Spectroscopic notation:

R	Rotational angular momentum of the nuclear framework
I	Nuclear spin angular momentum
$L = \sum_i l_i$	Total electronic orbital angular momentum
$S = \sum_i s_i$	Total electronic spin
F = R + L + S + I	Total angular momentum
J = F - I	Total angular momentum excluding nuclear spin
N = R + L = J - S	Rotational angular momentum including electronic orbital angular momentum
Π	Parity defined as the result of inversion of all fixed space coordinates. This thesis adopts the standard phase convention that makes this operation equivalent to σ_v[45].
σ_v	The operator for reflection of the molecular wavefunction through a vertical mirror plane (i.e. coincident with the symmetry axis). By convention: $\sigma_v\|x,y,z> = \|x,-y,z>$.
v	Generic vibrational quantum number.
$v_1v_2v_3\ldots v_n$	Compact notation for describing the vibrational state for the n non-degenerate modes of a molecule. An example follows.
$01^{lc/d}0$	This refers to the excitation $v_2 = 1$. c/d refers to lower or upper *l*-doublet component.
e/f	Lower or upper Λ-doublet component.
ϕ	Azimuthal angle for an unpaired electron with respect to the molecular symmetry axis. The phase convention: $\langle \Lambda = \pm 1 \| e^{\pm 2i\phi} \| \Lambda = \mp 1 \rangle = +1$, has been adopted.

Projections onto the symmetry axis:

$S_z \equiv \Sigma$

$L_z \equiv \Lambda$

$J_z \equiv \Omega = \Lambda + \Sigma$ In states of non-zero orbital angular momentum

$N_z \equiv K$ For symmetric rotors without orbital angular momentum

Vibronic coupling notation:

l Vibrational Angular Momentum

$K(\text{Kappa}) \equiv \Lambda + l$

$P \equiv K(\text{Kappa}) + \Sigma$