

Abstract Submitted  
for the MAR05 Meeting of  
The American Physical Society

**Theoretical Analysis of Step Bunching Instability in presence of Misfit Strain and Ehrlich-Schwoebel Barrier** LUGANG BAI, Y.G. ZHAO, M. LAGALLY, J. TERSOFF, FENG LIU, UNIVERSITY OF WISCONSIN TEAM, IBM TEAM — We develop a generic theoretical model to analyze step-flow of strained films, taking into account effects of both strain-induced step-step interaction and Ehrlich-Schwoebel (ES) step-edge barrier. In general, the strain induces a step bunching instability; a positive ES barrier (a barrier for an adatom to go downward over a step) stabilizes the step flow, while a negative ES barrier (a barrier for an adatom to go upward over a step) destabilizes the step flow. We will discuss the stability of step-flow growth in terms of relative strength of strain and ES barrier effects and compare with computer simulations.

Lugang Bai

Date submitted: 01 Dec 2004

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