(CH4, H2) plasma ball graphite $\Delta T =$ $20 \sim 50 \, ^{\circ}\mathrm{C}$ -substrate metal melt Diamond T Diamond Vacuum N_s (P1 center) 3 mm Adamas $15/150 \ \mu \text{m}$ IRCP-LSPM $[N_s] \approx 25 \text{ ppm}$ $[N_s] \approx 100 \text{ ppm}$ $[NV] \approx 4.5 \text{ ppm}$ $[NV] \approx 3 \text{ ppm}$

(HPHT)

NV center

 $T = 1300 \sim 1600 \, ^{\circ}C$

 $P=5\sim6$ GPa

Highe Pressure High Temperature Chemical Vapour Deposition

(CVD)

Gas feed

microwave