Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting Information

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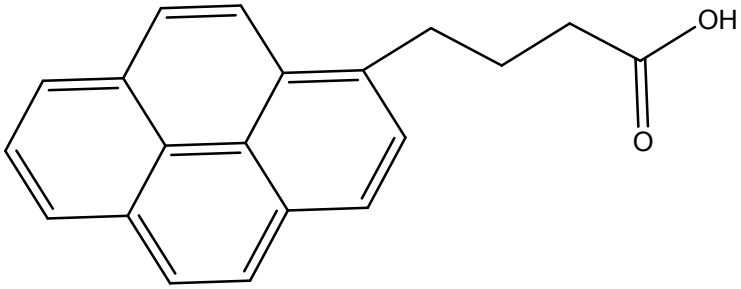
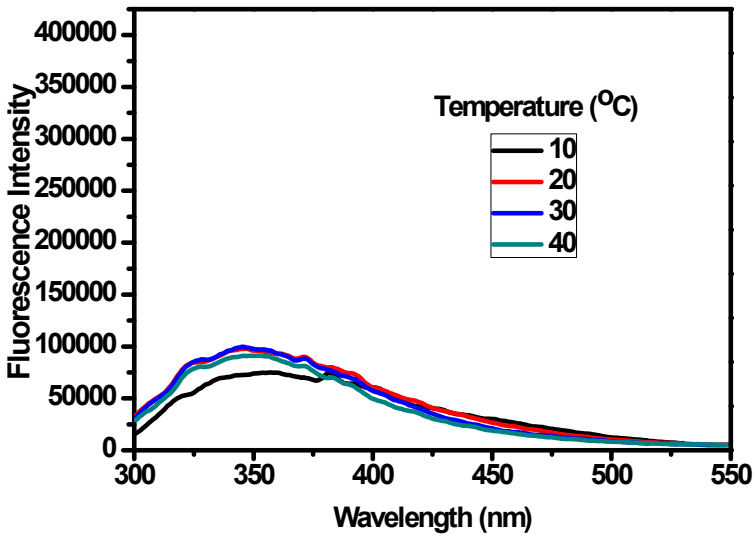
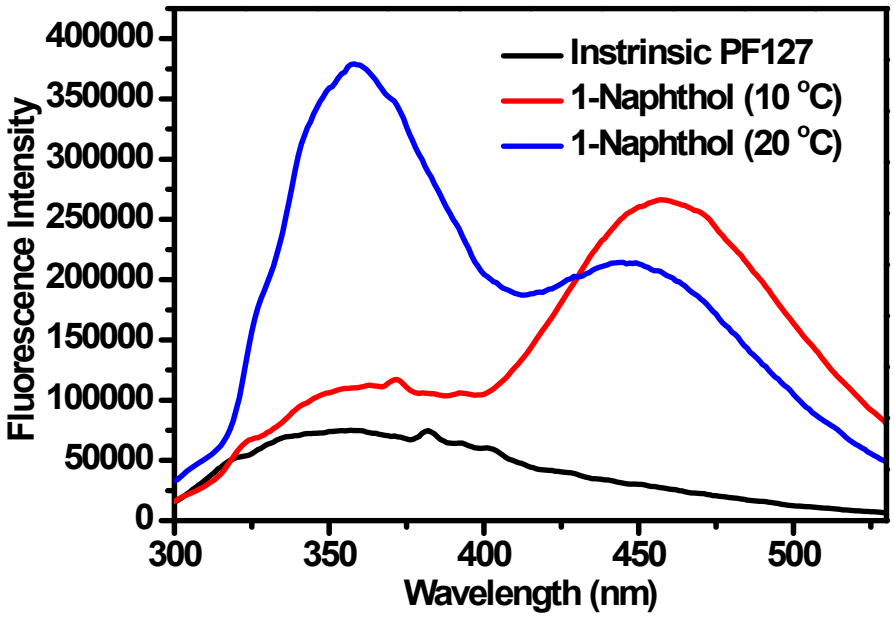
SIFigure 1. Structure of pyrene-1-butyric acid



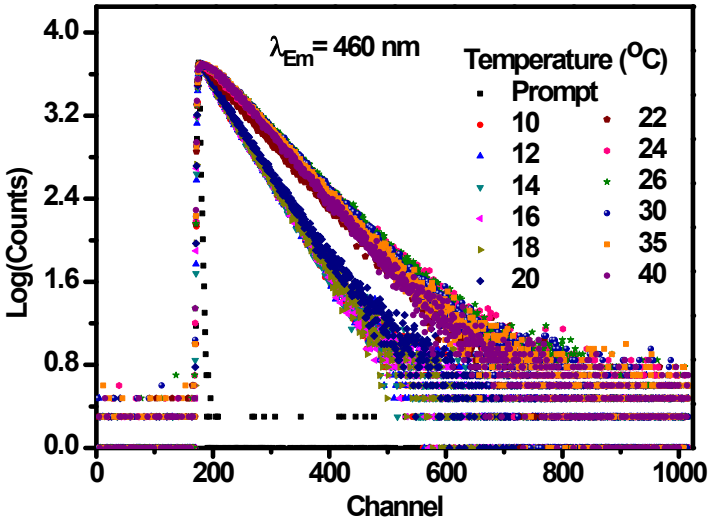
SIFigure 2. Plot for the intrinsic fluorescence emission of PF127 (10 % w/v) with the variation of temperature, λ_{ex} = 290 *nm*



