



$$\hat{\mathcal{H}}_s = \underbrace{D\hat{S}_z^2}_{\text{zero-field splitting}} + \gamma_e \hat{\mathbf{S}} \cdot \mathbf{B}$$

\mathbf{z} direction defined by the crystal lattice

$$\mathcal{E}_{\pm 1}^i \approx D \pm \gamma_e \mathbf{B} \cdot \mathbf{e}_i$$

\rightarrow 4 possible pairs of $\mathcal{E}_{\pm 1}^i$ (4 classes of NV)

ODMR spectrum with an ensemble

