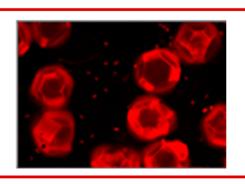
## Experimental setup LIA signal (V) 5 Lock in Demodulated PL ref in out -100100 DM $B_0$ (G) 520 nm laser Direct PL contrast 86.0 96.0 APD $B_0 + B_{AC}$ 0.98 $ilde{U}_{ m AC}$ $\overline{ m Ampli}$ $U_0$ LĒ 0.94 -100100 0 $B_0$ (G)

## Samples

Adamas  $1/15/150 \mu m$  fluorescent microdiamond [N] =  $100\sim200 PPM$  [NV]  $\sim 3 PPM$ 



## Experimental parameters

- $f_{\rm mod} \sim 1 \text{ kHz}$
- $|B_{\rm mod}| \sim 10 \ {\rm G}$
- $I_{\rm las} \sim 1 \ {\rm mW}$
- PL  $\sim 1 \ \mu W$