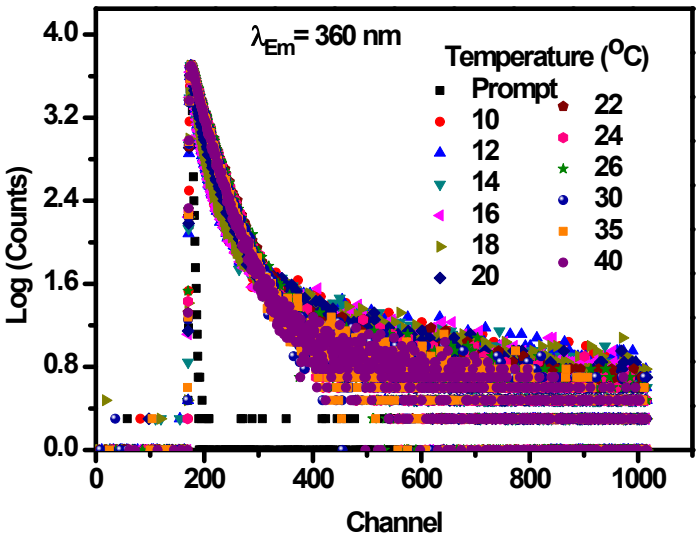
SIFigure 3. Fluorescence emission spectra of 1-naphthol in PF127 (10 %) and intrinsic fluorescence emission of PF127 (10 % w/v) at 10 °C and 20 °C. [1-naphthol]= 4 μM.



SIFigure 4. Plot for the fluorescence lifetime decay profile of anionic form (460 nm) of 1-naphthol in PF127 with the variation of temperature ([1-naphtho] = 4 μM, [PF127] = 10 % (w/v), (λ_{ex} = 295 nm).



SIFigure 5. Plot for the fluorescence lifetime decay profile of neutral form (360 nm) of 1-naphthol in PF127 with the variation of temperature ([1-naphtho] = 4 μM, [PF127] = 10 % (w/v), (λ_{ex} = 295 nm).

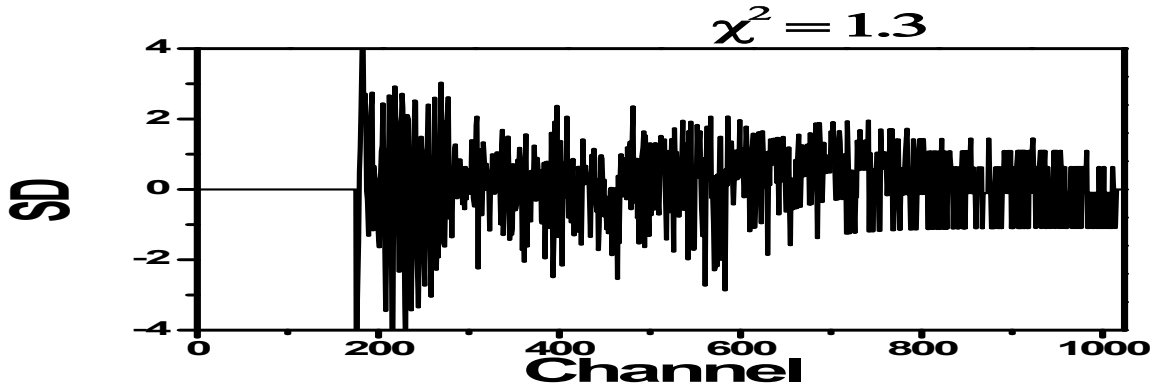


SI Table 1. Variation in fluorescence lifetimes and amplitudes of PF127 with the increase in temperature λ_{ex} = 295 *nm*, λ_{em} = 345 *nm*, [PF127] = 10 % (w/v).

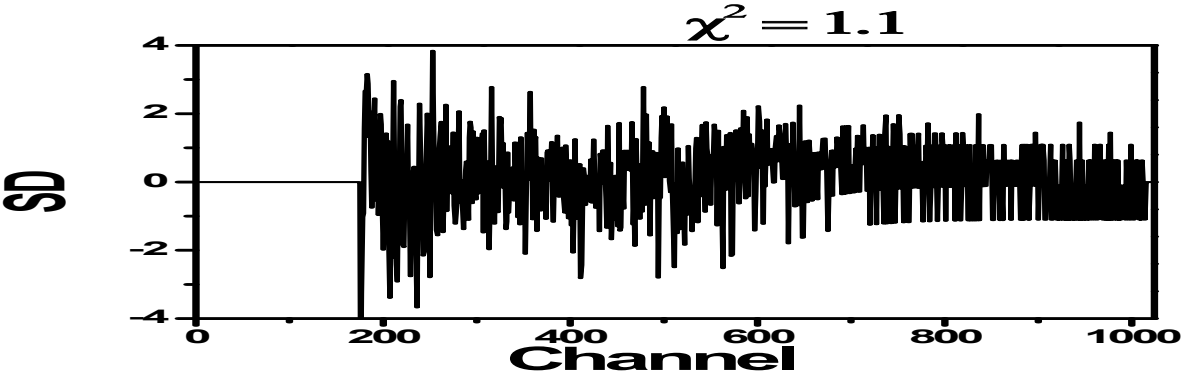
Em=345 nm Temp. (°C)	τ_1 (ns)(B_1)	τ_2 (ns)(B_2)	τ_3 (ns)(B_3)	τ_{avg}(ns)	χ^2
10	6.21(0.28)	2.00(0.68)	33.39(0.04)	11.07	1.10
20	6.28(0.21)	2.24(0.77)	37.93(0.04)	15.34	1.16
30	6.62(0.24)	2.02(0.73)	37.93(0.05)	15.33	1.13
40	6.78(0.24)	1.90(0.74)	37.80(0.05)	13.00	1.11

SIFigure 6. Residue distribution plots for anionic form (460 nm) of 1-naphthol in PF127 with the variation of temperature (Corresponding to Table 1).

