

## List of Symbols

$\text{\AA}$	Angstrom
$E_b(n)$	Averaged binding energies
$\tau_{\text{eff}}$	Atmospheric lifetime
$\Delta E^\#$	Barrier height
$k_B$	Boltzmann constant
$D^0_{298}$	Bond-Dissociation Energy
$\rho$	Electron density
$\Delta E(n)$	Fragmentation energies
$\Delta G_r$	Gibbs free energy
$\hat{H}$	Hamiltonian Operator
$\nabla^2 \rho$	Laplacian of electron density
$H(r)$	Local electronic energy density function
$G(r)$	Local kinetic energy
$V(r)$	Local potential energy
$h$	Planck's constant
$k$	Rate constant
$\Delta^2 E(n)$	Second-order difference of energies
$\Delta H_r$	Standard reaction enthalpy
$\Delta_f H^\circ_{298}$	Standard enthalpy of formation
$Q$	Total partition functions
$\Gamma(T)$	Tunneling correction factor at temperature T
$R$	Universal gas constant
$\Psi$	Wave function