

Modification of photophysics of 3-hydroxyflavone in aqueous solutions of imidazolium-based room temperature ionic liquids: A comparison between micelle-forming and non micelle-forming ionic liquids

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Electronic Supplementary Information

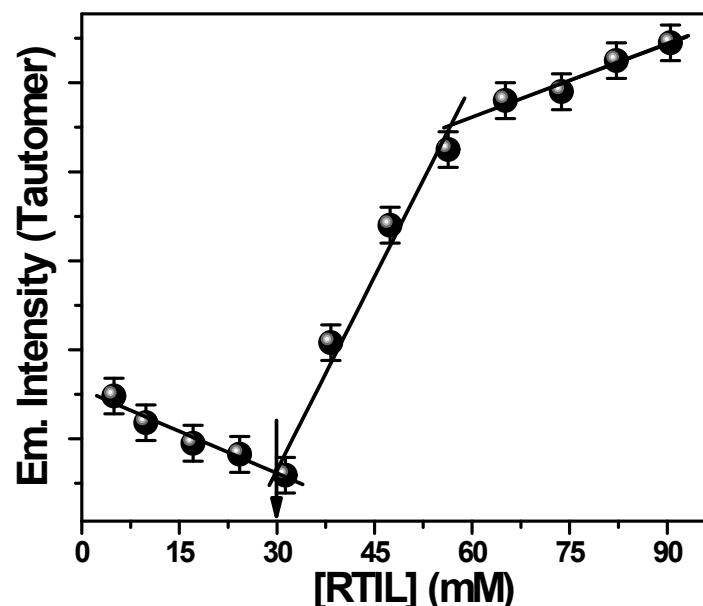


Figure S1. Variation in the emission intensity of the tautomeric species of 3HF in the aqueous solution of [BMIM][C₈SO₄].

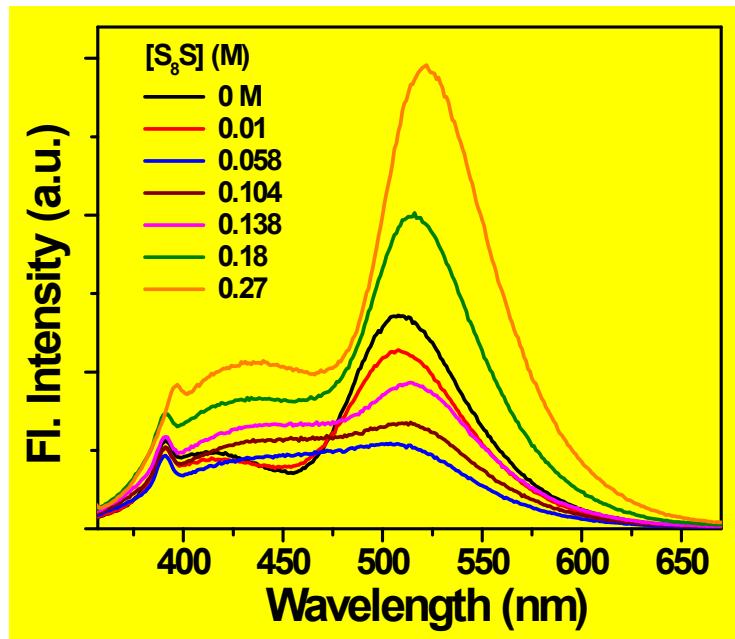


Figure S2. Variation in the emission spectra of 3HF with the addition of S_8S . The concentrations of S_8S are provided in the legends. $\lambda_{\text{exc}} = 345 \text{ nm}$.

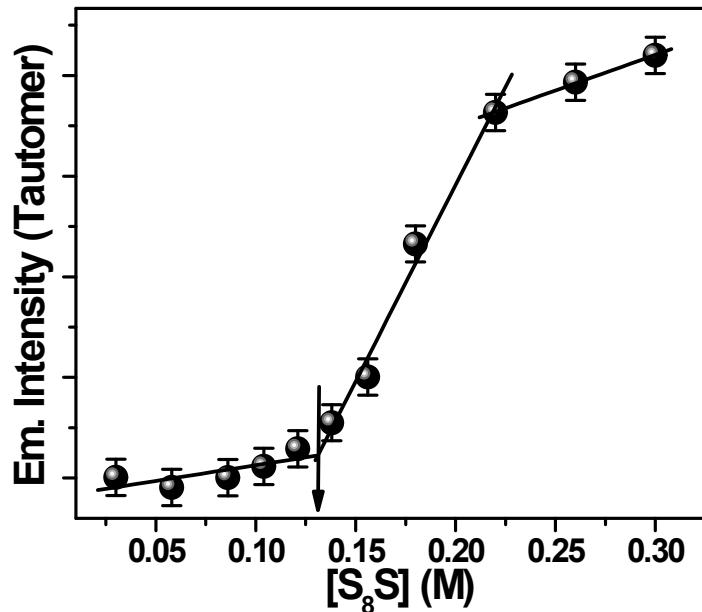


Figure S3. Variation in the emission intensity of the tautomeric species of 3HF in the aqueous solutions of S_8S .

