A ratiometric selective fluorescent probe derived from pyrene for Cu^{2+} detection

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Figure S1

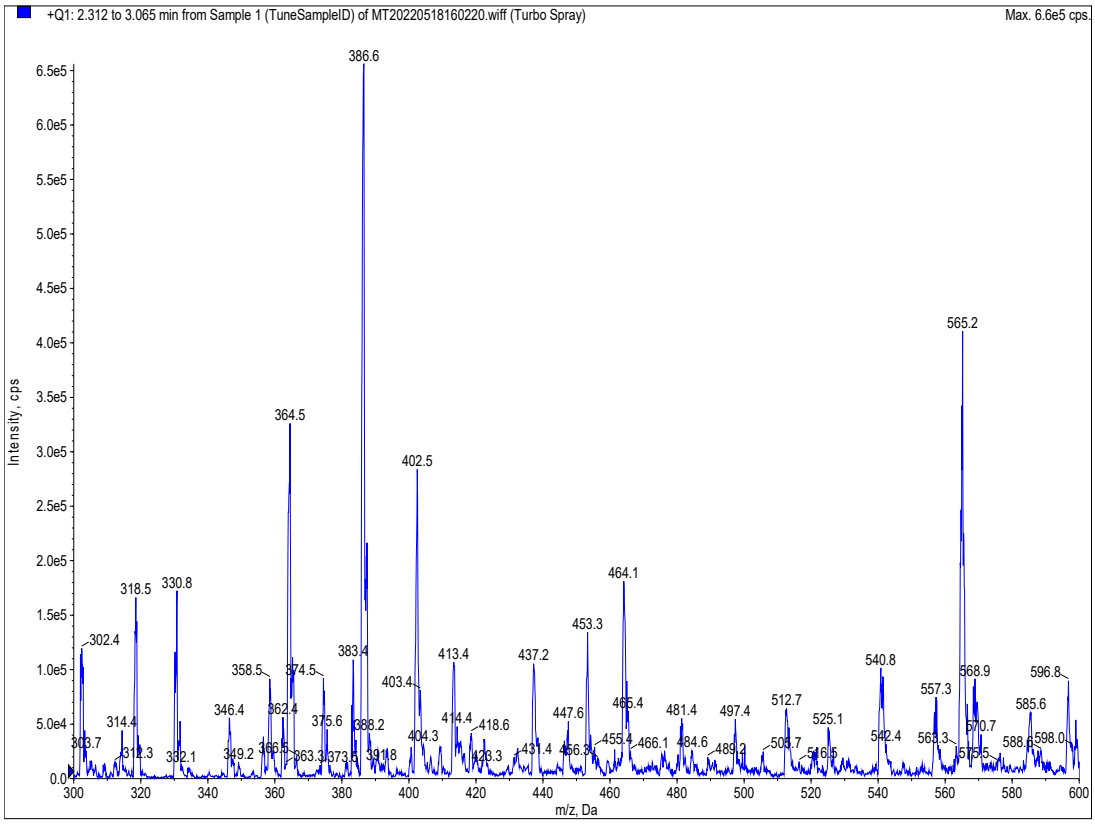
+Q1: 2.312 to 3.065 min from Sample 1 (TuneSampleID) of MT20220518160220.wiff (Turbo Spray)
Max. 6.6e5 cps.
Intensity, cps
m/z, Da
386.6
565.2
364.5
402.5
464.1
453.3
318.5
330.8
302.4
383.4
413.4
437.2
540.8
568.9
596.8
557.3
585.6
570.7
512.7
525.1
497.4
481.4
465.4
447.6
418.6
414.4
403.4
388.2
375.6
374.5
358.5
362.4
346.4
314.4
303.7
312.3
332.1
349.2
366.5
363.3
373.5
391.8
404.3
420.3
431.4
456.3
455.4
466.1
484.6
489.2
505.7
516.5
542.4
563.3
575.5
588.6
598.0

