

The Electronic Coupling Element in Electron Transfer Reactions: A Sensitive Probe of Bonding and Dynamics

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The electronic coupling element is primarily responsible for the distance- and orientation-dependence of electron transfer processes. This talk will discuss the strengths and weakness of various methods for the estimation of the coupling element in systems of experimental interest. It will then apply one of the methods (the Generalized Mulliken-Hush Method) to probe the details of charge transfer in complex systems. Some of the unique chemistry of charge transfer reactions will be discussed, as well as the challenges that lie ahead for quantitative descriptions of such systems.