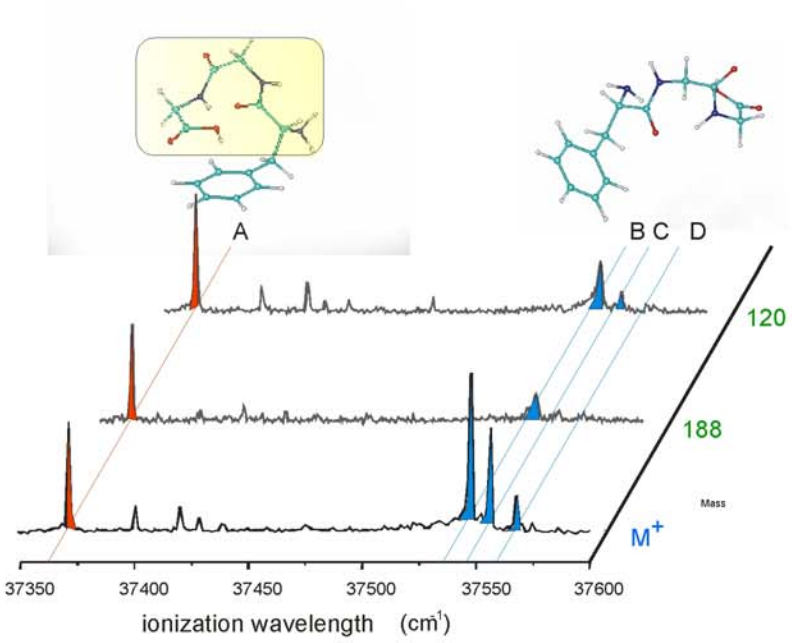
Gas phase spectroscopy of **isolated** model peptides

Mattanjah S. de Vries, University of California Santa Barbara

Understanding the details of molecular shapes is fundamental to understanding many aspects of their chemical function. We have therefore undertaken to study the conformational landscapes of small poly-aminoacids. We have used IR-UV double resonant spectroscopy of laser-desorbed and jet-cooled model sequences to determine folding patterns. We have analyzed the experimental spectra with high level quantum computations.



The dissociation dynamics in phenylalanyl-glycyl-glycine (FGG) ions depends strongly on the starting conformation. We propose a model of shape dependent charge transfer to interpret the results. FGG serves as a model molecule to study the fundamental details of peptide folding.

Double resonant IR-UV double resonance spectroscopy of isolated gramicidin peptides in the gas phase shows evidence for a helical structure, similar to that in the condensed phase. This approach probes local details in isolated molecules, free of interactions.