Figure S2

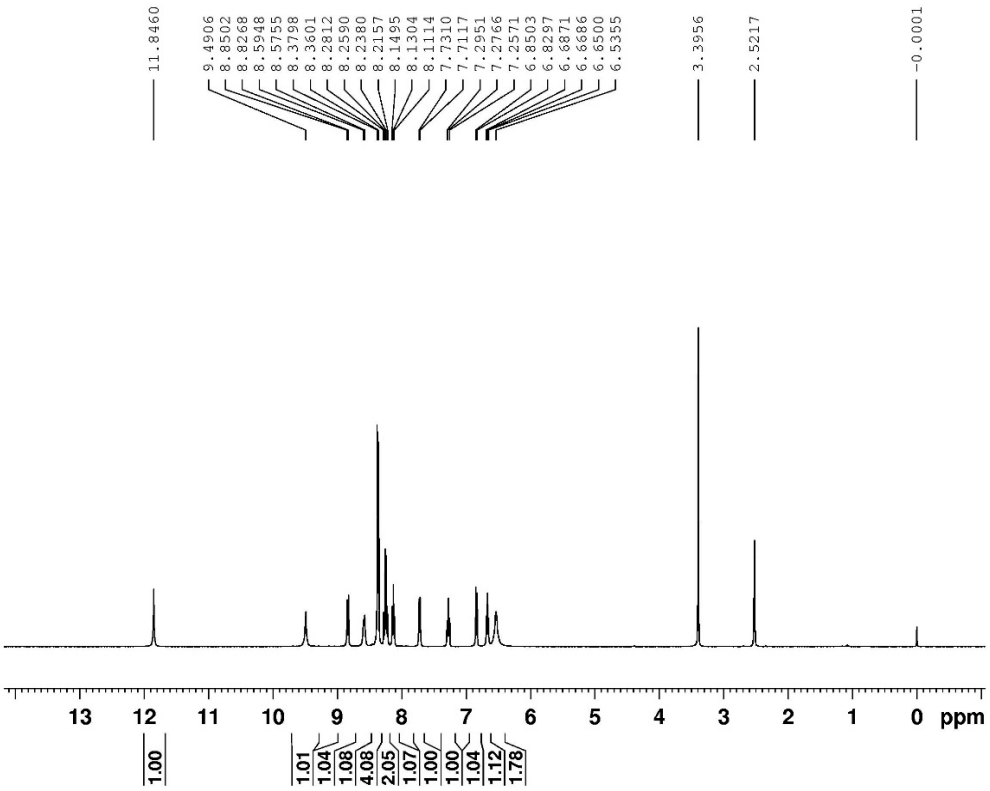
11.8460
9.4906
8.8502
8.8268
8.5948
8.5755
8.3798
8.3601
8.2812
8.2590
8.2380
8.2157
8.1495
8.1304
8.1114
7.7310
7.7117
7.2951
7.2766
7.2571
6.8503
6.8297
6.6871
6.6686
6.6500
6.5355
3.3956
2.5217
-0.0001
13
12
11
10
9
8
7
6
5
4
3
2
1
0
ppm
1.00
1.01
1.04
1.08
4.08
2.05
1.07
1.00
1.04
1.12
1.78