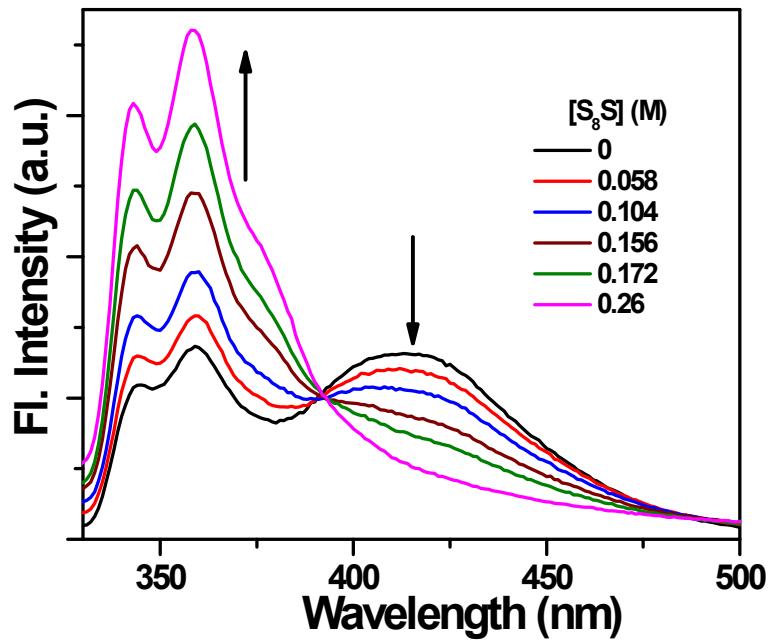


Figure S4. Variation in the emission spectra of carbazole with the addition of S_8S at pH ~ 12 . The concentrations of S_8S are provided in the legends. $\lambda_{\text{exc}} = 295 \text{ nm}$.

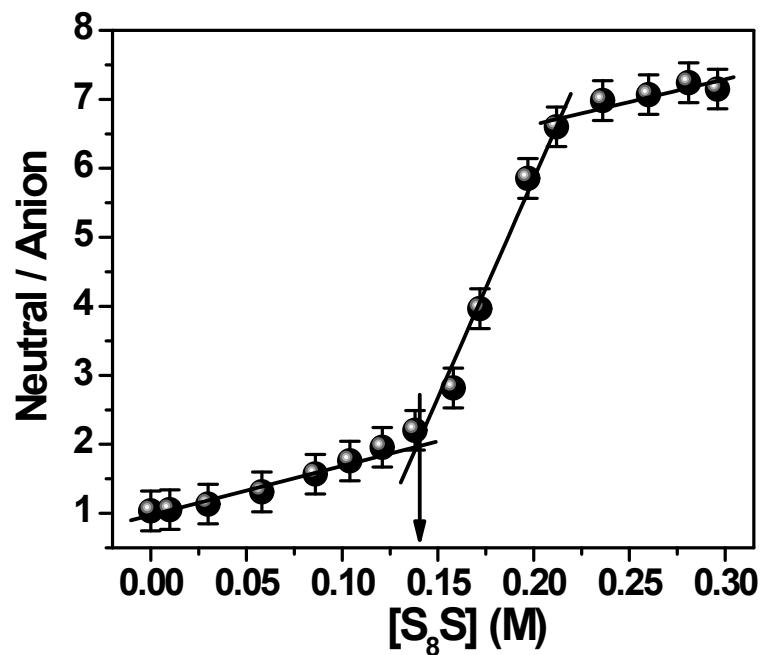


Figure S5. Variation in the ratio of emission intensities of the neutral form to that of anionic form of carbazole in the aqueous solutions of S_8S (pH ~ 12).

Table S1. Time resolved fluorescence decay parameters of normal species of 3HF ($\lambda_{\text{em}}=410$ nm) at different concentrations of [BMIM][BF₄]. $\lambda_{\text{exc}}=370$ nm.

