

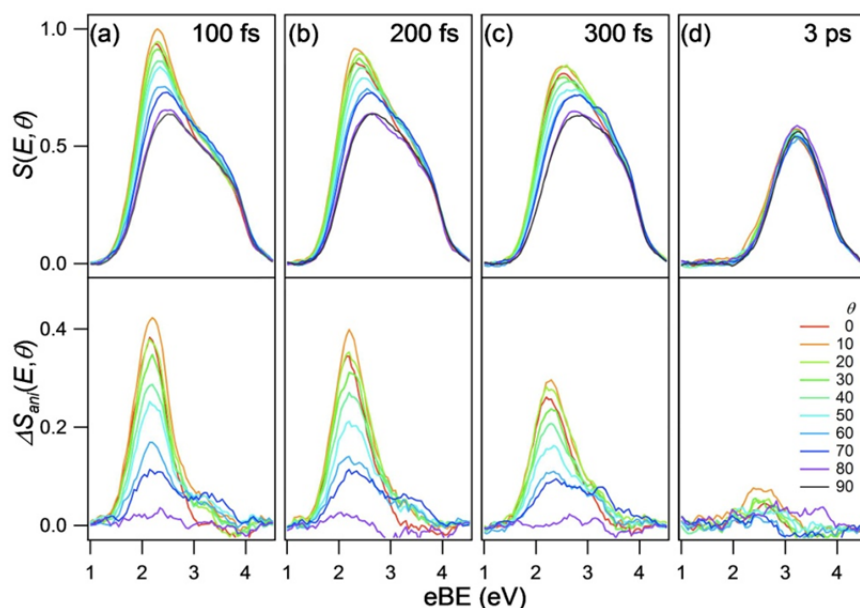
Ultrafast Photoelectron Spectroscopy of Non-Adiabatic Dynamics in Gas and Liquid Phases

Toshinori Suzuki

Department of Chemistry, Kyoto University, Kyoto, Japan

State-resolved differential cross-section measurements have enabled elucidation of unprecedented details of photodissociation and bimolecular reaction dynamics. On the other hand, the quest for understanding electronic non-adiabatic dynamics and nuclear motions prior to bond dissociation and rearrangements has stimulated development of ultrafast spectroscopy.

In my lecture, I describe time- and angle-resolved photoelectron spectroscopy of gases and liquids to illustrate how this method is utilized to understand photo-induced dynamics of polyatomic molecules or aggregates such as a hydrated electron in water.



Photoemission from aqueous 0.5M DABCO [1,4-diazabicyclo[2,2,2]octane] solution occurs from the Rydberg state of DABCO at short time delays with strong anisotropy, whereas photoemission at 3 ps occurs from a hydrated electron in the ground state with negligible anisotropy.

References

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