Figure S3

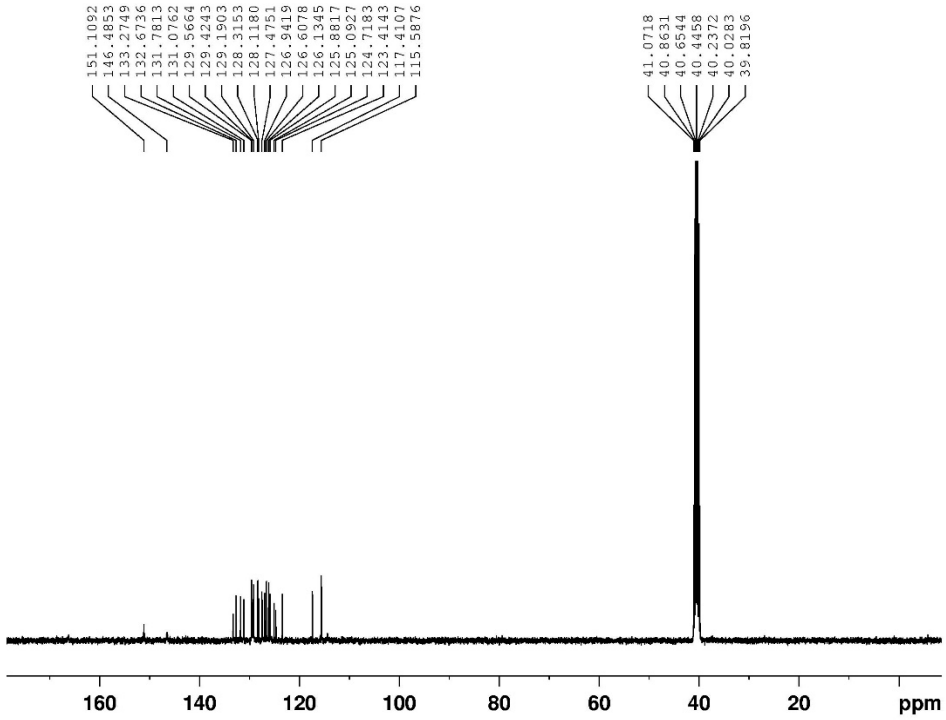
151.1092
146.4853
133.2749
132.6736
131.7813
131.0762
129.5664
129.4243
129.1903
128.3153
128.1180
127.4751
126.9419
126.6078
126.1345
125.8817
125.0927
124.7183
123.4143
117.4107
115.5876
41.0718
40.8631
40.6544
40.4458
40.2372
40.0283
39.8196
160
140
120
100
80
60
40
20
ppm

Figure S4

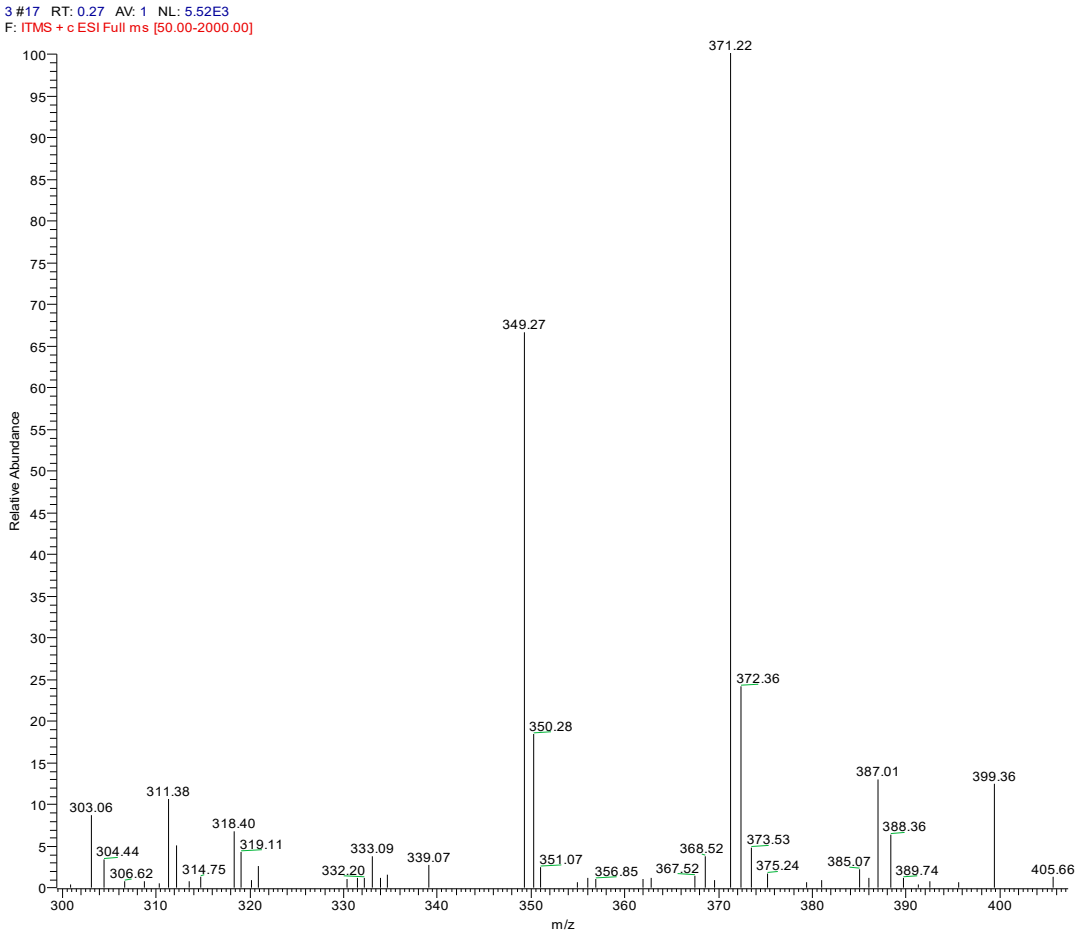
3 #17 RT: 0.27 AV: 1 NL: 5.52E3
F: ITMS + c ESI Full ms [50.00-2000.00]
Relative Abundance
m/z
371.22
349.27
372.36
350.28
387.01
399.36
388.36
303.06
311.38
318.40
319.11
333.09
339.07
304.44
306.62
314.75
332.20
351.07
356.85
367.52
368.52
373.53
375.24
385.07
389.74
405.66

