

Supporting Information

***Miscanthus* grass derived carbon dots to
selectively detect Fe³⁺ ions**

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Table S1: Comparison of the detection of Fe³⁺ ions using different synthesis methods

Method of Synthesis	Material / Probe	Linear Range ($\mu\text{M L}^{-1}$)	Detection Limit ($\mu\text{M L}^{-1}$)	Reference
Hydrothermal	Carbon dots	-	1	1
Hydrothermal	Carbon quantum dots	0–50	1.3	2
Liquid N ₂ Freezed	Carbon dots	12.5–100	9.97	3
Comprised pyrolysis	N and S co-doped CDs	1–1000	0.81	4
Colorimetric	Functionalized Au NPs	-	5.83	5
Thermal pyrolysis	Carbon dots	2–200	0.67	6
Thermal pyrolysis	Graphene quantum dots	4–1800	1.2	7
Thermal pyrolysis	Carbon quantum dots	0–300	13.68	8
Hydrothermal	N-doped carbon dots	1–250	0.52	9
-	Ir(III)-based luminescent	10–1500	2.9	10
Electropolymerization	Polymer film	10–1300	5.3	11
Hydrothermal	FNCDs	0–25	0.9	12
Thermal	N-doped <i>Miscanthus</i> carbon dot	0-500	0.02	This work

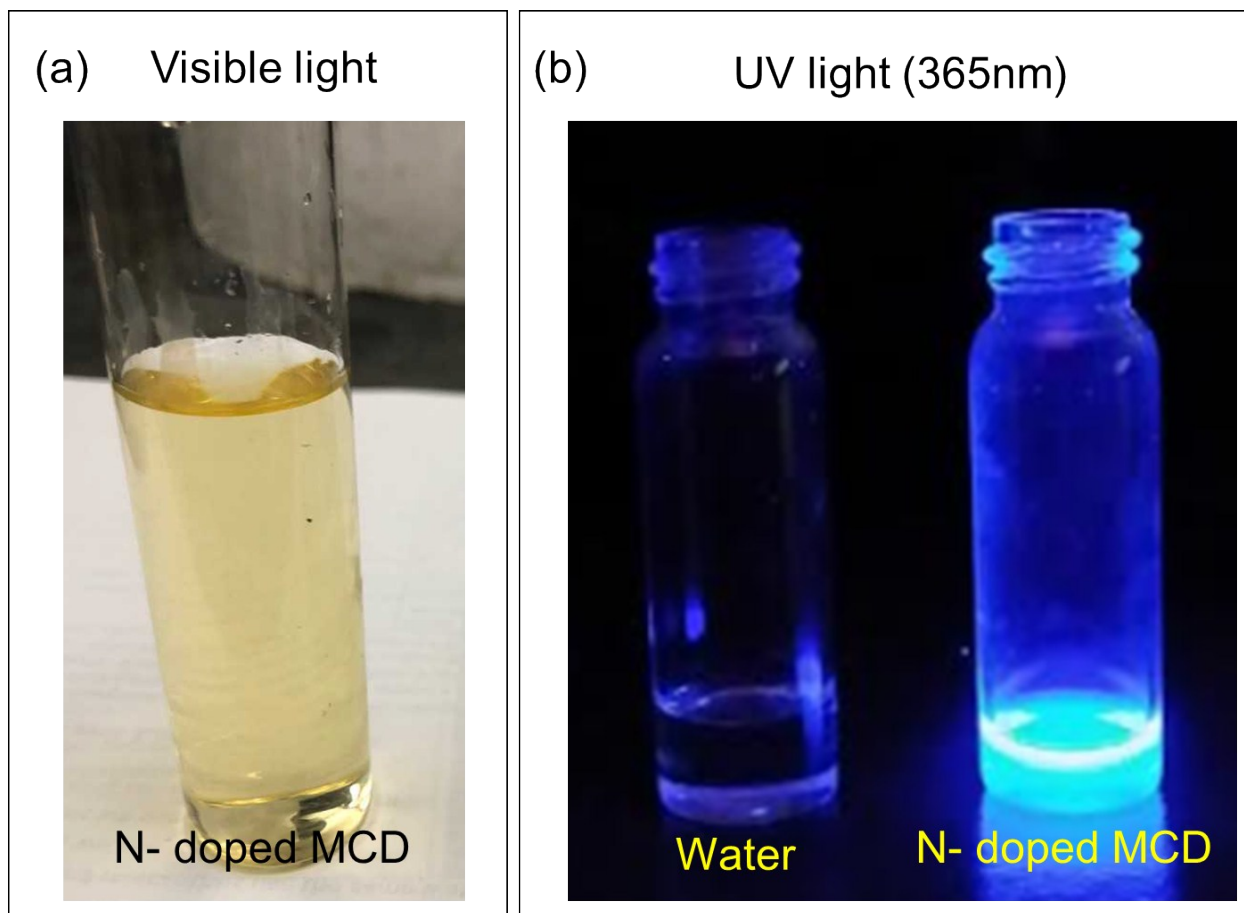


Figure S1: (a) digital image of N-doped MCD aqueous dispersion under visible light and (b) digital images of water and N-doped MCD aqueous dispersion under UV light (365 nm); N-doped MCD is showing blue fluorescent under UV light.

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