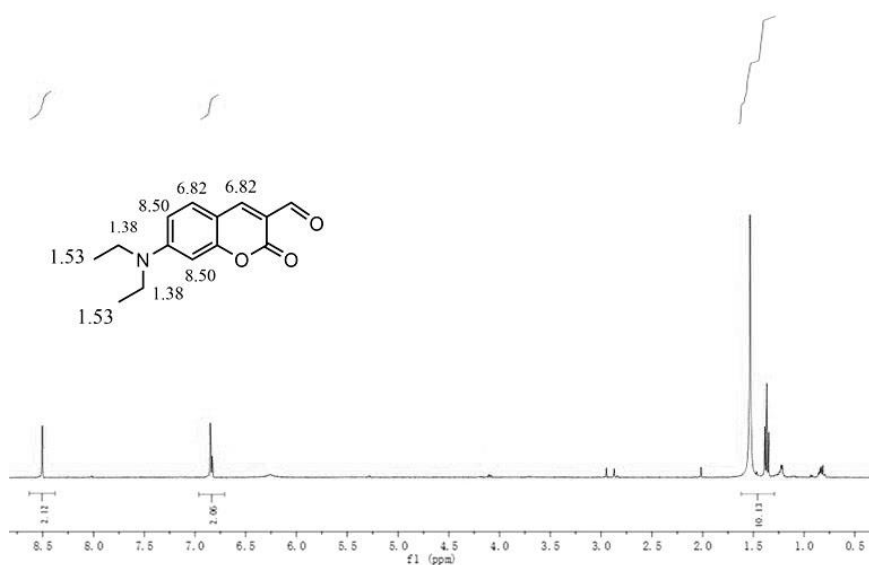


## Supplementary Information

### A Novel Nanofibrous Film Chemosensor for Detecting and Adsorbing Fe<sup>3+</sup>

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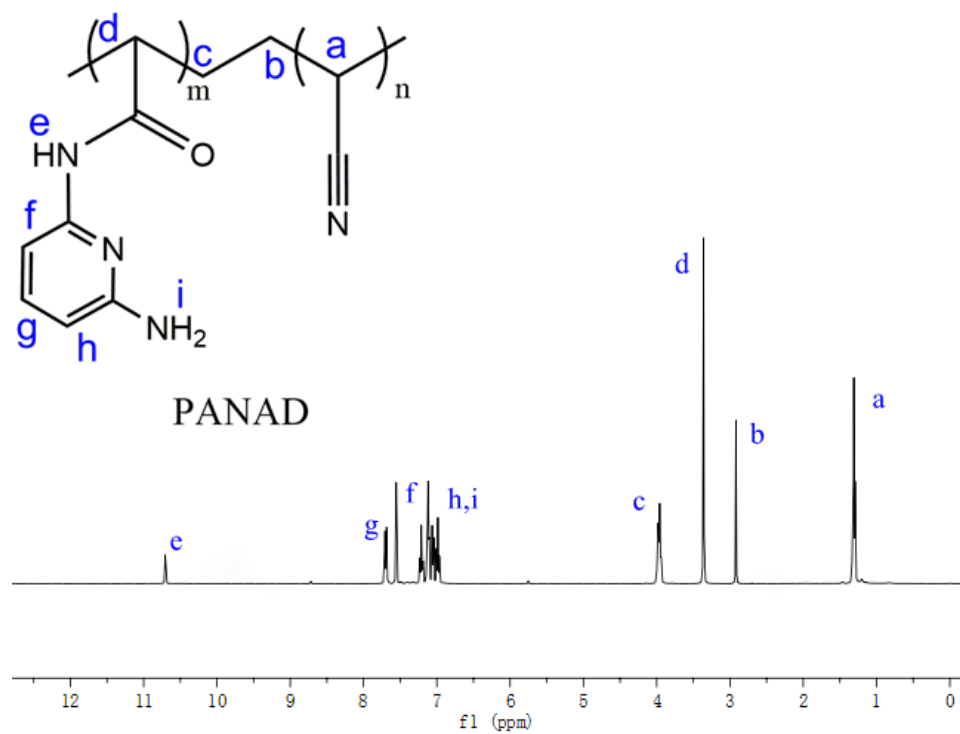
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**Figure S1.** <sup>1</sup>H NMR spectrum (300 MHz, CDCl<sub>3</sub>) of 7-(diethylamino)-3-formyl-coumarin.

