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Characterization of metallic adatoms on GaAs DAVID GOHLKE, JAY GUPTA, Ohio State University, Department of Physics — As semiconductor nanostructures become smaller, defects play an ever-increasing role in systems of interest. Scanning tunneling microscopy (STM) can be used to probe and manipulate systems on the atomic scale. For exceptionally clean systems, we study our samples at low-temperature (5K) and ultra-high vacuum (UHV). Here we examine the properties of charged atoms on the surface of the semiconductor gallium arsenide (GaAs). We determine the binding site and charge of these adatoms, and use this information to tune the energy levels of electron acceptors in the surface. Funding for this research was provided by the Center for Emergent Materials at the Ohio State University, an NSF MRSEC (Award Number DMR-0820414). http://www.physics.ohio-state.edu/∼jgupta/

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