

**Tip-induced deposition of Cd-nanostructures on Au(111)  
with electrochemical scanning tunneling microscope**

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By tip-induced metal deposition using an EC-STM it is possible to generate small metal clusters on a metal surface in an electrochemical environment. This method has been previously applied with a variety of metals (Cu, Pb, Ag, Pd) on metallic substrates like Au, Ag and AuCu alloys. Clusters consist typically of 100-150 atoms and, at this size, show an unexpected electrochemical stability to anodic oxidation. To find out the role of interfacial alloying for cluster stability, we generated Cd clusters on Au(111). Another target of the work is chemically transformation of the tip-induced nano-structure into semiconducting quantum dots. The results of Cd nano-structures under various conditions are discussed.