Figure S5

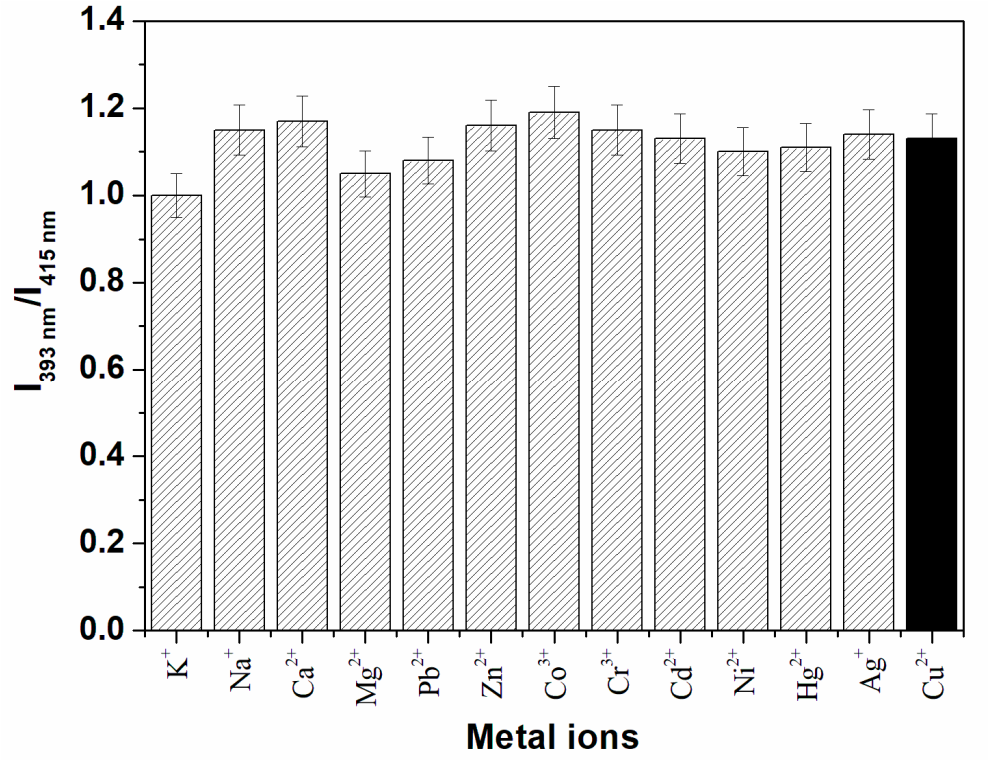
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
$I_{393\ nm}/I_{415\ nm}$
K^+
Na^+
Ca^{2+}
Mg^{2+}
Pb^{2+}
Zn^{2+}
Co^{3+}
Cr^{3+}
Cd^{2+}
Ni^{2+}
Hg^{2+}
Ag^+
Cu^{2+}
Metal ions

