Supplementary Material (ESI) for Analytical Methods

Electronic supplementary data (ESI)

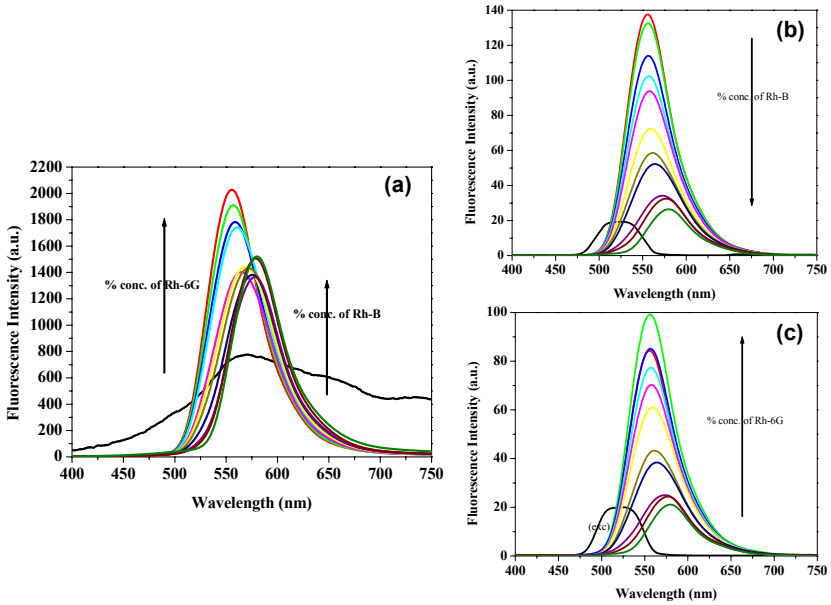

Fig S-1.A. : (a) WLEF, BPEF at the absorption maximum of (b) Rh-B and (c)Rh-6G of the bifluorophoric system Rh-B +Rh-6G in TDW (0.1% Methanol).

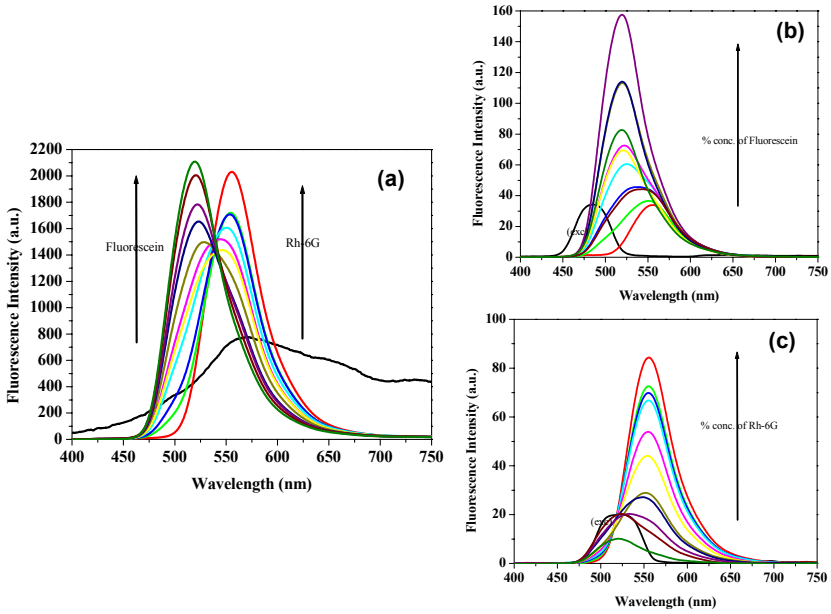

Fig S-1.B. : (a) WLEF, BPEF at the absorption maximum of (b) Flu and (c)Rh-B of the bifluorophoric system Flu + Rh-B in TDW (0.1% Methanol).

