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Supporting information for

Fabrication of Boron Doped Diamond Chip Electrodes for Single Drop Analysis

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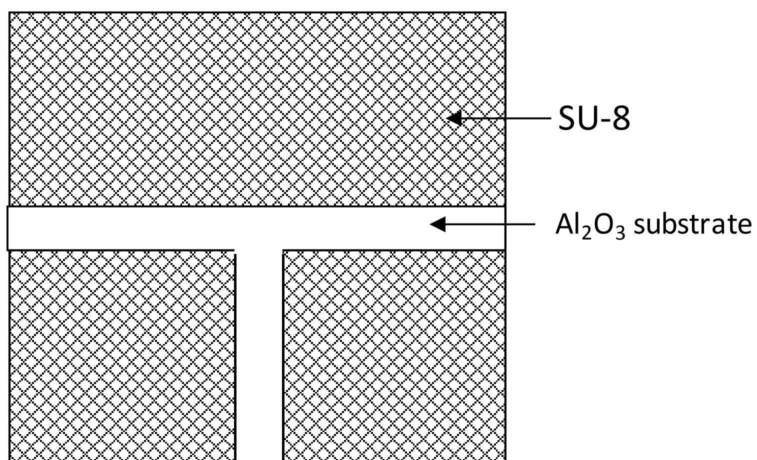

Figure S1 Top view of Figure 1(e).

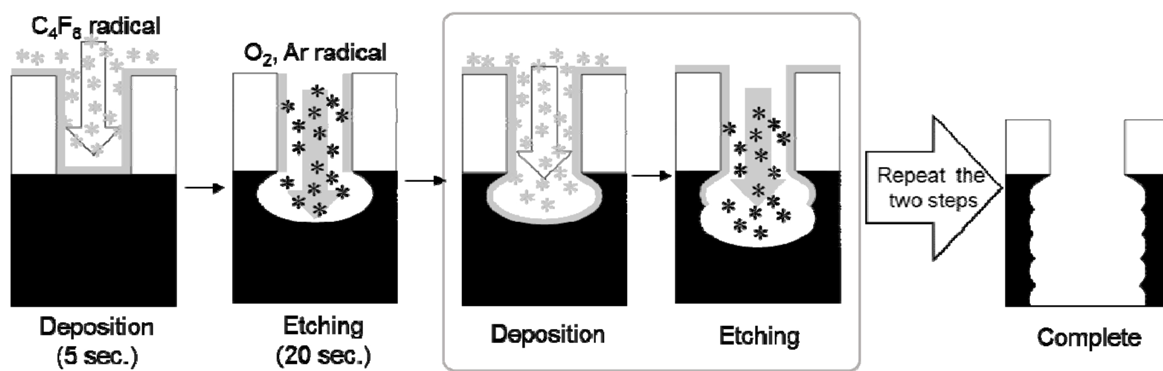

Figure S2. Schematic illustration of the Bosch process.

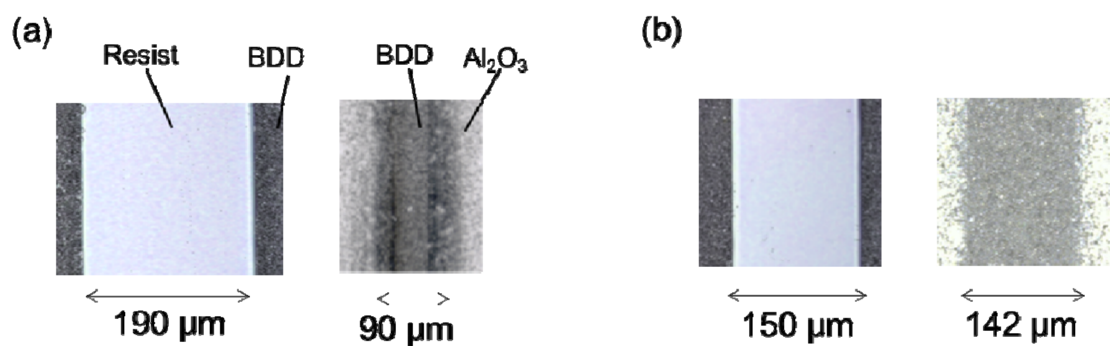

Figure S3. Digital microscope images before and after the ICP-RIE process.
(a) Conventional process: (left) before and (right) after the ICP-RIE process.
(b) Bosch process: (left) before and (right) after the ICP-RIE process.

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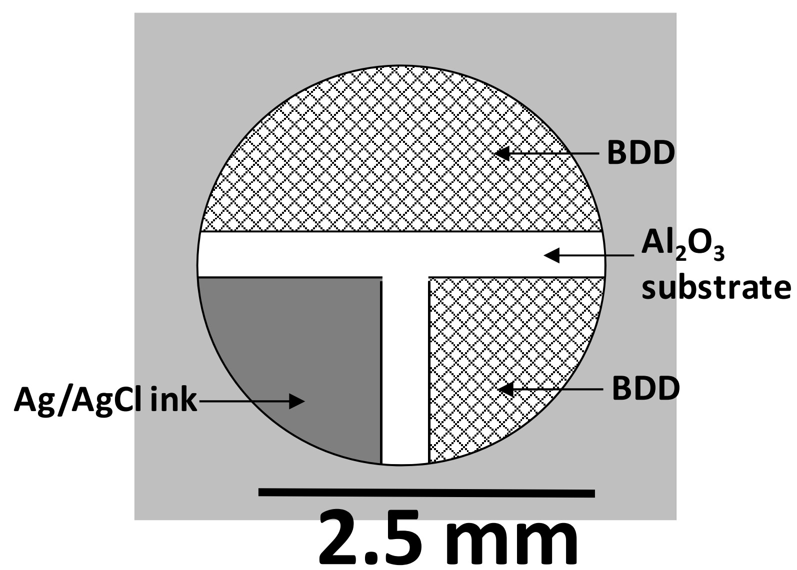

Figure S4. Schematic illustration of 'BDD chip electrode'. Single drop sample is in the circle area.

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Table S1. Process conditions for the Bosch process.

Etching gas	O_2: 17 sccm Ar: 32 sccm
Deposition gas	C_4F_8: 85 sccm
Erching time	20 sec
Passivation time	5sec
Cycle	150 times
Time	62 min
Pressure(etching)	5 Pa
Pressure(passivation)	3.3 Pa
Power	600 W
Substrate bias	25 W
Set	4 (toal 248 min)

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Table S2. Electrochemical parameters for the redox behavior (10 mM $K_4Fe(CN)_6$ in 1M KCl solution with the BDD chip electrode) obtained from Figure 3a.

Scan rate, v (mV/s)	10	20	50	100
Anodic peak potential, E_{pa} (mV)	278	284	291	299
Cathodic peak potential, E_{pc} (mV)	198	202	197	191
Half peak potential, $E_{1/2}$ (mV)	238	243	244	245
Anodic peak current, I_{pa} (μA)	8.92	12.3	18.0	23.7
Cathodic peak curent, I_{pc} (μA)	-9.13	-12.0	-17.3	-22.3
Ratio of peak currents, I_{pa}/I_{pc}	-0.98	-1.04	-1.05	-1.07
Calcurated anodic peak current, I_{pa}' (μA)	8.68	12.3	19.4	27.4