Electronic Supplementary Material (ESI) for New journal of Chemistry

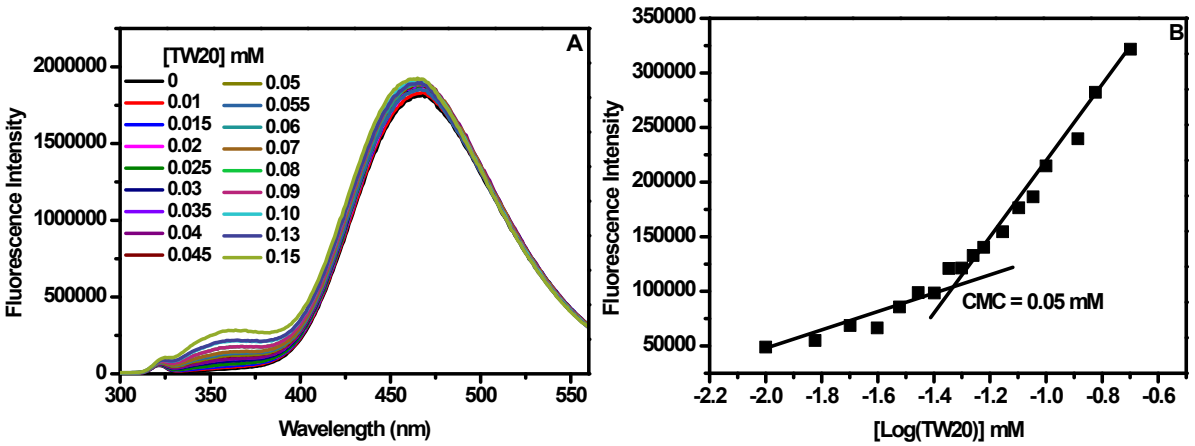
SUPPORTING INFORMATION

Temperature Dependent Water Penetration in Tween20:Cholesterol Niosome Membrane: A Study Using Excited State Prototropism of 1-Naphthol

Jitendriya Swain, Jhili Mishra, Akanksha Singh and Ashok Kumar Mishra*

Department of Chemistry, Indian Institute of Technology Madras, Chennai 600 036, India

Figure S1. (A) Response of fluorescence intensity of 1-naphthol with varying the concentrations of TW20 in aqueous solution. (B) Plot of NpOH* intensity against different concentrations of TW20 in aqueous solution (plot for critical micellar concentration) (C) Plot of NpO^{-*} to NpOH* intensity ratio against different concentrations of TW20 in aqueous solution [1-naphthol] = 4 μM, (λ_{ex} = 290 nm). (Error = ± 5%).



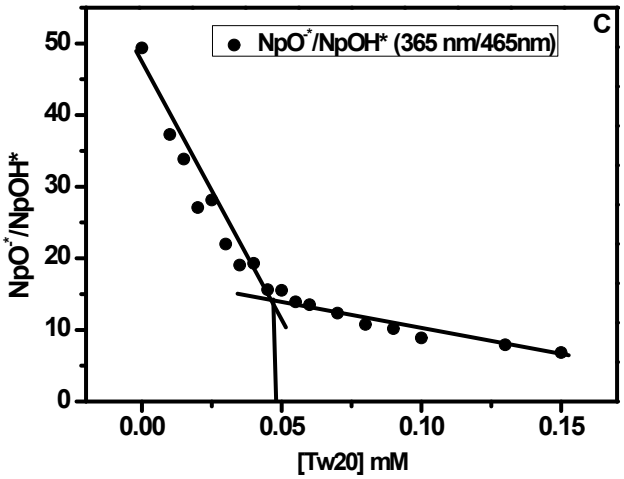


Table S1. The fluorescence lifetimes data of NpO^{-}*with increase in concentration of TW20 (λ_{ex} = 295 *nm*, λ_{em}=470 *nm*). [1-naphthol] = 4 μM. (Error = ± 5 %)

[TW20](mM) Em = 470 nm	τ1(ns)	FWHM(ns)	Modal Life time(ns)	χ2
0	7.66	2.72	7.96	1.30
0.02	7.70	2.63	7.96	1.39
0.04	7.66	3.22	7.96	1.28
0.05	7.60	3.53	8.07	1.34
0.06	7.60	3.98	7.96	1.21
0.08	7.60	4.28	8.07	1.33
0.09	7.60	4.31	8.07	1.34
0.1	7.61	4.64	8.19	1.37
0.13	7.61	5.12	8.19	1.42
0.15	7.52	5.69	8.19	1.24

Figure S2. The fluorescence lifetime decay of NpOH*with increase in temperature of TW20: cholesterol (1:1) niosomes (λ_{ex} = 295 *nm*, λ_{em}=360 *nm*).