[BMIM][BF ₄] (mM)	τ_1 (ns)	τ_2 (ns)	τ_3 (ns)	a ₁	a ₂	a ₃	τ_{av} (ns)	χ^2
0	0.17	2.77		0.99	0.01		0.20	1.09
4.95	0.17	0.97	4.37	0.96	0.03	0.01	0.23	1.20
12.29	0.15	1.48	5.63	0.95	0.03	0.01	0.25	1.11
19.51	0.16	1.47	5.22	0.94	0.03	0.02	0.29	1.14
28.99	0.19	1.61	5.51	0.94	0.04	0.02	0.35	1.10
38.27	0.21	2.27	6.74	0.94	0.04	0.02	0.42	1.12
51.89	0.21	1.86	6.07	0.91	0.06	0.03	0.48	1.13
65.11	0.18	1.72	6.01	0.90	0.07	0.03	0.47	1.08

Table S2. Time resolved fluorescence decay parameters of normal species of 3HF ($\lambda_{\text{em}}=410$ nm) at different concentrations of [BMIM][C₈SO₄]. $\lambda_{\text{exc}}=370$ nm.

[BMIM][C ₈ SO ₄] (mM)	τ_1 (ns)	τ_2 (ns)	τ_3 (ns)	a ₁	a ₂	a ₃	τ_{av} (ns)	χ^2
0	0.17	2.77		0.99	0.01		0.20	1.09
2.48	0.15	1.44	5.01	0.95	0.04	0.01	0.25	1.09
4.95	0.22	1.46	5.17	0.92	0.05	0.03	0.33	1.19
9.86	0.23	1.57	5.59	0.89	0.08	0.03	0.49	1.20
17.11	0.26	1.51	5.32	0.82	0.13	0.05	0.69	1.17
24.27	0.32	1.52	5.72	0.72	0.22	0.06	0.91	1.09
28.99	0.27	1.84	6.25	0.76	0.15	0.09	1.06	1.15
33.65	0.33	1.89	6.27	0.69	0.22	0.09	1.21	1.10
40.57	0.40	2.08	6.91	0.65	0.28	0.07	1.32	1.12
49.64	0.34	2.04	7.16	0.58	0.34	0.08	1.46	1.10
58.54	0.40	2.12	7.17	0.57	0.35	0.08	1.54	1.09
67.28	0.41	2.11	7.18	0.56	0.36	0.08	1.56	1.03

Table S3. Time resolved fluorescence decay parameters of tautomeric species of 3HF ($\lambda_{\text{em}}=550$ nm) at different concentrations of [BMIM][BF₄]. $\lambda_{\text{exc}}=370$ nm.

[BMIM][BF ₄] (mM)	τ_1 (ns)	τ_2 (ns)	τ_3 (ns)	a ₁	a ₂	a ₃	τ_{av} (ns)	χ^2
0	0.24	1.82		0.99	0.01		0.26	1.18
4.95	0.18	0.40	1.98	0.87	0.12	0.01	0.23	1.12
12.29	0.23	0.67	3.31	0.96	0.03	0.01	0.27	1.14
19.51	0.23	0.77	4.03	0.96	0.03	0.01	0.28	1.11
28.99	0.26	0.72	4.08	0.97	0.02	0.01	0.31	1.11
38.27	0.26	1.64	5.25	0.97	0.02	0.01	0.34	1.13
51.89	0.29	1.68	5.26	0.97	0.02	0.01	0.37	1.23
65.11	0.29	1.72	6.14	0.97	0.02	0.01	0.38	1.09

Table S4. Time resolved fluorescence decay parameters of tautomeric species of 3HF ($\lambda_{\text{em}}=550$ nm) at different concentrations of [BMIM][C₈SO₄]. $\lambda_{\text{exc}}=370$ nm.

[BMIM][C ₈ SO ₄] (mM)	τ_1 (ns)	τ_2 (ns)	τ_3 (ns)	a ₁	a ₂	a ₃	τ_{av} (ns)	χ^2
0	0.24	1.82		0.99	0.01		0.26	1.18
2.48	0.23	1.07	5.59	0.95	0.04	0.01	0.32	1.24
4.95	0.24	1.41	5.95	0.94	0.04	0.02	0.40	1.17
9.86	0.27	1.82	6.56	0.91	0.07	0.02	0.50	1.01
17.11	0.31	1.85	7.03	0.86	0.12	0.02	0.62	1.14
24.27	0.35	2.07	7.37	0.81	0.16	0.03	0.84	1.10
28.99	0.37	2.09	7.65	0.80	0.16	0.04	0.94	1.09
33.65	0.39	1.81	7.15	0.75	0.20	0.05	1.02	1.15
40.57	0.65	2.03	7.29	0.83	0.13	0.04	1.09	1.14
49.64	0.65	2.00	7.62	0.82	0.14	0.04	1.12	1.04
58.54	0.71	2.63	7.98	0.87	0.10	0.03	1.12	1.11
67.28	0.71	2.39	7.76	0.86	0.11	0.03	1.11	1.01