## Characterization of PANAD

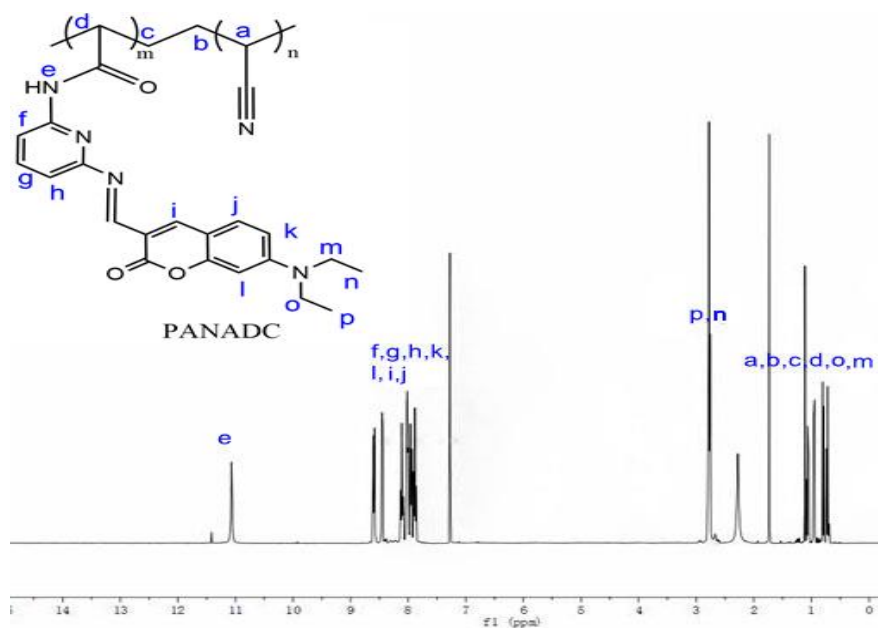
IR (KBr)  $\nu / \text{cm}^{-1}$  2862, 2226, 1659, 1481, 1375, 1242, 1120, 981, 739;  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ )  $\delta$  1.24 (m, nH, CH), 2.89 (m, 2H,  $\text{CH}_2$ ), 3.31 (m, mH, CH), 3.94 (m, 2H,  $\text{CH}_2$ ), 6.96 (m, mH, Ph-H), 7.01 (m, mH, Ph-H), 7.60 (m, mH, Ph-H), 7.71 (d, mH,  $J$  3.3 Hz, Ph-H), 10.69 (s, mH, NH).



