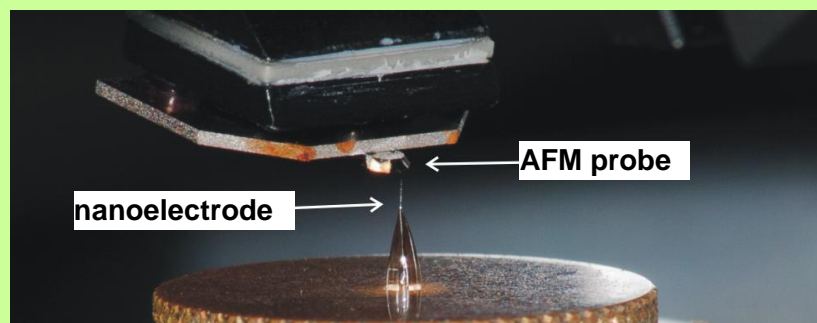


How Many Metal Atoms Can Act as a Catalyst?

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Atomic force microscopy of electrochemical nanoelectrodes

Nanometer-sized electrodes made it possible to study processes and phenomena that would not be accessible by larger electrochemical probes. We developed methodology for imaging of nanoelectrodes in air and in solution by atomic force microscopy (AFM). Detailed information about electrode geometry and surface reactivity is essential for reliable interpretation experimental data.



Nucleation and growth of metal clusters on nanoelectrodes

We investigated Ag electrodeposition on the surface of nanometer-sized Pt electrodes and measured the nucleation/growth kinetics of individual Ag crystals by combination of nanoelectrochemistry and AFM. The existence of a single nucleation site on the surface of a 50 nm electrode persisting through several deposition/stripping cycles has been demonstrated.

