Electronic Supplementary Material (ESI) for Analyst.

Catalytical feature from optical nanoprobes of boron nitride quantum dots in the presence of Cu^{2+} for the determination of dopamine

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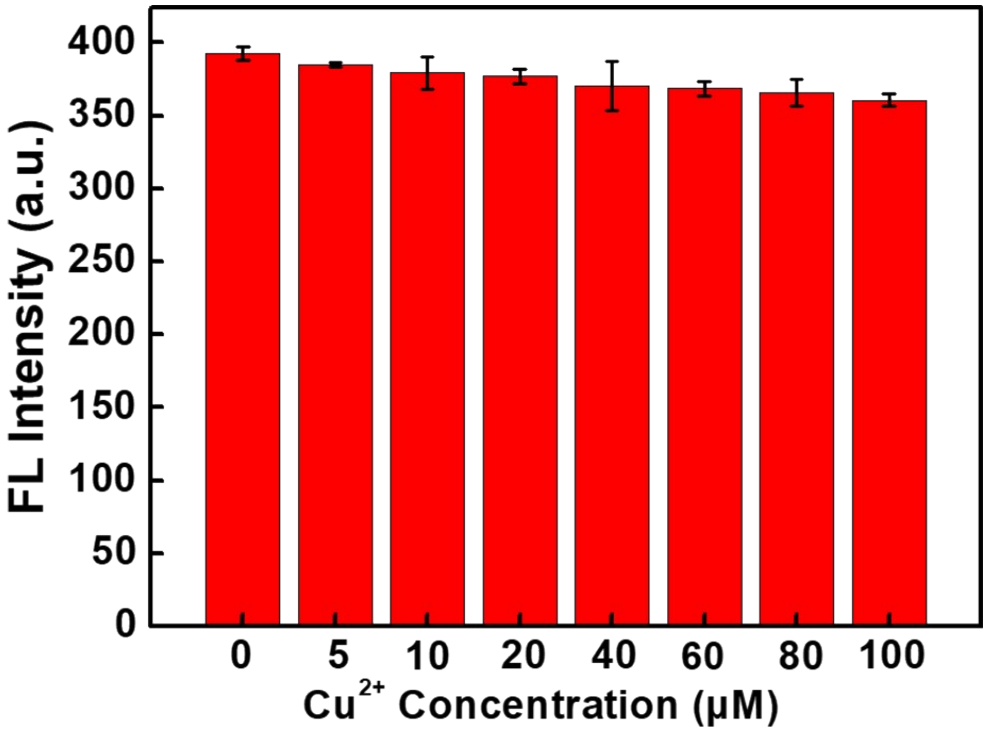

Figure S1. FL intensity of BNQDs excited at 310 nm in the presence of different concentrations of Cu^{2+} from 0 to 100μM.

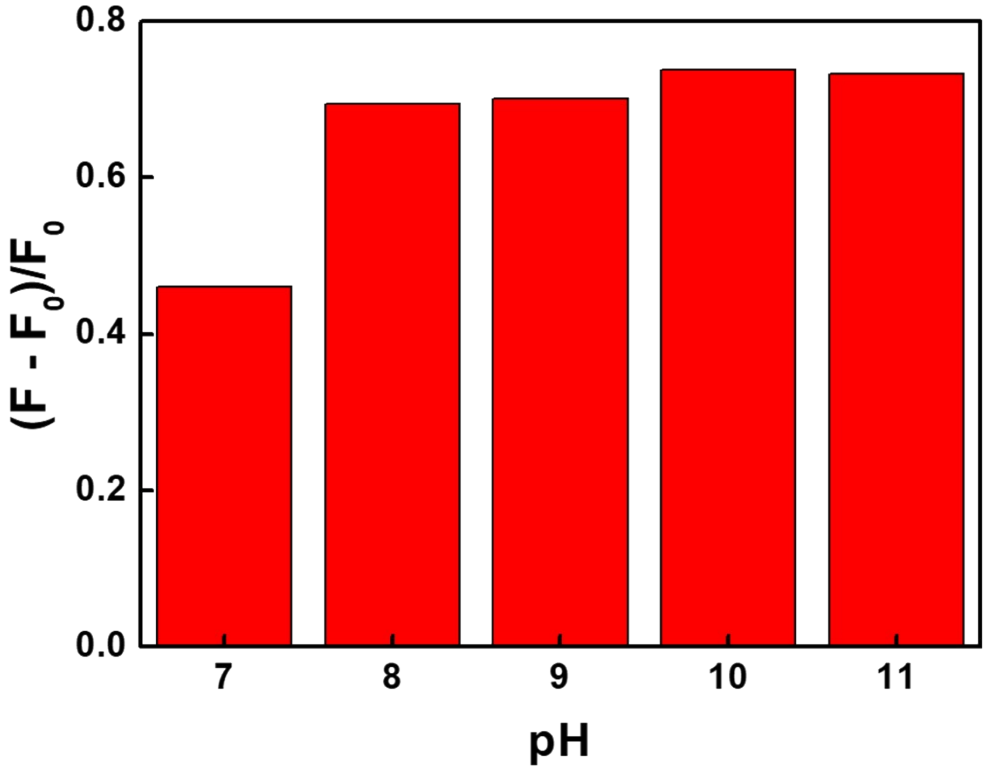

Figure S2. The effect of pH on the fluorescence intensity of the sensing system.

Determination method	Materials	LOD (μM)	Reference
colorimetry	N-B CQDs	3.312	1
colorimetry	Ag@PDBA-DSP	6.47	2
Electrochemistry	2D Hexagonal boron nitride	0.65	3
Electrochemistry	Hierarchical nanoporous PtTi alloy	3.2	4
Fluorescence	C3N4	0.03	5
Fluorescence	CuInS2	0.2	6
Fluorescence	CQDs	200	7
Fluorescence	Pdots@AMP-Cu	4	8
Fluorescence	BNQDs	0.49	This work

Table S1. Comparison of different methods for DA determination.

References

1. S. Dadkhah, A. Mehdinia, A. Jabbari and A. Manbohi, *Microchim. Acta,* 2020, **187**, 569.

2. S. Palanisamy, X.H. Zhang and T. He, *Sci. China Chem.*, 2016, **59**, 387-393.

3. A.F. Khan, D.A.C. Brownson, E.P. Randviir, G.C. Smith and C.E. Banks, *Anal. Chem.*, 2016, **88**, 9729-9737

4. D.Y. Zhao, G.L. Yu, K.L. Tian and C.X. Xu, *Biosens. Bioelectron.*, 2016, **82**,119-126.

5. H. Li, M.M. Yang, J. Liu, Y.L. Zhang, Y.M. Yang, H. Huang, Y. Liu, Z.H. Kang, *Nanoscale,* 2015, **7,** 12068-12075.6. S.Y. Liu, F.P. Shi, X.J. Zhao, L. Chen and X.G. Su, *Biosens. Bioelectron.,* 2013, **47**, 379-384.

7. D. Bharathi, B. Siddlingeshwar, R.H. Krishna, V. Singh, N. Kottam, D.D. Divakar and A.A. Alkheraif, *J. Fluoresc.*, 2018, **28**, 573-579.

8. H. Huang, J. Bai, J. Li, L.L. Lei, W.J. Zhang, S.J. Yan and Y.X. Li, *Anal. Bioanal. Chem.,*2020, **412**,5291-5297.