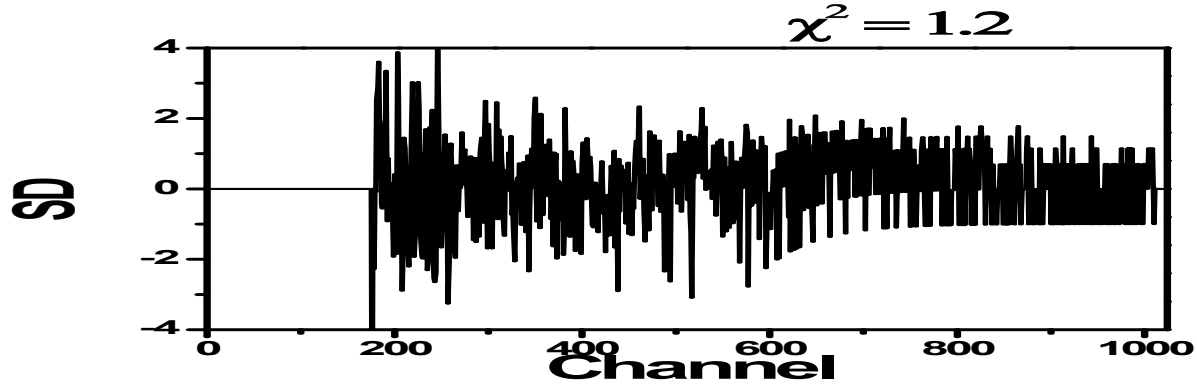
1) 10 °C



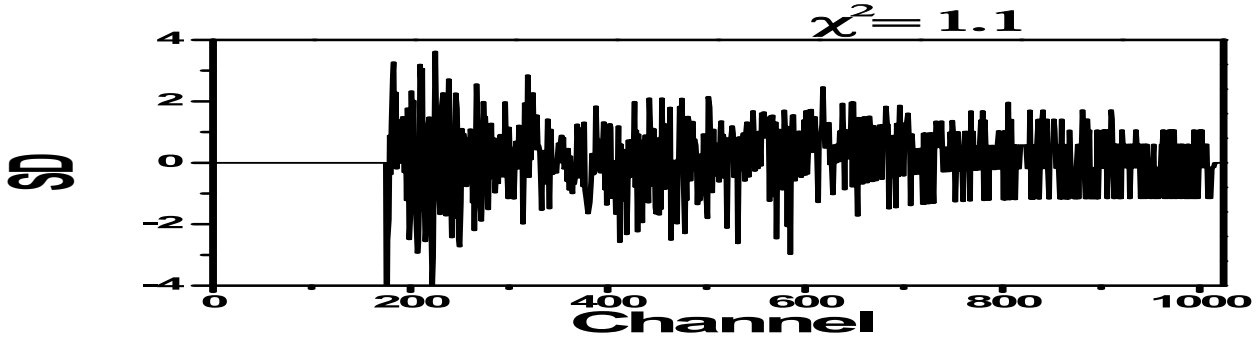
2) 12 °C



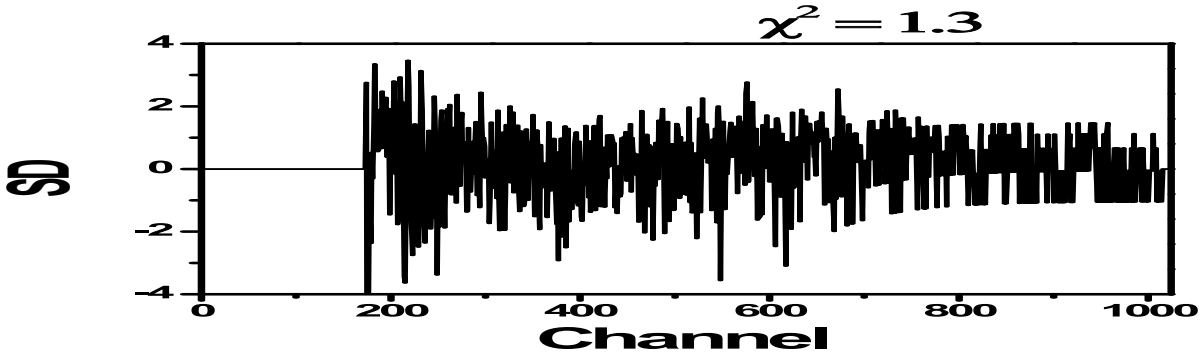
3) 14 °C



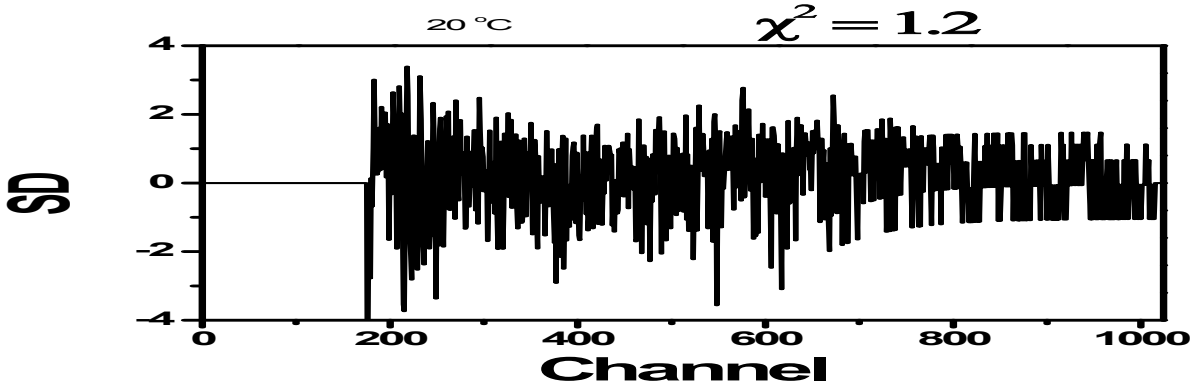
4) 16 °C



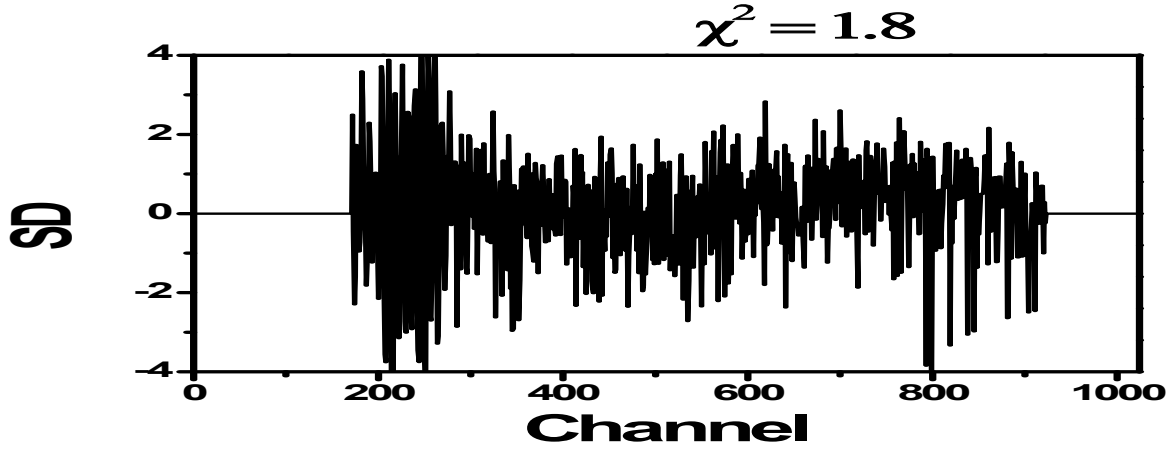
5) 18 °C



