research Center-Negev, Israel, RONI Z. SHNECK, YISHAY MANASSEN, Ben Gurion University of the Negev, Israel — We presents a novel approach to the mapping of strain on heterogeneous surfaces, at the nanometric scale, using the islands on the surface that are the outcome of the strain, as local strain probes. Utilizing a stress-relieve model we show that the island size and shape reflect the strain variations on the surface. Hence, an STM analysis of the size and shape distributions of the islands may provide a probe to the strain variations on undulated surfaces, having the resolution of the island sizes and inter-distances. The different island sizes and aspect ratios play a significant role in the determination of the strain. To the best of our knowledge, this is the first time that such a mapping is performed.

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Date submitted: 01 Dec 2009

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