

High Resolution Ionization Spectroscopy of Some Amino Acids and Nucleic Acid Bases in the Gas Phase**Sang Kyu Kim**

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Using the Vacuum-UV laser pulse combined with the pulsed-field ionization method, we study the ionization dynamics of some biologically important building blocks such as amino acids and nucleic acid bases. Accurate ionization potentials and cationic vibrational frequencies are quite accurately determined, and ab initio calculations are carried out for the spectral interpretation. Ionization dynamics at the high- n Rydberg states are further investigated with a metal-organic sandwich complex to see the effect of the pulsed-field strength, delay time, and spoil field. Diabatic ionization behavior is typically observed for the pulsed-field ionization for the relatively low n -Rydberg states, while adiabatic ionization seems to be responsible for the very high- n Rydberg states. This peculiar behavior may be due to the character of the electronic structure of the metal.