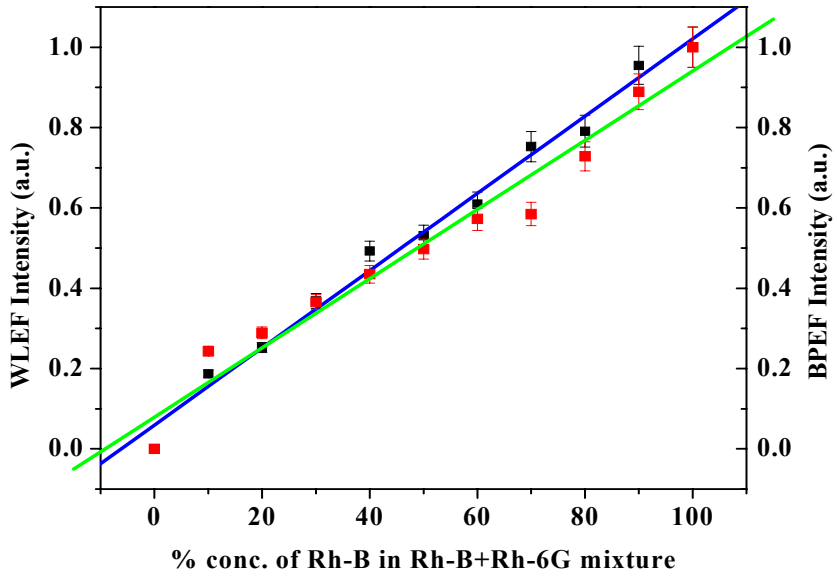

Fig S-2.A.: Normalized calibration plot for Rh-B in Rh-B+Rh-6G mixture under WLEF (black dots) and BPEF (red dots) with 5 % error bar and the best linear fit of WLEF (blue line) and BPEF (green line) respectively.

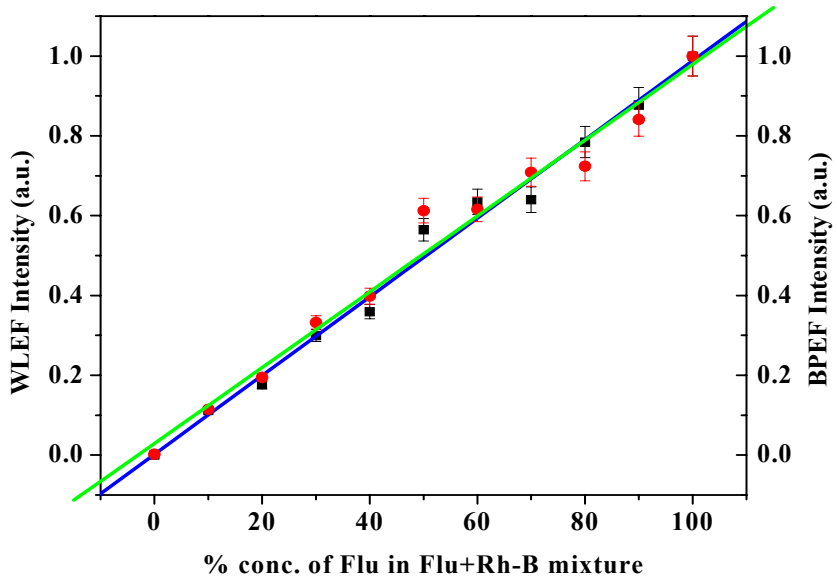

Fig S-2.B.: Normalized calibration plot for Fluin Rh-B+Flu mixture under WLEF (black dots) and BPEF (red dots) with 5 % error bar and the best linear fit of WLEF (blue line) and BPEF (green line) respectively.