**Figure S2.**  $^1\text{H}$  NMR spectrum (300 MHz,  $\text{CDCl}_3$ ) of PANAD.

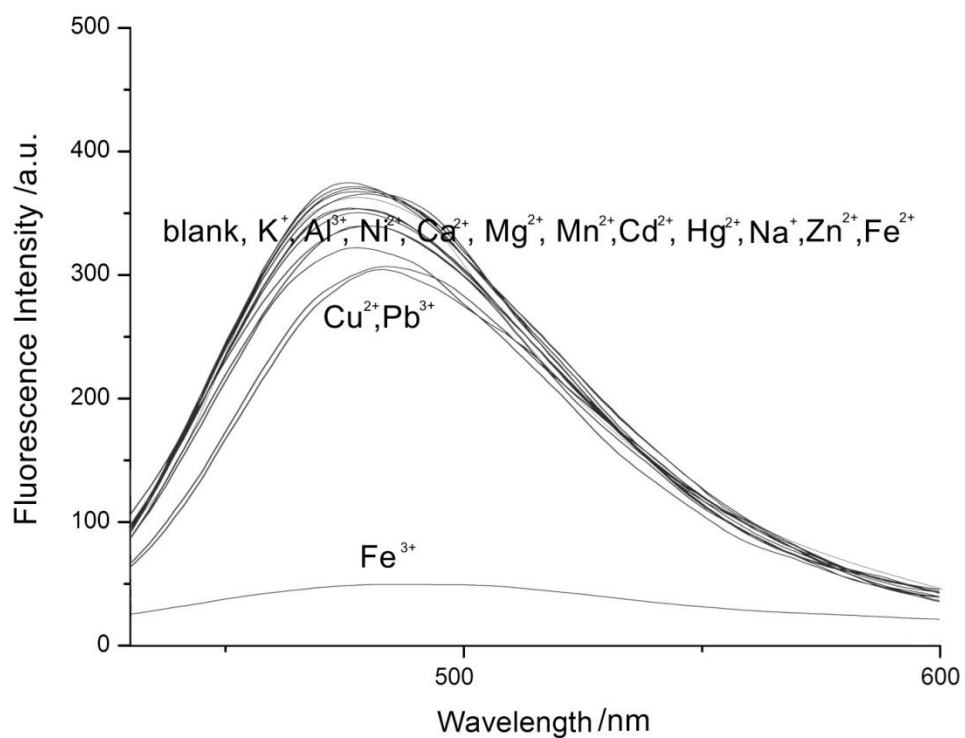
## Characterization of PANADC

IR (KBr)  $\nu / \text{cm}^{-1}$  2865, 2228, 1722, 1659, 1490, 1377, 1250, 1132, 984, 739;  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ )  $\delta$  0.63 (m, nH, CH), 0.94 (s, 2H,  $\text{CH}_2$ ), 1.02 (s, 2mH,  $\text{CH}_2$ ), 1.68 (s, 2mH,  $\text{CH}_2$ ), 2.13 (s, 2H,  $\text{CH}_2$ ), 2.76 (m, 3mH,  $\text{CH}_3$ ), 7.23 (s, mH, Ph-H), 7.86 (m, mH, Ph-H), 7.90 (m, mH, Ph-H), 8.01 (m, mH, Ph-H), 8.09 (m, mH, Ph-H), 8.42 (s, mH, Ph-H), 8.59 (d, mH,  $J$  2.7 Hz, Ph-H), 11.04 (s, mH, NH).