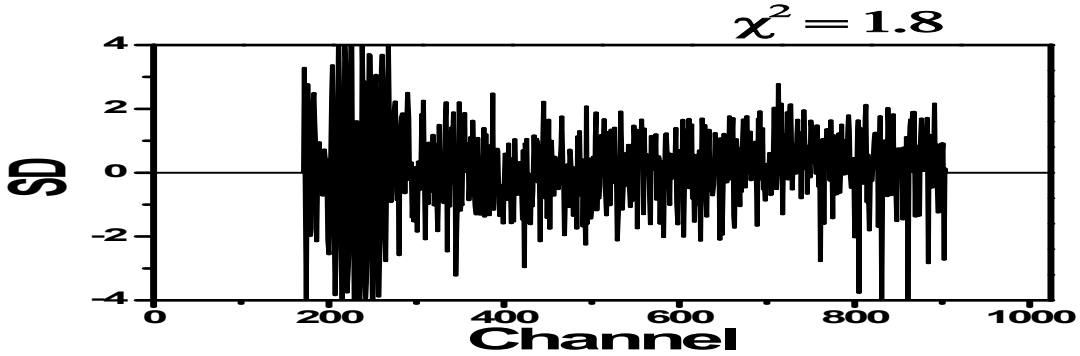
6) 20 °C



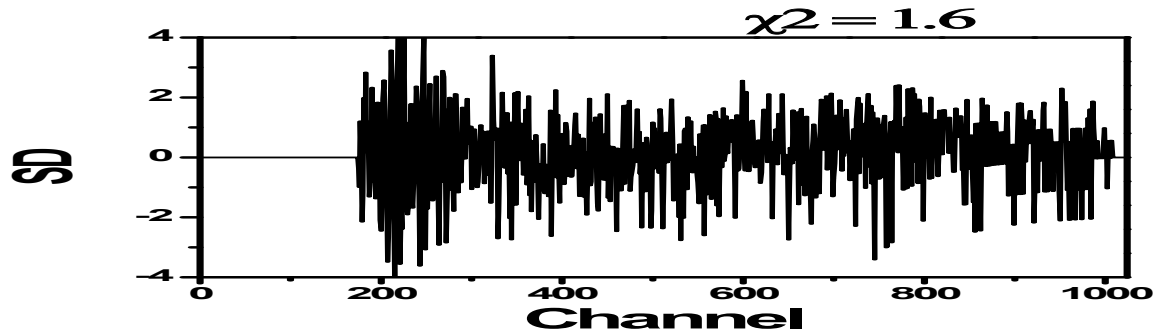
7) 22 °C



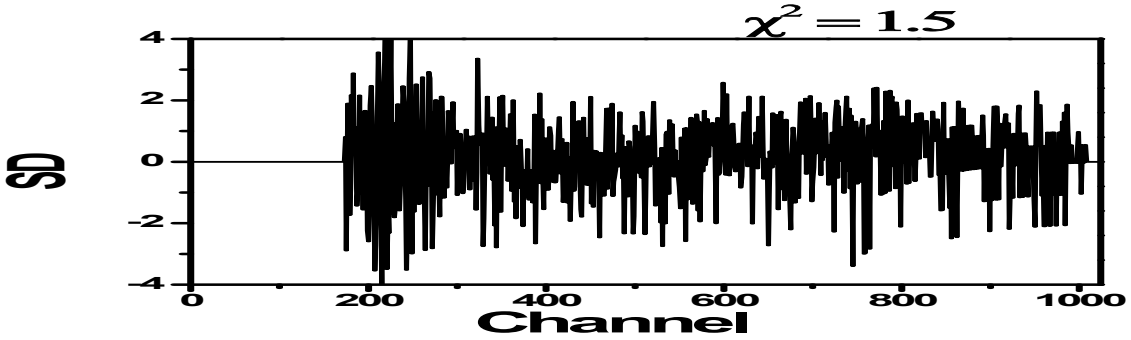
8) 24 °C



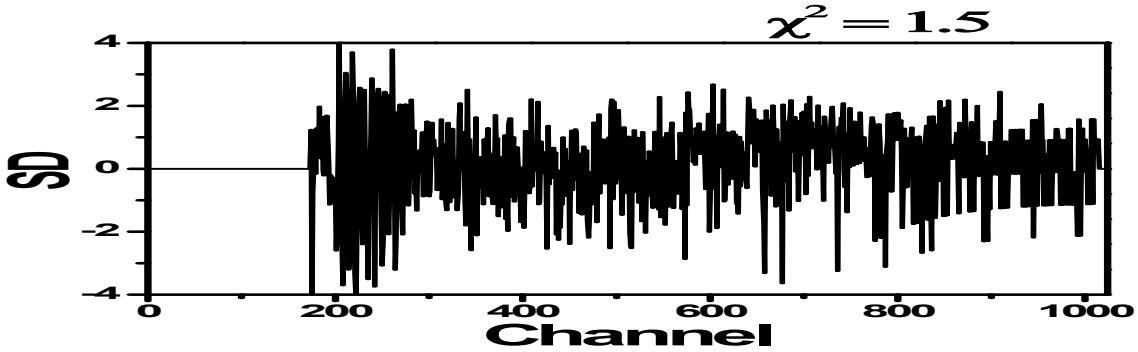
9) 26 °C



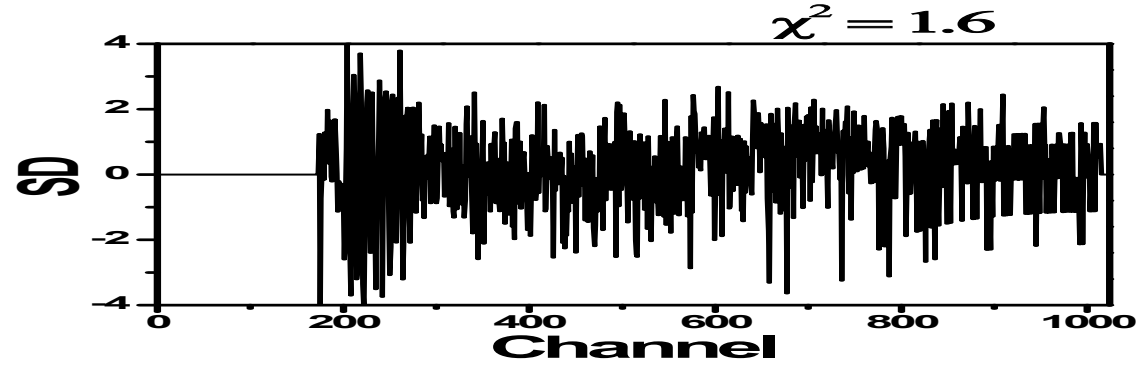
10) 30 °C



