Supporting Information

Table S1. Operating parameters for NIS-enhanced DBD plasma-CVG–AFS

Parameter of DBD plasma-CVG-AFS (Hg)	Description	Parameter of DBD plasma-CVG-AFS (Cd)	Description
Lamp current (mA)	30	Lamp current (mA)	60
Photomultiplier voltage (V)	280	Photomultiplier voltage (V)	290
Atomizer observation height (mm)	10	Atomizer observation height (mm)	10
Flow rate of the shielding gas (mL min^{-1})	900	Flow rate of the shielding gas (L min^{-1})	900
Read mode	Peak height	Read mode	Peak height
Sample flow rate (mL min^{-1})	3.0	Sample flow rate (mL min^{-1})	3.7
Sample loop (μL)	300	Sample loop (μL)	300
Discharge gas flow rate (mL min^{-1})	200	Discharge gas flow rate (mL min^{-1})	400
Discharge power (W)	25	Discharge power (W)	25
pH	5	pH	7
Hydrogen flow rate (mL min^{-1})	0	Hydrogen flow rate (mL min^{-1})	60

Fig. S1. Effect of Triton X-114/Tween-20 concentration on the fluorescence intensities of Cd and Hg (1 μg L^{-1} each). (Cd Ar flow rate: 400 mL min^{-1}, sample flow rate: 3.0 mL min^{-1}, hydrogen flow rate: 50 mL min^{-1}, pH: 7; Hg Ar flow rate: 300 mL min^{-1}, sample flow rate: 3.0 mL min^{-1}, pH: 5). Error bars in the figure represent standard deviations of the results (n=5).

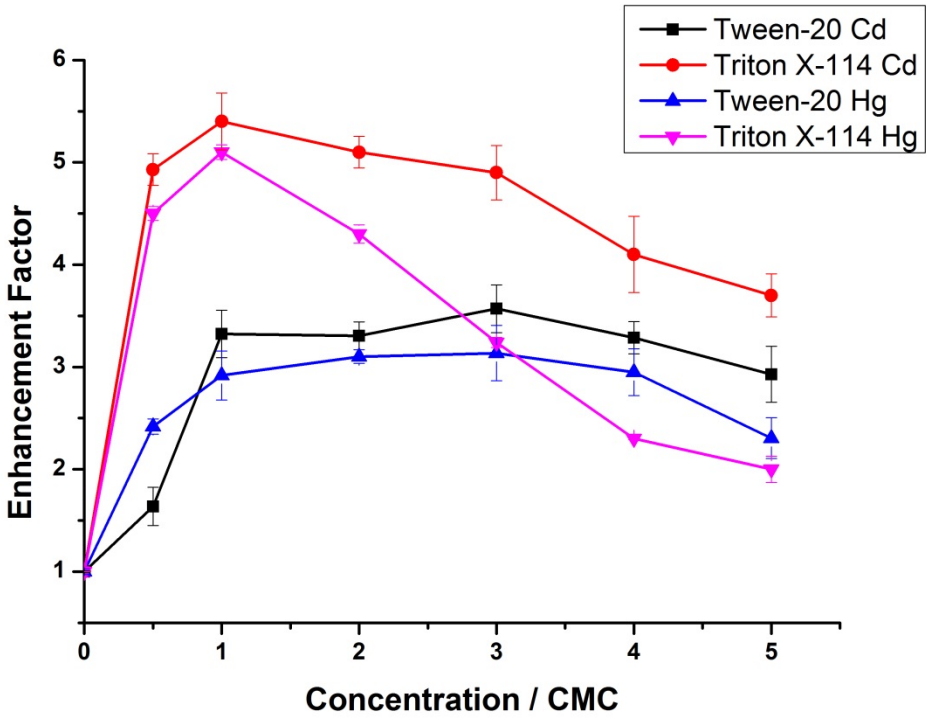


Fig. S2. Effect of Triton X-114/Tween-20 concentration on the surface tensions. Error bars in the figure represent standard deviations of the results (n=5).

