EXPERIMENTAL CHARACTERIZATION OF IDEALIZED METAL-CENTERED REACTIONS

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Instrumentation has been developed for measuring kinetic parameters for gas phase organic decompostion reactions activated by bare transition metal cations. This technique forms the reactants as a binary cluster ion in a jet-cooled expansion. A rearrangement dissociative reaction is initiated through the absorption of a visible laser photon. The temporal development of a specific fragment ion is monitored in a custom time of flight mass spectrometer. This talk focuses on the development of this instrumentation and recent results for the low-energy metal-centered ion induced decompostion reaction of organic species.