

Ideal (DC) sensitivity for  
N independent NV centers:

$$\eta[\text{T}/\sqrt{\text{Hz}}] \approx \frac{\hbar\sqrt{\Delta\nu}}{g\mu_B C\sqrt{N}}$$

- $\hbar$  : Planck constant
  - $\mu_B$  : Bohr magneton
  - $g$  : NV electron Landé factor
  - $C$  : Spin readout contrast
  - $N$  : Number of NV centers
  - $\Delta\nu = \frac{1}{T_2^*}$  : Spectral linewidth
- } Constants  
 } Experimental parameters  
 } Sample parameters