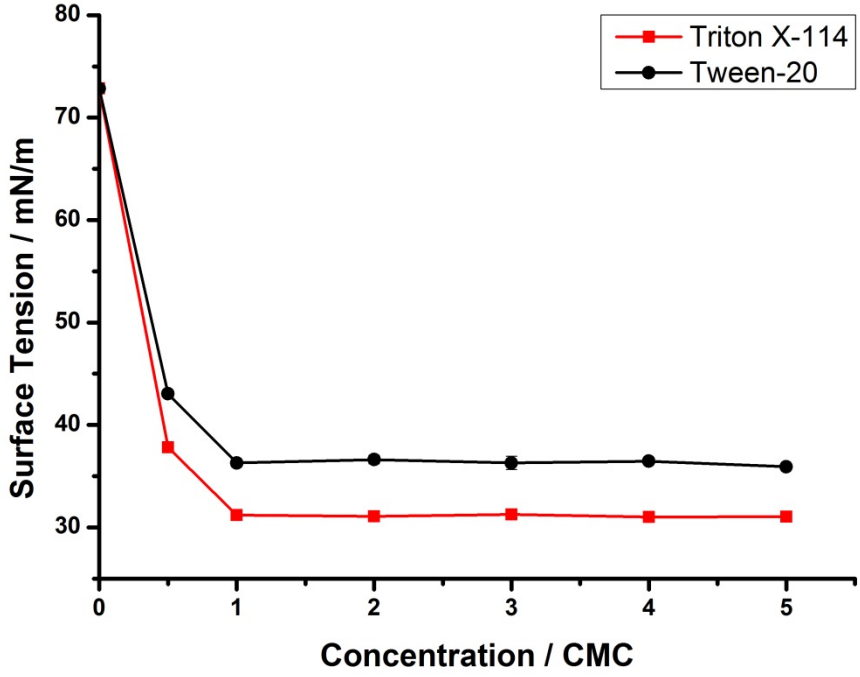


Fig. S3. Temporal fluorescence signals of Cd (1μg L^{-1}) with the heated QTA atomizer

and the QTA atomizer unheated. (A) Without Triton X-114; (B) With 1×CMC of Triton X-114. (A Ar flow rate: 500 mL min^{-1}, sample flow rate: 4.5 mL min^{-1}, hydrogen flow rate: 50 mL min^{-1}, pH: 7; B Ar flow rate: 400 mL min^{-1}, sample flow rate: 3.7 mL min^{-1}, hydrogen flow rate: 60 mL min^{-1}, pH: 7).

