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Collisions of thermal electrons and electron affinities of SF_6 , C_6F_6 and nucleic acids¹ EDWARD C.M. CHEN, University of Houston, Clear Lake, EDWARD S. CHEN, Baylor College of Medicine — New electron affinities of the subject molecule are reported from the temperature dependence of thermal electrons measured with the electron capture detector and negative ion mass spectra. The electron affinities are compared with values obtained from anion photoelectron spectra. Multiple negative ion potential energy curves are calculated to consolidate all experimental data The adiabatic electron affinities are: in eV SF₅, 3.80(12), SF₆ 2.45(10), C₆f₆, 1.40(10), Adenine, 1.08(5), Guanine, 1.60(10), Cytosine, 1.04(5), Thymine, 0.93(5), Uracil, 0.96(5). Excited state for all of these except for guanine have been observed in photoelectron spectra. Parent negative ions of the nucleic acids are observed in mass spectra. The as phase acidities of the deprotonated nucleic acids are reported.

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Edward Chen University of Houston, Clear Lake

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