

**Electron Transfer Dynamics through
Nanometer Thick Insulating Barriers on
Electrode Surfaces.**

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The studies reported here manipulate the film properties to control the electron transfer kinetics. The composition and structure of Self-Assembled Monolayer (SAM) films plays a critical role on the electron transfer kinetics at electrode surfaces. The studies that will be discussed probe both electronic and electrostatic features of the film on the electron transfer - in particular, the change in electron transfer mechanism, from nonadiabatic to adiabatic, as a function of film thickness is investigated; the dependence of the electron transfer rate constant on the terminal functionality of the SAM is probed; and the importance of film structure on interchain coupling is discussed. These studies illustrate the important role of film properties on electron transfer kinetics.