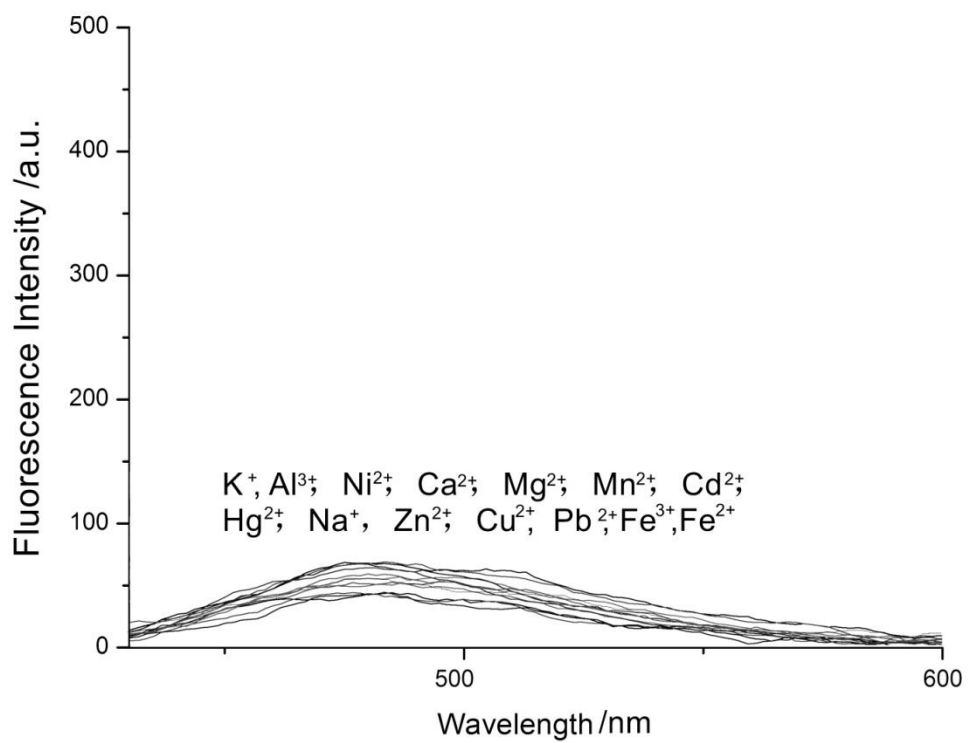


**Figure S3.**  $^1\text{H}$  NMR spectrum (300 MHz,  $\text{CDCl}_3$ ) of PANADC.

Fluorescence response of PANADC nanofibrous film



**Figure S4.** Fluorescence intensities of PANADC nanofibrous film in the presence of various metal ions.



**Figure S5.** Fluorescence intensities of competition experiments.

**Table S1.** Data of Figure 5

Concentration (Fe <sup>3+</sup> / 10 <sup>-6</sup> M)	1				2				3				4			
Fluorescence intensity at 467 nm / a.u	382	377	348	377	363	343	370	351	332	352	344	321				
Average value	369				361				351				339			
Concentration (Fe <sup>3+</sup> / 10 <sup>-6</sup> M)	5				6				7				8			
Fluorescence intensity at 467 nm / a.u	342	327	318	333	320	307	323	309	295	319	299	279				
Average value	329				320				309				299			
Concentration (Fe <sup>3+</sup> / 10 <sup>-6</sup> M)	9				10				11				12			
Fluorescence intensity at 467 nm / a.u	308	294	274	295	273	263	291	265	257	280	271	235				
Average value	292				277				271				262			
Concentration (Fe <sup>3+</sup> / 10 <sup>-6</sup> M)	13				14				15				16			
Fluorescence intensity at 467 nm / a.u	268	254	234	259	229	220	244	219	209	228	227	195				
Average value	252				236				224				216			
Concentration (Fe <sup>3+</sup> / 10 <sup>-6</sup> M)	17				18				19				20			
Fluorescence intensity at 467 nm / a.u	207	196	191	202	170	156	174	166	152	157	158	130				
Average value	198				176				164				148			
Concentration (Fe <sup>3+</sup> / 10 <sup>-6</sup> M)	21				22				23				24			
Fluorescence intensity at 467 nm / a.u	153	143	124	139	131	112	120	116	104	118	95	96				
Average value	140				128				114				103			
Concentration (Fe <sup>3+</sup> / 10 <sup>-6</sup> M)	25				26				27							
Fluorescence intensity at 467 nm / a.u	103	85	73	99	64	56	79	61	30							
Average value	87				73				57							

**Table S2.** Data of Figure 7

	Fluorescence intensity at 467 nm / a.u														
	Free	Na <sup>+</sup>	K <sup>+</sup>	Mg <sup>2+</sup>	Ca <sup>2+</sup>	Mn <sup>2+</sup>	Zn <sup>2+</sup>	Fe <sup>3+</sup>	Al <sup>3+</sup>	Ni <sup>2+</sup>	Cd <sup>2+</sup>	Pb <sup>2+</sup>	Cu <sup>2+</sup>	Hg <sup>2+</sup>	Fe <sup>2+</sup>
Selective experiment	375	357	349	372	341	343	320	51	358	361	340	305	301	370	358
Competitive experiment		68	57	70	58	53	52	51	56	69	54	46	48	60	58