

Abstract Submitted
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Impurities in Vacuum Deposition: Effect on Island Nucleation and Surface Morphologies¹ ALBERTO PIMPINELLI, Univ. of Maryland, College Park (UM) & U.B.P.Clermont-2 & Science Attache, French Consulate, Houston, AJMI BH. HAMOUDA, UM & Univ. Monastir, Tunisia, T.L. EINSTEIN, UM — The effect of impurities on epitaxial growth in the submonolayer regime is studied using kinetic Monte Carlo simulations of a two-species solid-on-solid growth model. Both species are mobile, and attractive interactions among adatoms and between adatoms and impurities are incorporated. Impurities can be codeposited with the growing material or predeposited prior to growth. We discuss the peculiar morphologies observed in copper on copper deposition on vicinal surfaces, and argue that only the presence of impurities can explain all observed features.² We also investigate the effect on island nucleation using a recently developed approach based on capture zone distributions.³

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²A.BH.Hamouda et al., Phys. Rev. B 77, 245430 (2008)

³A. Pimpinelli & T.L. Einstein, Phys.Rev. Lett. 99, 226102 (2007)

Theodore Einstein
University of Maryland, College Park

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