11) 35 °C

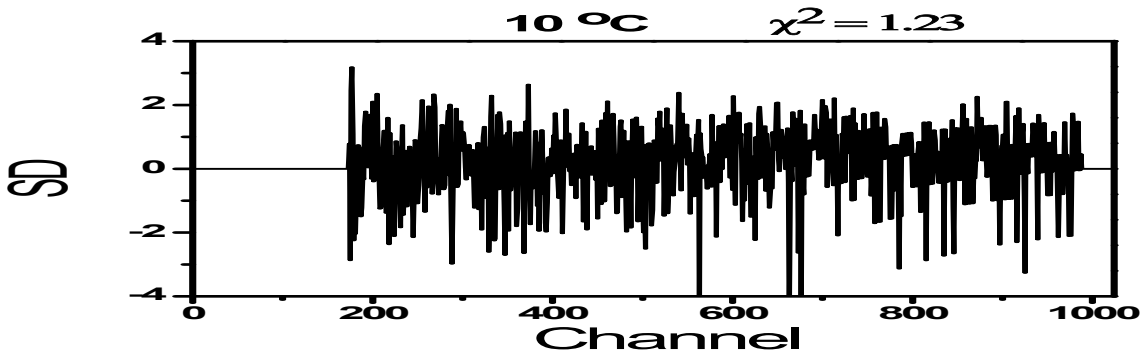


12) 40 °C

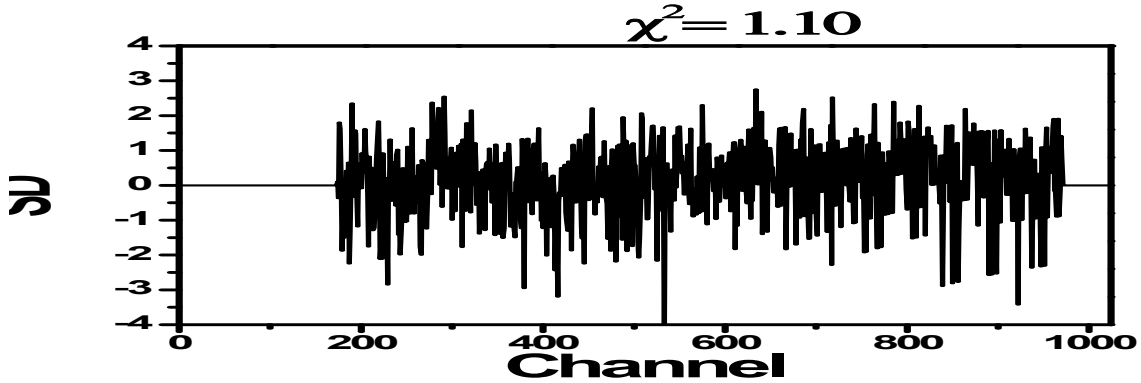


SIFigure 7. Residue distribution plots for neutral form (360 nm) of 1-naphthol in PF127 with the variation of temperature (Corresponding to Table 2).

