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STM Tip-Induced Growth of Silver Islands BLAKE BIRMINGHAM, Baylor Univ, YAOBIAO XIA, Baylor University, DMITRI V. VORONINE, Princeton University, Texas A&M University, KENNETH T. PARK, ZHENRONG ZHANG, Baylor University, MARLAN O. SCULLY, Baylor University, Texas A&M, Princeton University — Nanomanipulation of coinage metal islands growth is important for the preparation of surface-enhanced Raman scattering substrates. In this study, the growth of large scale island features on Ag(111) was observed at room temperature via Scanning Tunneling Microscope (STM). This island growth is attributed to tip-induced dynamic diffusion of the surface Ag atoms between terraces and was observed with tungsten and silver tips. The growth is induced in regions where the Ag(111) has been scanned. The rate of diffusion directly relates to the number of times an area has been scanned. This phenomenon was investigated by varying the size and the depth of the initial islands and by controlling tip condition.

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