Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Au-Induced Reconstructions on the Si(111) Surface[1] F.-K. MEN, A.-L. CHIN, Department of Physics, National Chung Cheng University, Chia-Yi 621, Taiwan, ROC — By depositing Au onto a Si(111)-(7×7) surface at elevated temperatures, the existence of (5×2), ($\sqrt{3}\times\sqrt{3}$), and (6×6) reconstructions have long been studied as a function of Au coverage. The corresponding structures however are yet to be satisfactorily determined. By using scanning tunneling microscopy (STM), we have investigated these Au-induced surface structures at LN2 temperature. With STM image quality exceeding currently published results, we are able to identify fine details in those reconstructions, which may shed new light on constructing structural models.

[1]Work supported by NSC, Taiwan, ROC.

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Date submitted: 30 Nov 2005 Electronic form version 1.4