Electronic Supplementary Information

Design of highly sensitive fluorescence sensor and its application based on inhibiting $NaIO_4$ oxidizing rhodamine 6G

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Supporting Results

Table S1. Optimization of the concentration and volume of reagents

Reagents	Concentrations and volumes	The ΔF in Rhod.6G-aIO_4- buffer solution- TBS system	Optimal
Rhod.6G ($molL^{-1}$)	10^{-3},10^{-4},10^{-5} ,10^{-6}	8.1, 36.6, 4.7, 2.2	10^{-4}
(mL)	0.50,1.00,1.50,2.00,2.50	9.6,22.7,38.9,21.8,12.3	1.50mL
$NaIO_4$ (%) (mL)	0.05,0.10,0.50,1.00,3.00 0.50,1.00,1.50,2.00,2.50	10.0,18.2,36.2,8.5,4.1 12.2,25.1,38.7,18.4,10.0	0.50％ 1.50mL
Buffer solution (mL)	0.50,1.00,1.50,2.00,2.50,3.00	0.6,1.4,19.5,38.2,11.7,3.5	2.00 mL

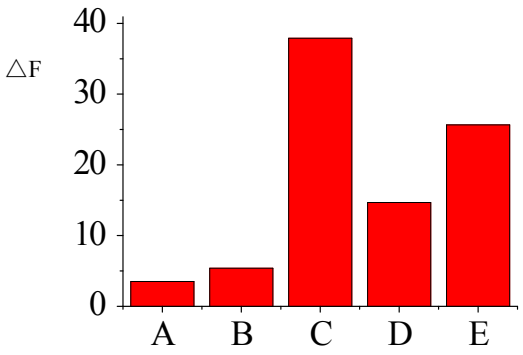

Fig. **S1** Effects of luminescence substrates on Δ*F* for the system (A, B and C are FITC, Rhod.6G A and R, respectively.)

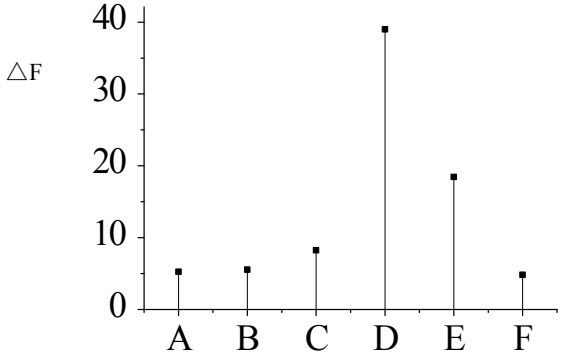

Fig. **S2** Effects of oxidants on Δ*F* for the system (A, B, C, D,E and C are H_2O_2, KIO_4, $K_2S_2O_8$, $KClO_3$ and $KBrO_3$, respectively.)

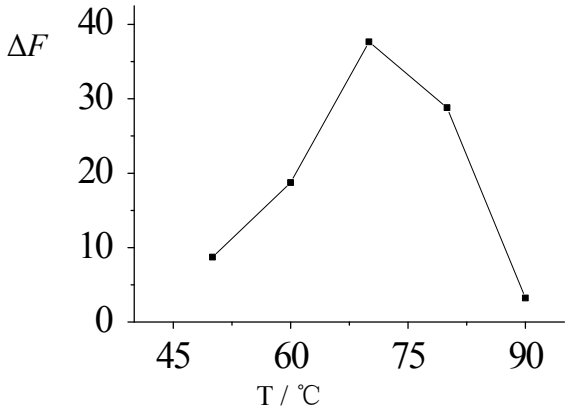

Fig. **S3** Effects of reaction temperature on Δ*F* for the system

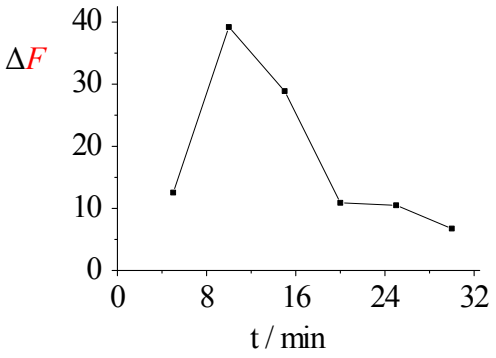

Fig. **S4** Effect of reaction time on Δ*F* for system

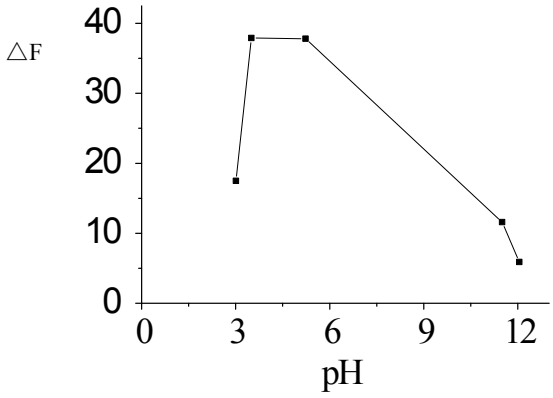

Fig. **S5** Effect of reaction acidity on Δ*F* for system

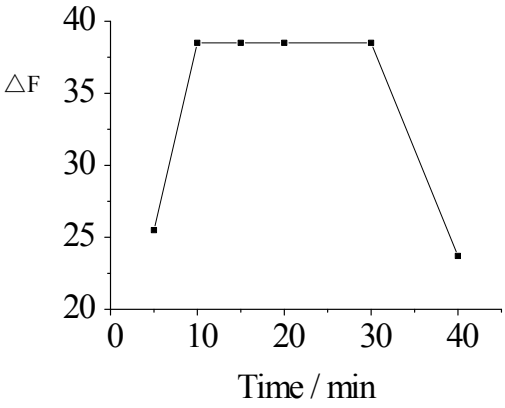

Fig. **S6** Effect of standing time on Δ*F* for system