

Supporting Information:

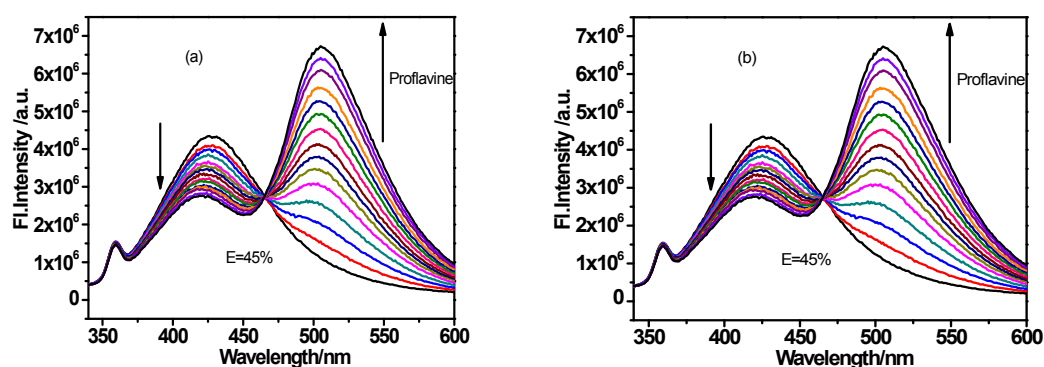


Figure S1: Fluorescence spectra of ED_CNDs with increasing concentration of PF (from 0 to 7.5 μM) in PBS buffer solution at pH (a) 5.7 (b) 7.9 [$\lambda_{\text{exc}} = 320 \text{ nm}$].

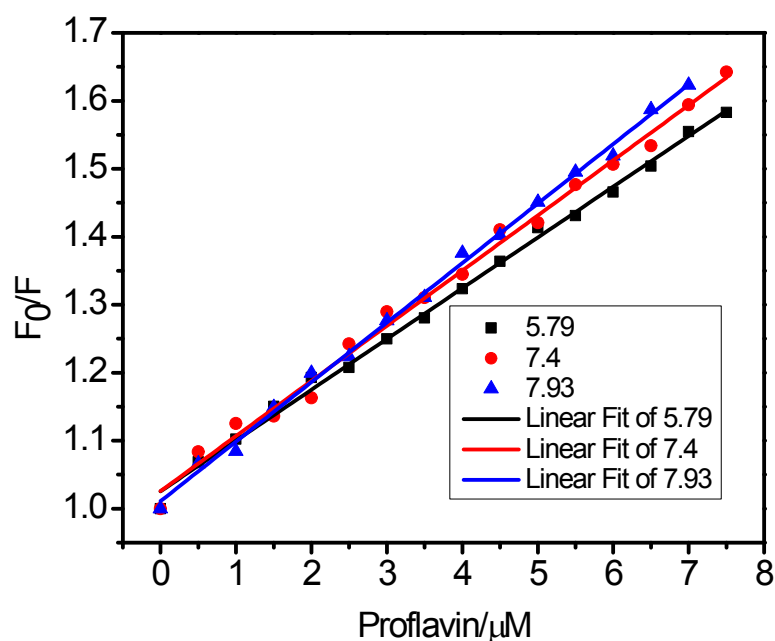


Figure S2: Stern-Volmer plot of quenching of fluorescence of CNDs with increasing concentration of proflavine from 0 to 7.5 μM in PBS buffer solution where the blue color indicates pH value 7.93, red color indicates pH value at 7.4 and black color indicates pH value at 5.79; $\lambda_{\text{excitation}} = 320 \text{ nm}$ and $\lambda_{\text{emission}} = 430 \text{ nm}$.

Table S1: Bimolecular quenching constants of EDACND-Proflavine system at different pHs.

System	pH	K_q ($M^{-1}s^{-1}$)
EDA-CND-Proflavine	5.79	5.03×10^{12}
	7.4	5.46×10^{12}
	7.9	5.90×10^{12}

Table S2: Fluorescence decay time constants of Proflavin in absence and presence of varying amount of EDACNDs. ($\lambda_{exc}=377$ nm, $\lambda_{em}=504$ nm)

CND (μ l)	τ_1 /ns	a_1 (%)	τ_2 /ns	a_2 (%)	$\langle \tau \rangle$ /ns	χ^2
0	4.91	100			4.91	1.06
10	4.75	87.53	11.60	12.47	6.51	1.27
30	4.70	75.88	13.88	24.12	9.14	1.07
50	4.61	65.71	13.99	34.29	10.35	1.09
70	4.55	58.47	14.38	41.53	11.35	1.15
90	4.55	54.05	14.44	45.95	11.76	1.22
110	4.46	46.57	14.30	53.43	12.19	1.22

Table S3: Fluorescence decay time constants of EDACNDs in absence and presence of varying concentration of PF. ($\lambda_{exc}=377$ nm, $\lambda_{em}=450$ nm)