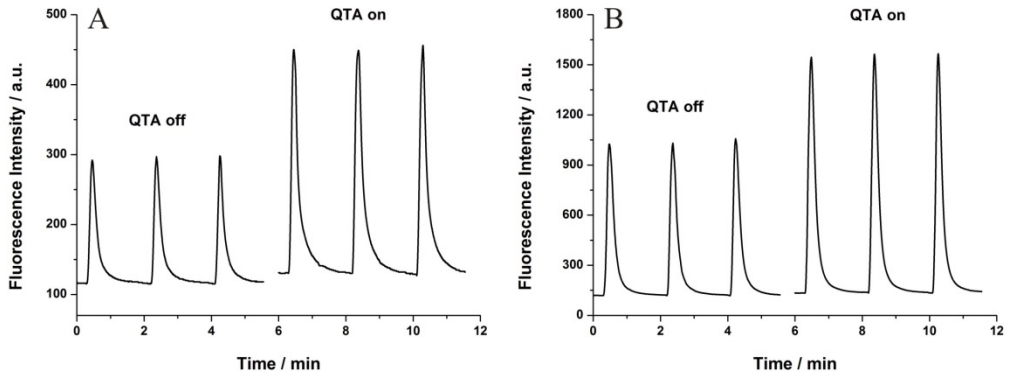
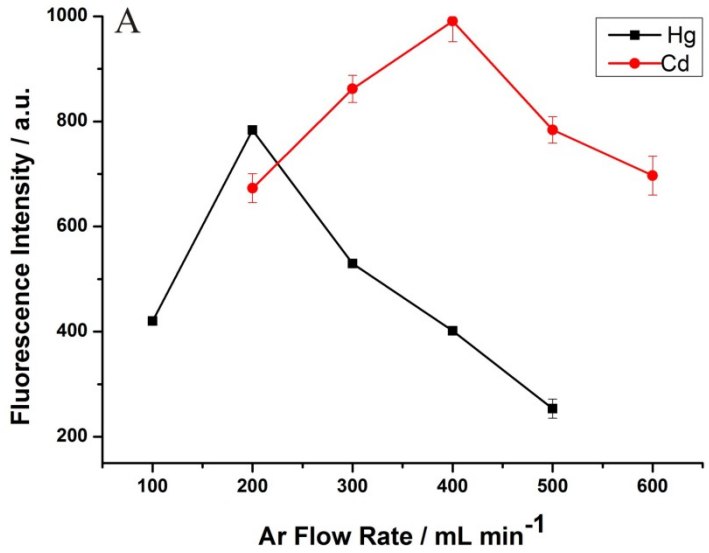
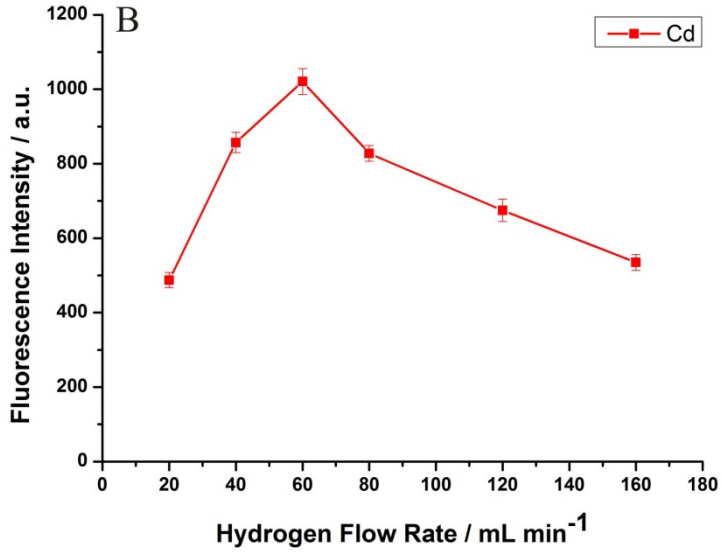
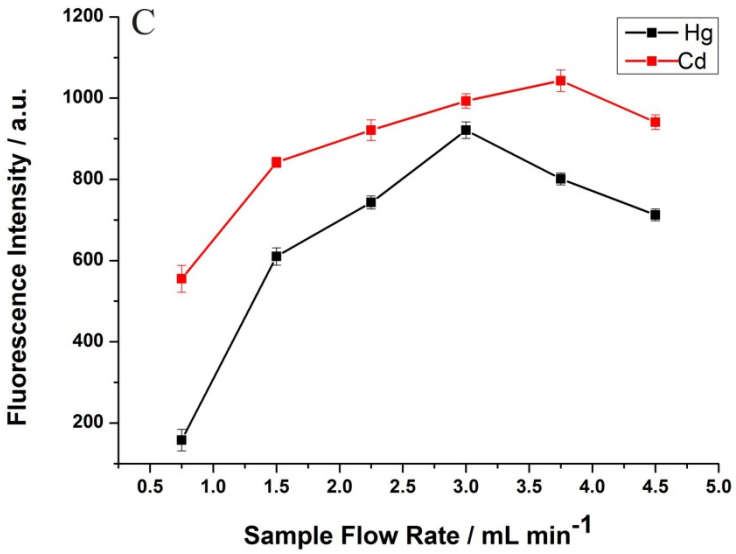


Fig. S4. A. Effect of Ar flow rate on the fluorescence signals of Cd and Hg (1 μg L^{-1} each), (Cd sample flow rate: 3.0 mL min^{-1}, hydrogen flow rate: 50 mL min^{-1}, pH: 7; Hg sample flow rate: 3.0 mL min^{-1}, pH: 5) B. Effect of H_2 flow rate on the fluorescence signals of Cd (1 μg L^{-1}), (Cd Ar flow rate: 400 mL min^{-1}, sample flow rate: 3.0 mL min^{-1}, pH: 7); C. Effect of sample flow rate on the fluorescence signals of Cd and Hg(1 μg L^{-1} each) (Cd Ar flow rate: 400 mL min^{-1}, hydrogen flow rate: 60 mL min^{-1}, pH: 7; Hg Ar flow rate: 200 mL min^{-1}, pH: 5). Error bars in the figure represent standard deviations of the results (n=5).


A
Hg
Cd
Fluorescence Intensity / a.u.
1000
800
600
400
200
100
200
300
400
500
600
Ar Flow Rate / mL min-1


B
Cd
Fluorescence Intensity / a.u.
1200
1000
800
600
400
200
0
0
20
40
60
80
100
120
140
160
180
Hydrogen Flow Rate / mL min-1


C
Hg
Cd
Fluorescence Intensity / a.u.
1200
1000
800
600
400
200
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
Sample Flow Rate / mL min-1