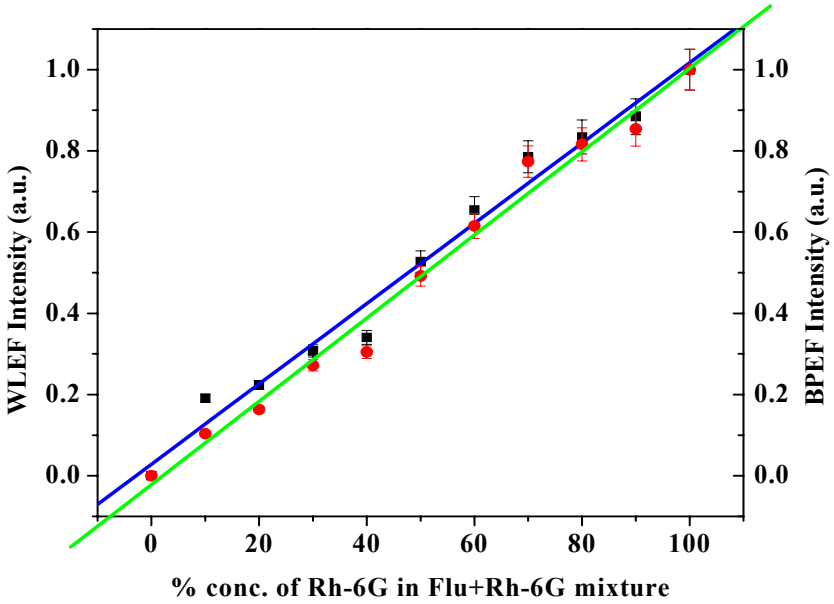

Fig S-2.C.: Normalized calibration plot for Rh-6G in Flu+Rh-6G mixture under WLEF (black dots) and BPEF (red dots) with 5 % error bar and the best linear fit of WLEF (blue line) and BPEF (green line) respectively.

Table S-3: Reference value and predicted value of relative kerosene fraction present in the kerosene adulterated diesel using PLSR and PCR model.

Reference value (% v/v of kerosene)	Predicted value (% v/v of kerosene)		Prediction error for each sample	
	PLSR	PCR	PLSR	PCR
0	4.781770E-02	-0.23497114	4.781770E-02	0.23497114
5	4.927336E+00	5.315623142	7.266405E-02	0.315623142
10	1.003429E+01	10.17481454	3.429365E-02	0.174814542
15	1.480609E+01	15.15738348	1.939065E-01	0.157383478
20	1.989305E+01	18.65041813	1.069457E-01	1.349581867
25	2.449536E+01	23.9453197	5.046379E-01	1.054680303

30	3.058382E+01	31.24848874	5.838185E-01	1.24848874
35	3.425370E+01	34.63434886	7.463028E-01	0.365651144
40	4.089771E+01	41.48082693	8.977120E-01	1.480826932
45	4.506697E+01	45.48892707	6.697076E-02	0.488927072
50	5.035010E+01	49.82723528	3.500953E-01	0.172764723
60	6.008782E+01	60.06407001	8.781528E-02	0.064070012
65	6.546847E+01	65.61972446	4.684684E-01	0.619724458
75	7.472171E+01	75.18196811	2.782930E-01	0.181968115
80	7.969409E+01	78.69611452	3.059127E-01	1.303885476
81	7.966017E+01	78.77906834	1.339833E+00	2.220931663
82	8.235327E+01	82.64605634	3.532741E-01	0.64605634
84	8.385258E+01	83.83961999	1.474220E-01	0.160380013
85	8.586210E+01	85.61576592	8.620984E-01	0.615765917
86	8.721190E+01	87.33270791	1.211903E+00	1.332707914
87	8.735477E+01	86.75586341	3.547707E-01	0.244136593
88	8.834087E+01	88.74122613	3.408668E-01	0.741226134
89	8.895194E+01	89.28089078	4.806013E-02	0.280890783
90	8.848825E+01	90.14447669	1.511749E+00	0.144476692
92	9.167086E+01	92.02505979	3.291432E-01	0.025059788
93	9.272673E+01	92.44736897	2.732737E-01	0.552631034
94	9.463269E+01	93.42461995	6.326900E-01	0.575380048
95	9.384290E+01	94.55583706	1.157103E+00	0.444162935
96	9.543275E+01	94.41846148	5.672522E-01	1.581538518
97	9.735646E+01	96.53510113	3.564595E-01	0.464898869
98	9.833900E+01	98.65672992	3.390002E-01	0.656729923
100	1.006000E+02	101.711495	6.000399E-01	1.711494981