Electronic Supplementary Material (ESI) for Analyst.

Supporting Information

Fluorescence lifetime-based pH sensing by Platinum Nanoclusters

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Table S1. Lifetimes and normalized pre-exponentials of Pt NCs at different pH values

PH=3.12		PH=4.30		PH=5.18		PH=5.58	
τ (ns)	pre-expon	τ (ns)	pre-expon	τ (ns)	pre-expon	τ (ns)	pre-expon
21.0137	0.9116	21.1251	0.8976	20.9394	0.8924	19.7137	0.8977
3.5539	0.0884	3.8493	0.1024	3.5778	0.1076	3.2658	0.1023
PH=6.03		PH=6.31		PH=6.62		PH=6.81	
τ (ns)	pre-expon	τ (ns)	pre-expon	τ (ns)	pre-expon	τ (ns)	pre-expon
19.2245	0.8712	17.8839	0.8611	16.2527	0.8428	14.9474	0.8166
3.5389	0.1288	3.3102	0.1389	3.2435	0.1527	3.1225	0.1834
PH=7.18		PH=7.54		PH=7.88		PH=8.44	
τ (ns)	pre-expon	τ (ns)	pre-expon	τ (ns)	pre-expon	τ (ns)	pre-expon
13.3660	0.7647	12.2624	0.7191	11.3411	0.7049	11.1339	0.6509
3.0706	0.2353	3.0425	0.2809	2.6488	0.2951	3.02220	0.3491
PH=9.09							
τ (ns)	pre-expon						
10.3736	0.6544						
2.6337	0.3456						

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Table S2. Comparison of different methods for the determination of pH

Probe	Analytical signal	pH Linear range	Reference
Functionalized Tristyrylbenzene	Fluorescence lifetime	1.3-3.2, 5.7-7.2	1
N-hydroxyethyl-aminoethyl - Perylene Bisimide	Fluorescence lifetime	6-8	2
Anionic Perylene Bisimide	Fluorescence lifetime	4.4-8.0	3
CdSe/ZnS QDs	Fluorescence lifetime	5.2-6.9	4
Pt NCs	Fluorescence lifetime	6.02-7.54	This work
DHLA-Ag NCs	Fluorescence intensity	4.0-8.0	5
Grapheme quantum dots	Fluorescence intensity	1.81-8.96	6
AuCu NCs	Fluorescence intensity	3.0-7.0	7
N-acetyl-L-cysteine AuNCs	Fluorescence intensity	6.05-6.40	8
Cy3-A_{20}-BHQ2	Fluorescence intensity	3.4-6.1	9
Zr-MOFs	Fluorescence intensity	1-8	10
Carbon nanoparticles	Fluorescence intensity	5.25-6.75	11

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