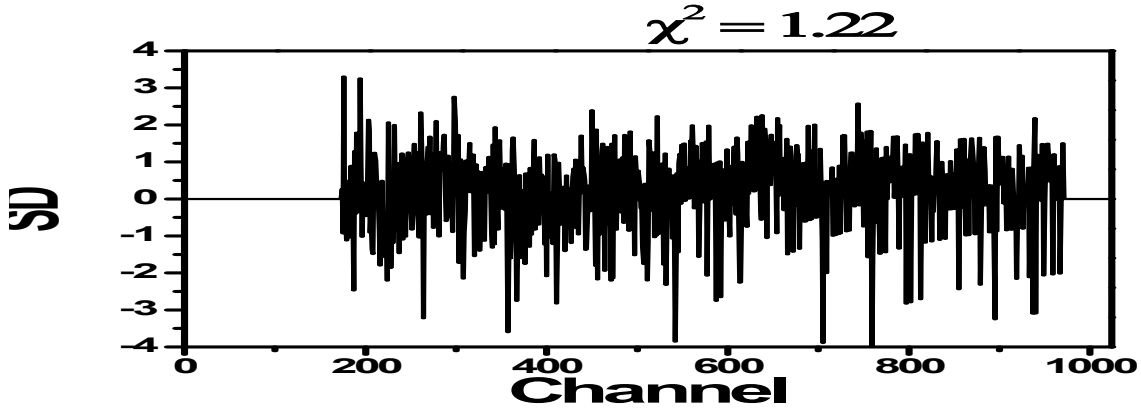
1) 10 °C



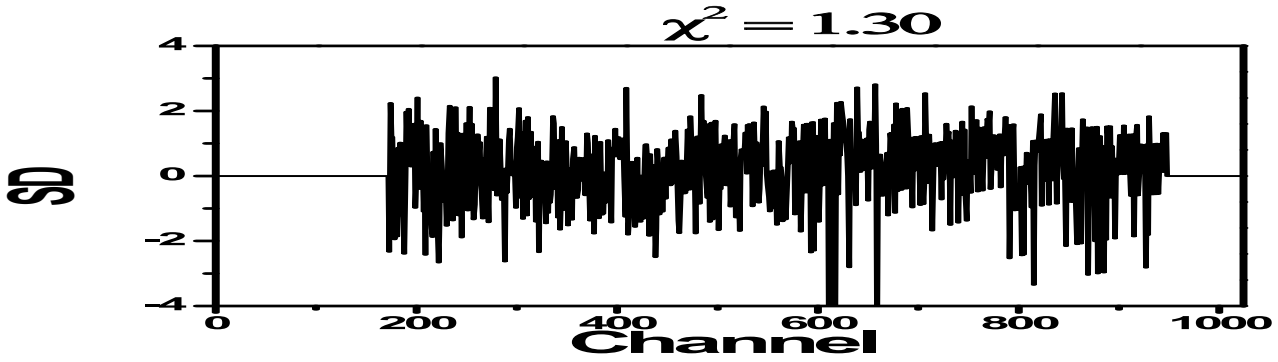
2) 12 °C



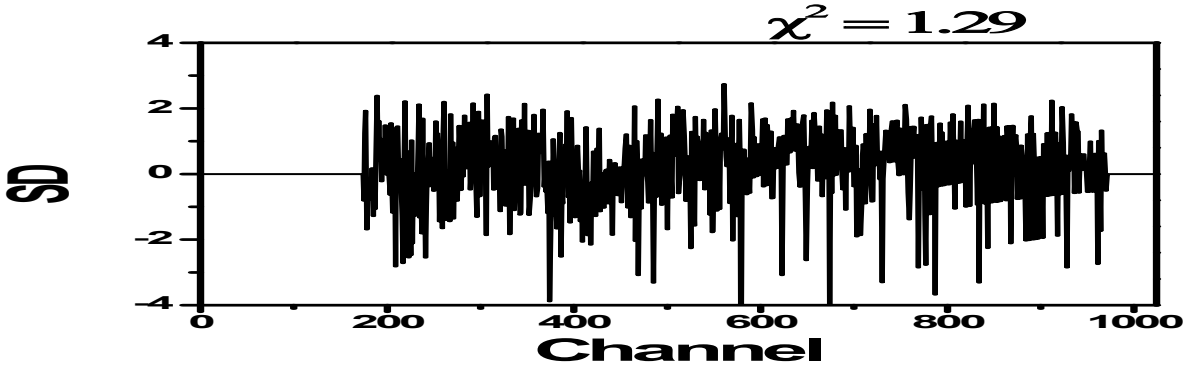
3) 14 °C



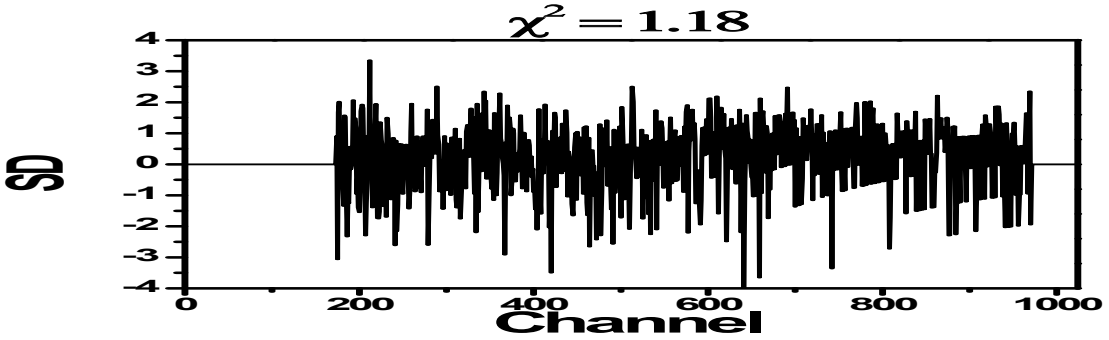
4) 16 °C



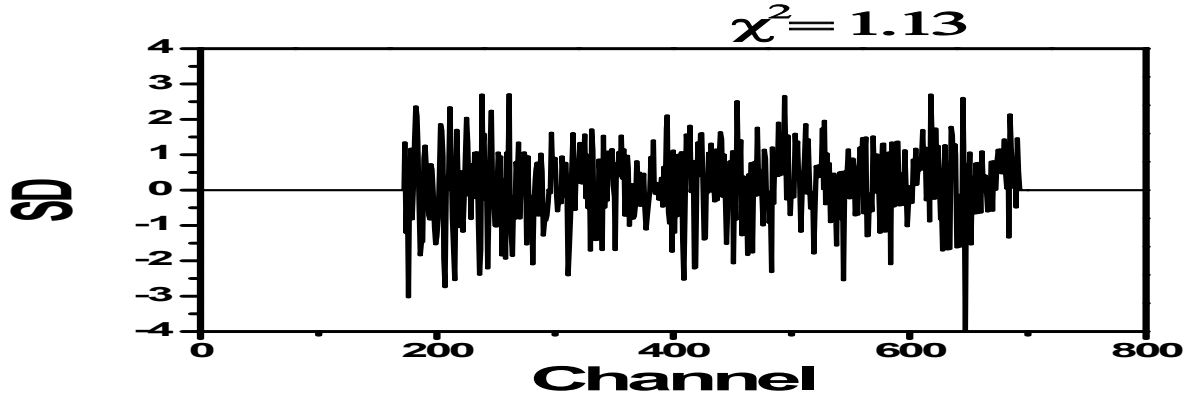
5) 18 °C



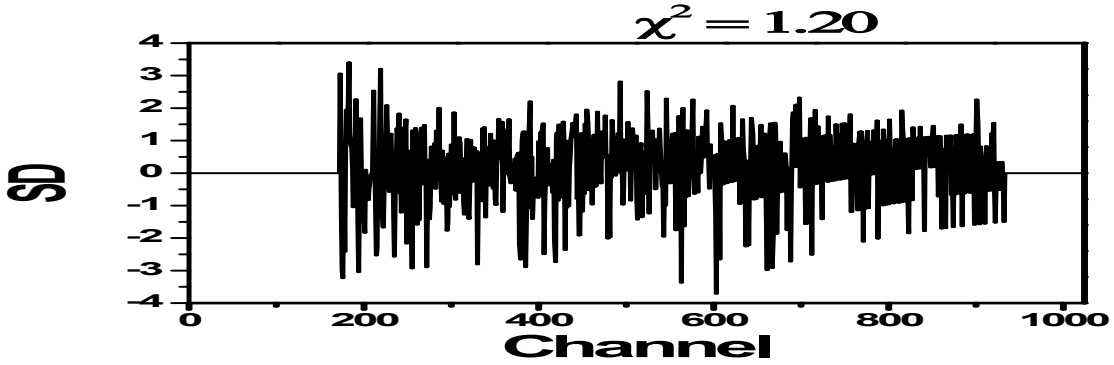
6) 20 °C



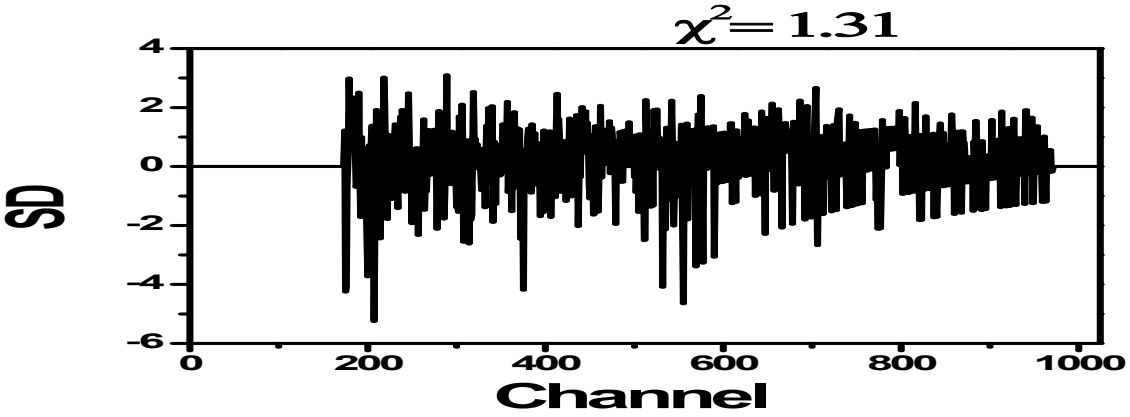