Figure S6

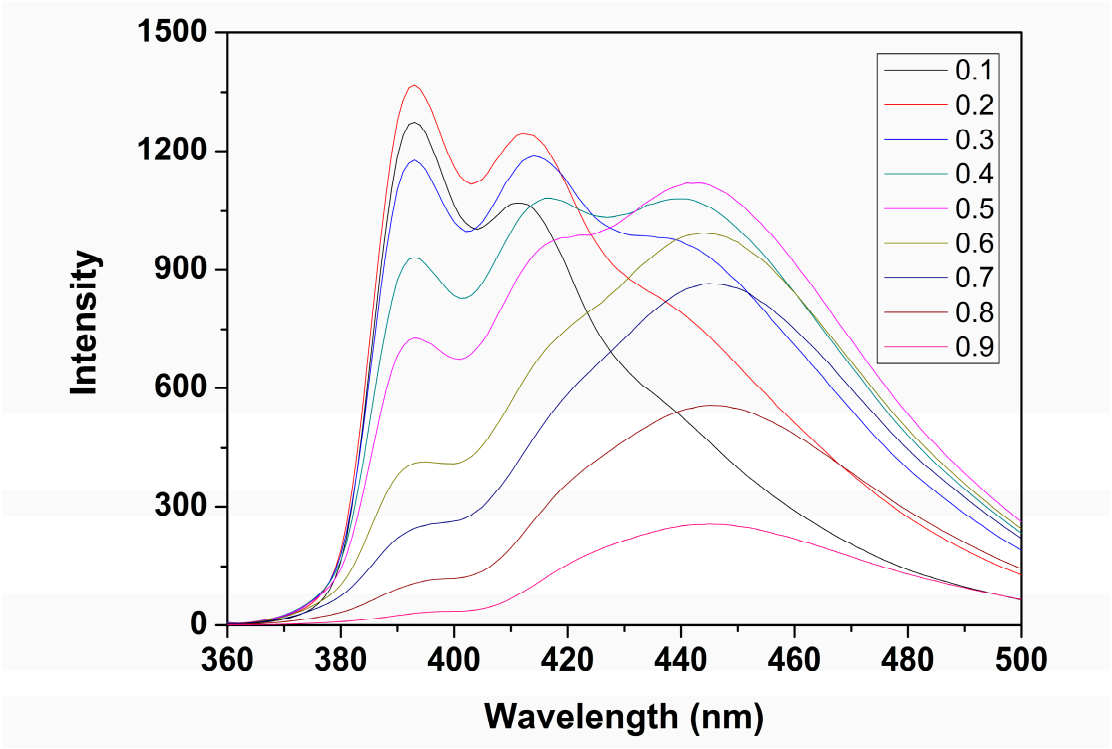
Intensity
Wavelength (nm)
0
300
600
900
1200
1500
360
380
400
420
440
460
480
500
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9

