

## Chemical Activation of Semiconductor Surfaces

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The organic functionalization of semiconductor surfaces is a burgeoning area of surface science which is poised to play a major role in the creation and development of revolutionary molecule-based semiconductor devices. The incorporation of organic molecules with specific properties at the semiconductor interface has the potential to add novel functionalities to chemical, biological, and electronic devices. In an attempt to understand the reactivity, structure, and interfacial properties of such hybrid organic-semiconductor systems, investigations of the covalent attachment of model organic molecules to vacuum-prepared semiconductor surfaces need to be completed. This presentation will focus on systematic surface reactions of organic molecules with semiconductor surfaces according to various functional groups using vapor phase delivery in a dry processing environment. The surface reactions of simple alkene and selectivity of bifunctional molecules on the surface will be discussed. Finally, the layer-by-layer growth method to form an ultrathin film on the surface via spontaneous chemical reaction will be presented.