7) 22 °C



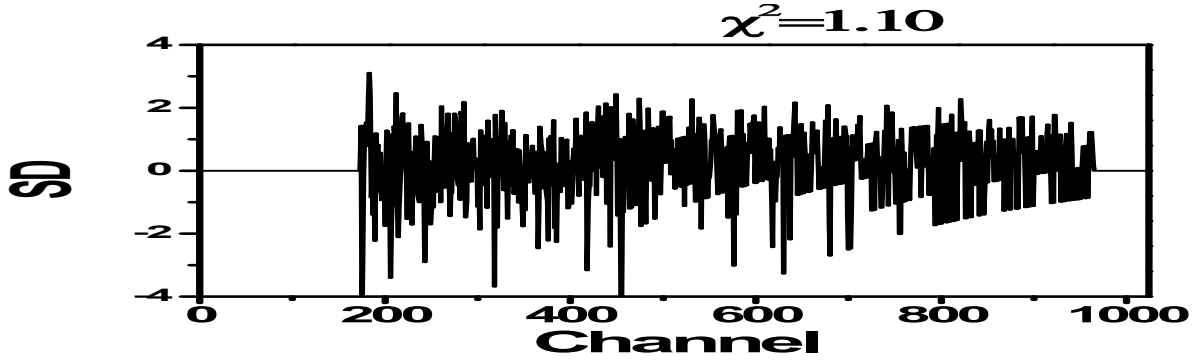
8) 24 °C



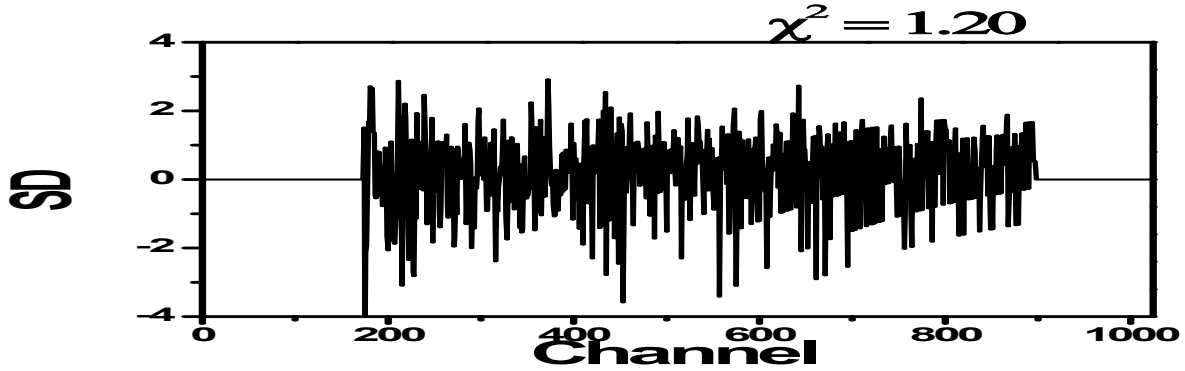
9) 26 °C



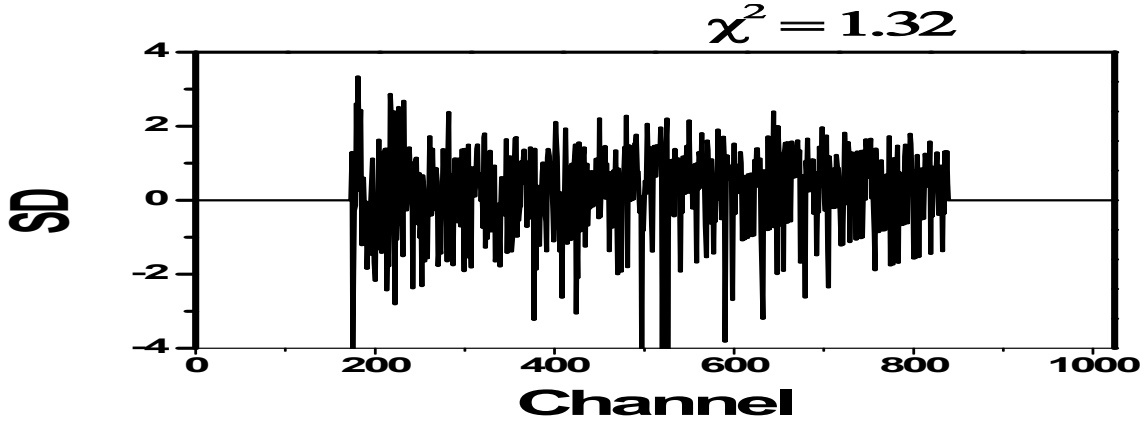
10) 30 °C



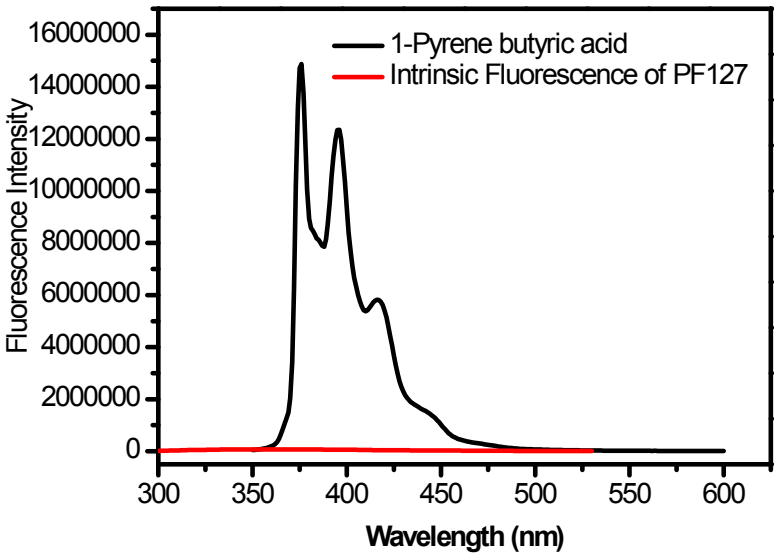
11) 35 °C



12) 40 °C



SIFigure 8. Fluorescence emission spectra of pyrene-1- butyric acid in PF127 (10 %) and intrinsic fluorescence emission of PF127 (10 % w/v) at 10 °C. [1-pyrene butyric acid]= 4 µM.



SIFigure 9. **(A)** Plot for the fluorescence intensity of pyrene butyric acid in PF127 with the variation of temperature. **(B)** Plot for the I_1/I_3 of pyrene butyric acid in PF127 with pyrene emission in different solvents with the variation of temperature. [pyrene butyric acid] = 4 μM, [PF127] = 10 % (w/v).