

Supplementary Information

Fluorescent sensor constructed from nitrogen-doped carbon nanodots (N-CDs) for pH detection in synovial fluid and urea determination

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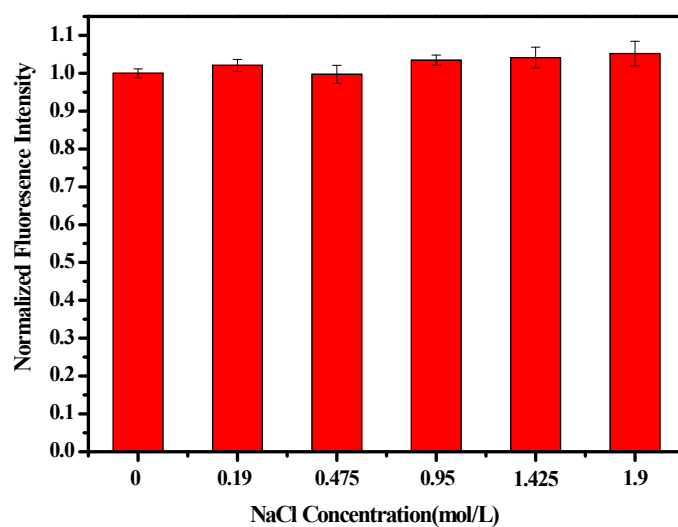


Figure S1. The fluorescence stability of N-CDs in different concentrations of NaCl

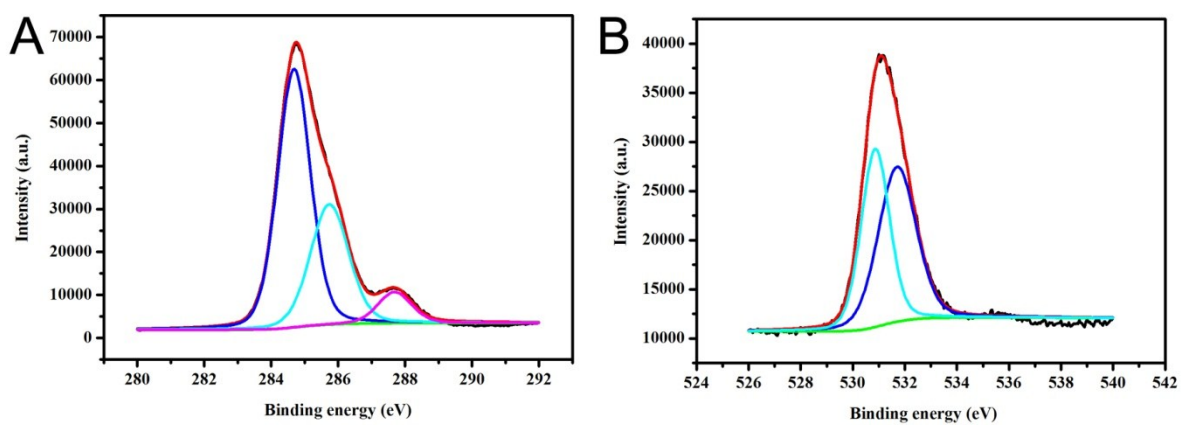


Figure S2. High-resolution XPS survey of C1s (A) and O1s (B)

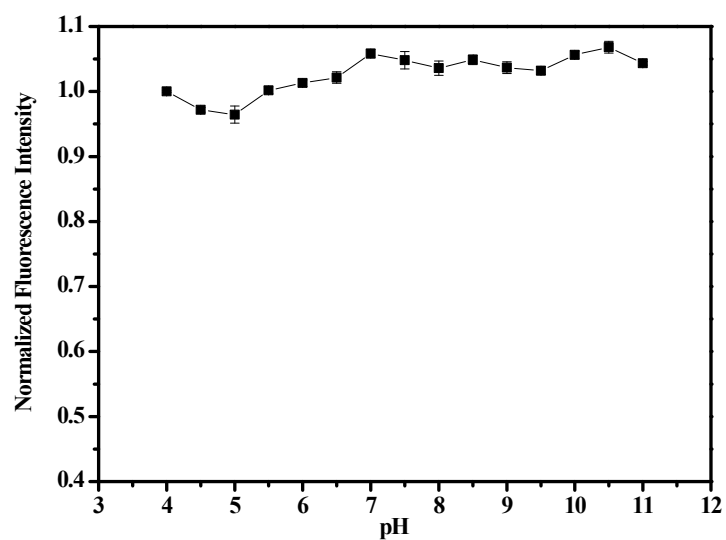


Figure S3. Relationship between the fluorescence intensities of pure CDs and pH values

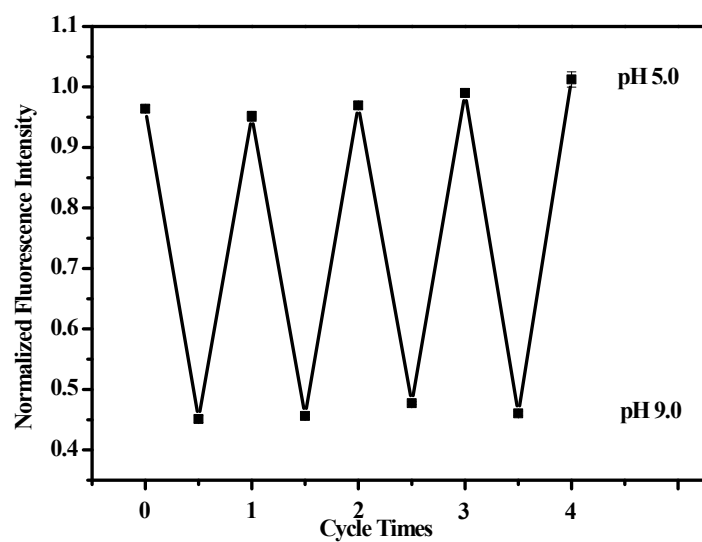


Figure S4. Four cycle times of the reversible pH-response of the fluorescence response of N-CDs between the pH values of 5.0 and 9.0

Table S1 Comparison in the analytical performance of pH detection through
luminescent materials

Luminescent materials	Linear range	Real application	Ref.
N doped carbon quantum dots	pH5.0 – pH13.5	Not mentioned	1
N and B co-doped Carbon dots	pH4.4 – pH7.0	Not mentioned	2
N,S co-doped carbon quantum dots	pH5.5 – pH7.0	Not mentioned	3
N-doped carbon dots	pH2.0 – pH14.0	Real water samples	4
polymer-based nanoparticles	pH5.0 - pH8.0	Intracellular pH Measurements	5
Carbon dots	pH5.2 – pH8.8	Intracellular pH Imaging	6
Nitrogen doped carbon dots	pH3.0 – pH9.0	pH detection in synovial fluid	This work

Table S2 Comparison in the analytical performance of urea detection through
luminescent materials

Luminescent materials	Linear range (mM)	Limit of detection (mM)	Real applicatio n	Ref.
Luminescent copper nanoclusters	0.25-5	0.01	serum	7
Urease-Au clusters mixture	not mentioned	1	serum	8
Graphene quantum dots	0.1-100	0.01	serum	9
CdSe/ZnS quantum dots	0.01-120	0.01	Not mentioned	10
N-acetyl-L-cysteine-Au nanoclusters	0.055-0.55	0.055	urine	11
Nitrogen doped carbon dots	0-10	0.072	serum	This work

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