Electronic Supplementary Material (ESI) for Photochemical & Photobiological Science

Supporting information

Effect of Nanocavity on the Torsional dynamics of Thioflavin T in Various Non-aqueous Reverse Micelles

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Table S-1:

The absorption, emission peak and emission quantum yields of ThT in glycerol-methanol mixtures.

Sr no	System	λ_{max}^{abs} (nm)	λ_{max}^{emi} (nm)	Φ_f	Viscosity (cP)
1.	ThT+20% glycerol	417	478	5.741×10^{-4}	4.8
2.	ThT+25% glycerol	417	479	6.15×10^{-4}	6.0
3.	ThT+30% glycerol	417	481	7.23×10^{-4}	7.7
4.	ThT+35% glycerol	419	482	8.36×10^{-4}	10
5.	ThT+40% glycerol	418	484	1.22×10^{-3}	13
6.	ThT+45% glycerol	419	484	1.32×10^{-3}	18
7.	ThT+50% glycerol	419	483	1.703×10^{-3}	28
8.	ThT+55% glycerol	419	485	2.05×10^{-3}	36
9.	ThT+60% glycerol	420	485	2.6×10^{-3}	58
10.	ThT+65% glycerol	420	486	3.6×10^{-3}	70
11.	ThT+70% glycerol	420	486	5.8×10^{-3}	130
12.	ThT+75% glycerol	421	487	7.5×10^{-3}	170
13.	ThT+80% glycerol	420	487	0.0106	250
14.	ThT+85% glycerol	422	487	0.013	350
15.	ThT+90% glycerol	422	487	0.018	630

Table S-2:

The absorption and emission property of ThT molecule in different dioxane-water mixtures

Sr no	System	λ_{max}^{abs} (nm)	Absorption energy[#] E_a (Kcal mol^{-1})	λ_{max}^{emi} (nm)	Emission energy[#] E_f (Kcal mol^{-1})	Φ_f	E_T (30)
1	ThT+dioxane	411	69.56	475	60.19	2.08×10^{-3}	36.6
2	ThT+99.1%dioxane	411	69.56	478	59.81	1.46×10^{-3}	38.5
3	ThT+97.2%dioxane	414	69.06	480	59.56	1.28×10^{-3}	42.0
4	ThT+95.3%dioxane	414	69.06	481	59.44	1.18×10^{-3}	43.2
5	ThT+92.5%dioxane	418	68.40	483	59.19	9.95×10^{-4}	45.6
6	ThT+81.3%dioxane	421	67.91	484	59.07	7.26×10^{-4}	48.7
7	ThT+71.9%dioxane	421	67.91	485	58.95	6.97×10^{-4}	50.5
8	ThT+57.8%dioxane	421	67.91	486	58.83	6.58×10^{-4}	52.6
9	ThT+43.2%dioxane	421	67.91	486	58.83	5.51×10^{-4}	54.9
10	ThT+34.4%dioxane	420	68.07	486	58.83	4.55×10^{-4}	56.5
11	ThT+25.3%dioxane	418	68.40	485	58.95	4.13×10^{-4}	57.9
12	ThT+11%dioxane	416	68.73	484	59.07	2.79×10^{-4}	60.9
13	ThT+6.2%dioxane	414	69.06	483	59.19	2.64×10^{-4}	62.8
14	ThT+water	412	69.39	481	59.44	2.04×10^{-4}	63.6

[#]E (Kcalmol^{-1}) = 28590/ (λ_{max}/nm).

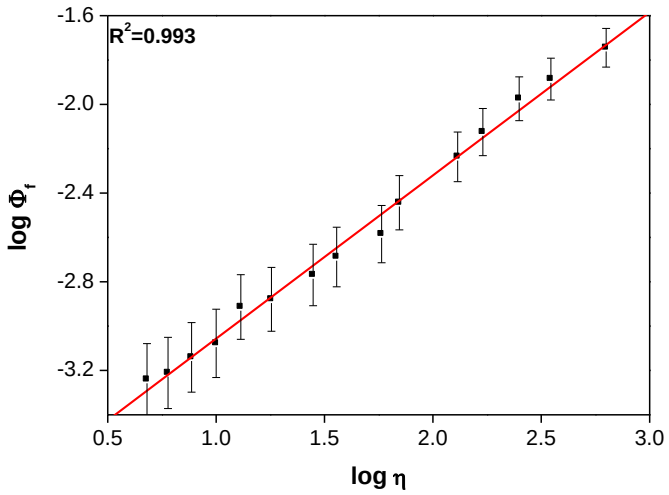

Fig. S 1: The logφ_f vs logη plot for ThT in glycerol-methanol mixtures.

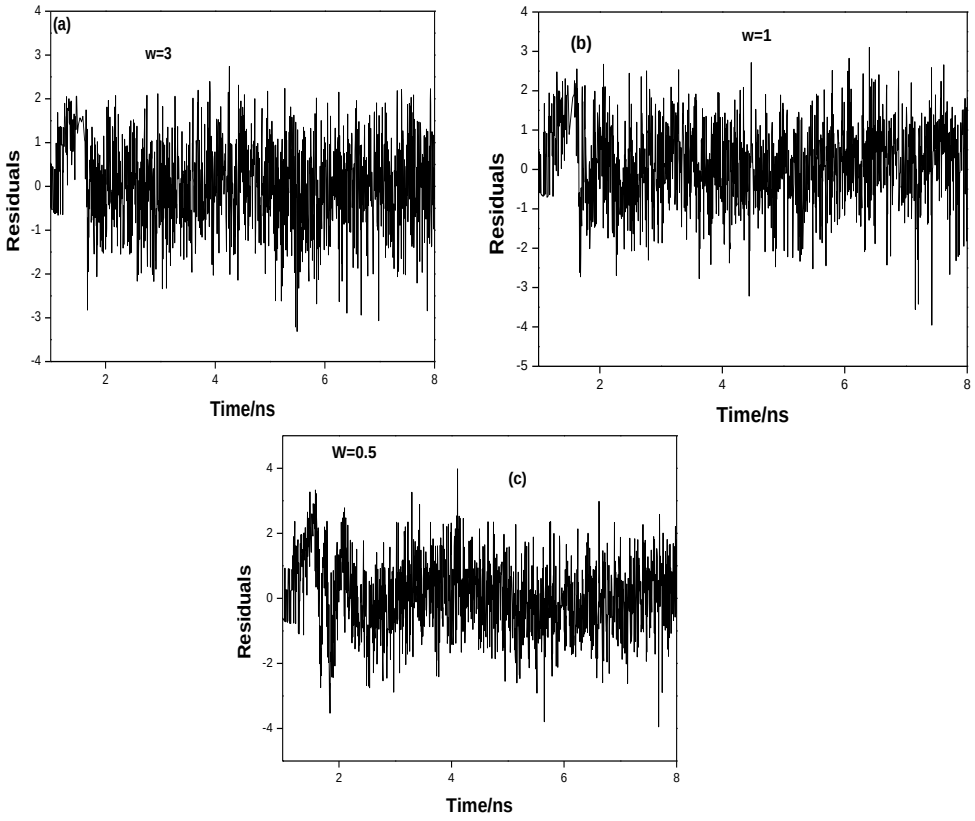

Fig. S 2: Residual for the fitted fluorescence lifetime decay ThT in (a) glycerol/AOT/isooctane reverse micelle at w = 3 (b) ethylene glycol/AOT/isooctane reverse micelle at w = 1 and (c) DMF/AOT/isooctane reverse micelle at w = 0.5.