

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Adsorption of In atoms on In/Si(111)- 8×2 studied by variable-temperature STM HYUNGJOON SHIM, JONGHOON YEO, DONGCHUL SHIN, GEUNSEOP LEE, Department of Physics, Inha University — We have investigated adsorption of In atoms on In/Si(111) surface by using variable-temperature scanning tunneling microscope. At room temperature, the adsorbed In atoms on 4×1 are invisible due to its high mobility on a 4×1 phase. As the temperature decreases below the phase transition temperature, additional In atoms begin to appear being fixed on a 8×2 phase. The In atoms are mostly adsorbed as an isolated atoms (monomers) and paired ones (dimers) on In chains. The adsorbed In atom induces a local phase-flipping in the vicinity, resulting in a phase shift along the chain direction. Occasional hopping of isolated In atoms along the chain direction are observable at 80K. The hopping occurs preferentially in the direction of the local phase-flipping side. Formation of dimers in relation to the preferential hopping direction will be discussed

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Date submitted: 11 Nov 2011

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