Figure S7

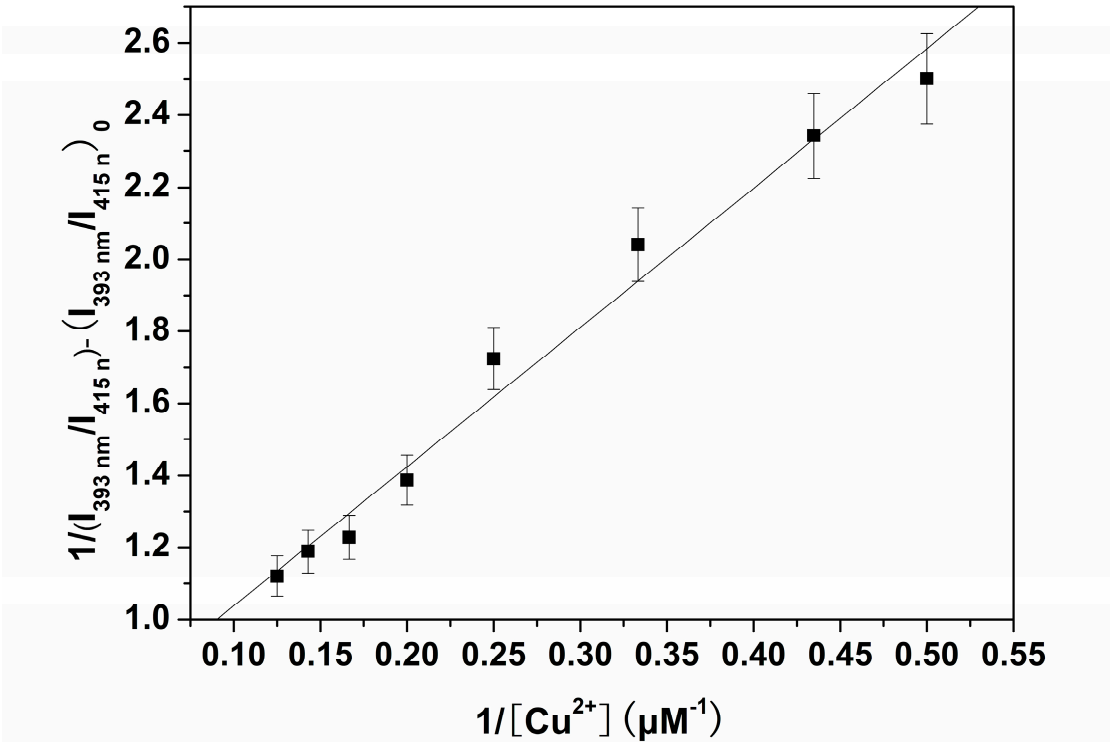
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
1/(I393 nm/I415 n)- (I393 nm/I415 n) 0
1/[Cu2+] (μM-1)

Figure S8

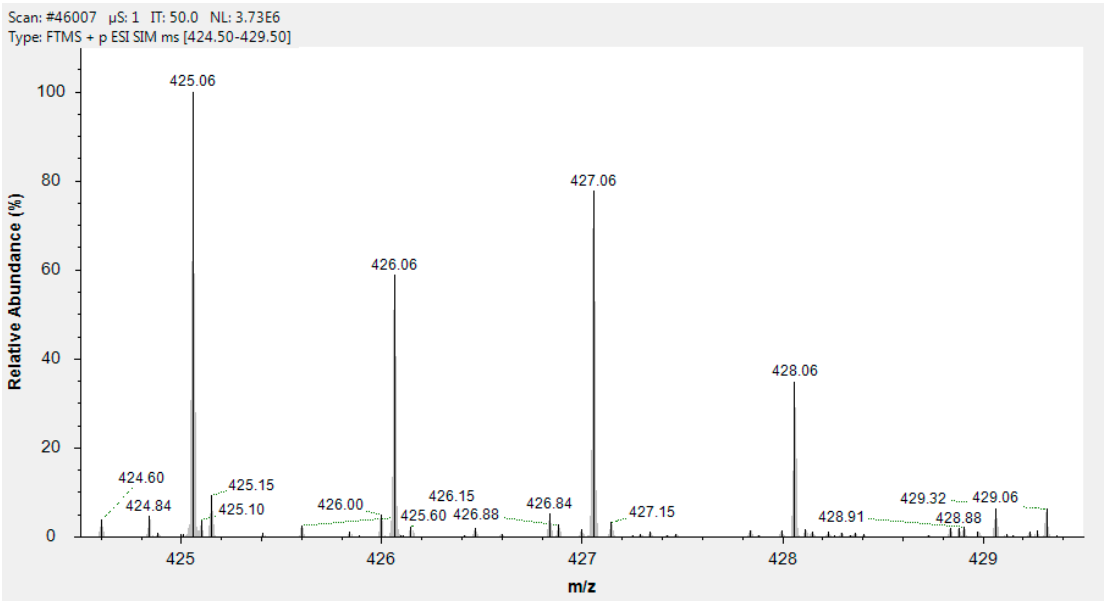
Scan: #46007 µS: 1 IT: 50.0 NL: 3.73E6
Type: FTMS + p ESI SIM ms [424.50-429.50]
Relative Abundance (%)
m/z
425.06
427.06
426.06
428.06
424.60
424.84
425.15
425.10
426.00
426.15
425.60
426.88
426.84
427.15
428.91
429.32
429.06
428.88

Figure S9