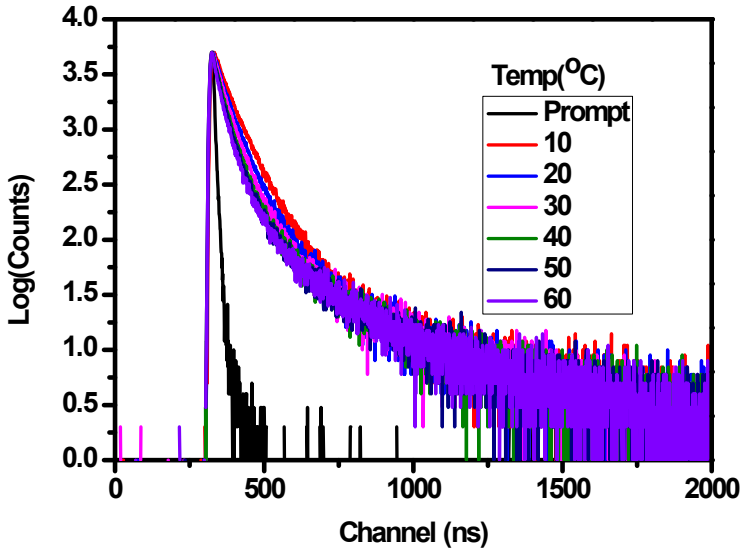


Figure S3. The fluorescence lifetime decay of NpO^{-}*with increase in temperature of TW20: cholesterol (1:1) niosomes (λ_{ex} = 295 *nm*, λ_{em}=460 *nm*).

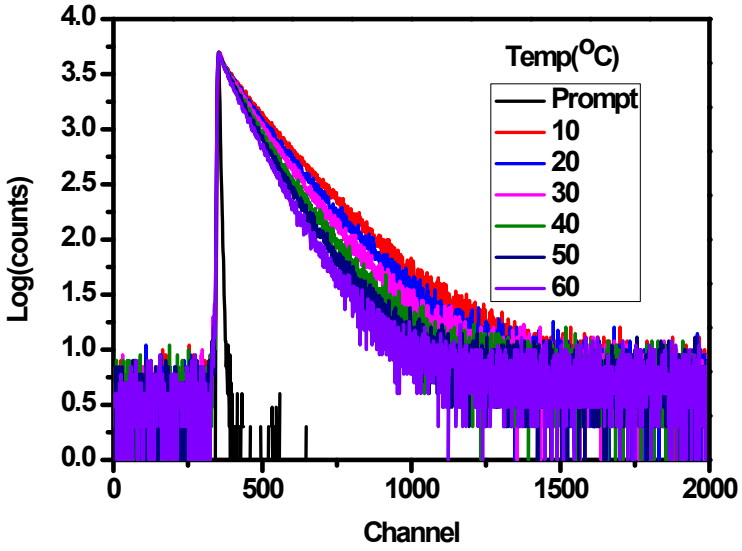


Figure S4. Plot for the variation of NPO^{-*} emission maximum (cm^{-1}) in niosome membrane with variation of temperature.

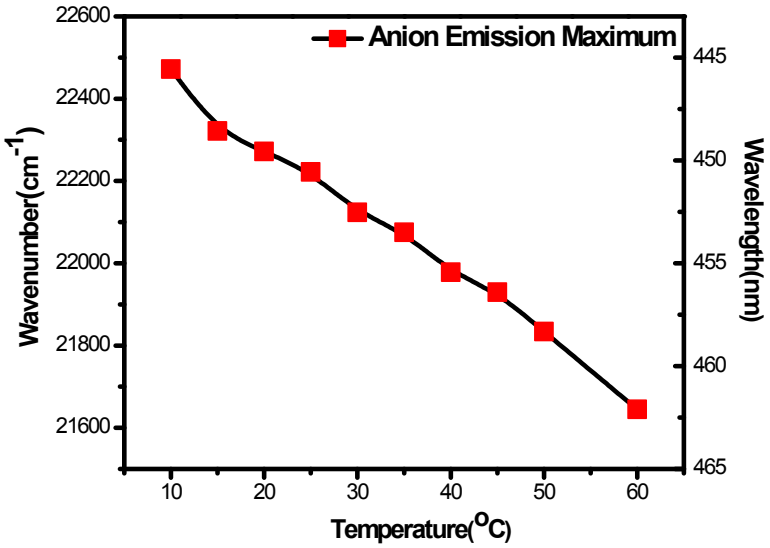


Figure S5. Plot for the variation of neutral (NpOH*) and anion (NpO^{-*}) form emission of 1-NPOH in niosome membrane as a function of temperature.

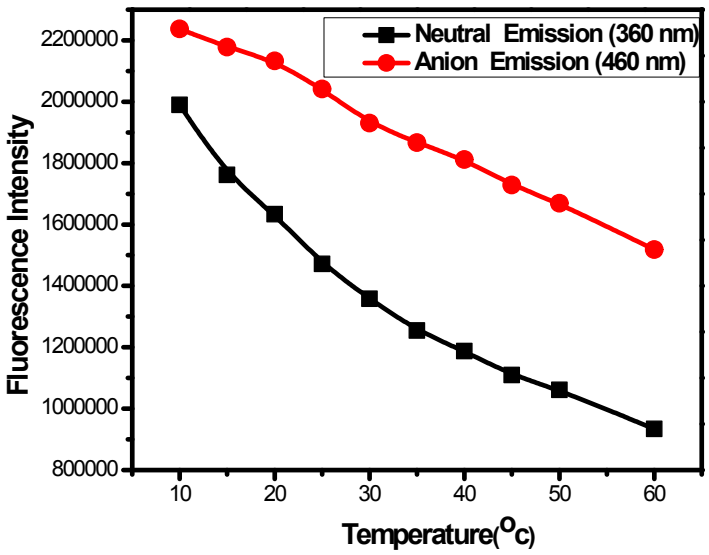


Figure S6. DLS histogram plot for TW20:Cholesterol niosomes at lower (10°C) and higher (60°C) temperature.