Proflavine (μ M)	τ_1 /ns	a_1	τ_2 /ns	a_2	$\langle \tau \rangle$ /ns	χ^2
0	2.14	4.63	15.22	95.37	15.13	1.14
5	2.18	4.99	15.15	95.01	15.05	1.15
10	2.15	4.94	15.1	95.06	15.00	1.14
15	2.16	5.07	15.07	94.93	14.97	1.08
20	2.21	5.2	15.09	94.8	14.98	1.08
25	2.28	5.33	15.04	94.67	14.93	1.15
30	2.38	5.48	14.94	94.52	14.82	1.11
40	2.37	5.85	14.9	94.15	14.77	1.14
50	2.44	6.2	14.73	93.8	14.59	1.18
60	2.65	7.28	14.71	92.72	14.54	1.13
70	3.15	9.14	14.7	90.86	14.45	1.15
80	3.32	10.9	14.67	89.1	14.36	1.14
90	4.02	16.11	14.65	83.89	14.11	1.13
100	4	17.57	14.44	82.43	13.85	1.14

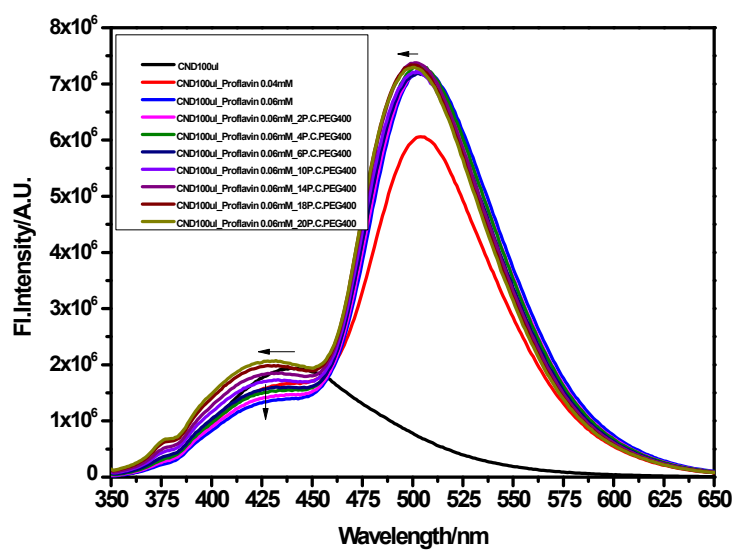


Figure S3: Steady state fluorescence spectra of EDA-CNDs ($\lambda_{\text{exc}} = 340$ nm) before and after addition of different concentration of Proflavine and effect of PEG400 percentage in water on that fluorescence spectra of EDACND-Proflavine complex

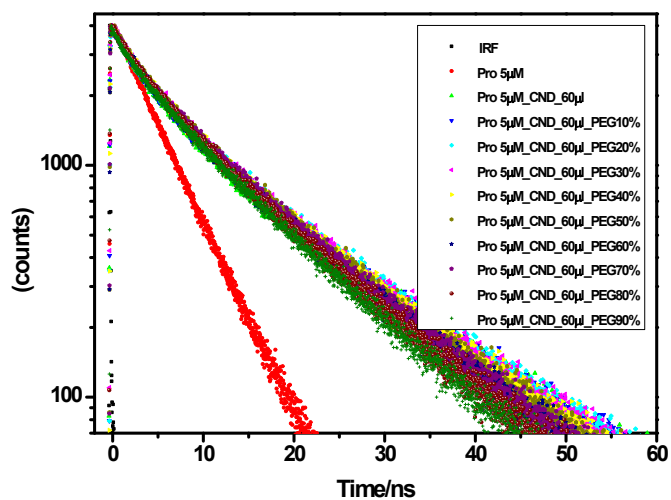


Figure S4: Fluorescence decay traces of Proflavine with saturating amount of EDA-CNDs and with different percentage of PEG400 monitored at 504 nm. (($\lambda_{\text{exc}} = 375$ nm))

Table S4: Fluorescence decay time constants of EDACND-PF complex in absence and presence of varying percentage of PEG400. ($\lambda_{\text{exc}}=377$ nm, $\lambda_{\text{em}}=504$ nm)

PEG400 (%)	τ_1/ns	$a_1(\%)$	τ_2/ns	$a_2(\%)$	χ^2
0	3.75	0.47	14.24	0.52	1.2
10	3.61	0.43	14.01	0.56	1.07
20	3.67	0.42	14.13	0.57	1.11
30	3.49	0.40	13.68	0.50	1.21
40	3.88	0.41	13.95	0.58	1.19
50	3.63	0.37	13.30	0.62	1.13
60	3.48	0.36	12.75	0.63	1.06
70	3.20	0.31	12.58	0.68	1.05
80	2.97	0.30	11.85	0.70	1.23
90	2.63	0.27	11.32	0.72	1.17

Table S5: Fluorescence decay time constants of EDACND-PF complex in absence and presence of varying concentration of CTDNA in Tris buffer at pH=7.4. ($\lambda_{\text{exc}}=377$ nm, $\lambda_{\text{em}}=504$ nm)

DNA(μM)	τ_1/ns	$a_1(\%)$	τ_2/ns	$a_2(\%)$	τ_3/ns	$a_3(\%)$	χ^2
0	4.61	75	14.48	25			1.22
17	4.676	51	14.88	27.2	0.431	20	1.01
34	5.21	32.9	15.27	41.1	1.13	26	1.06
56	3.98	26	14.80	38	0.27	35	1.11
79	4.40	20	15.07	36	0.59	44	1.10
102	4.33	9.8	15.07	22	0.48	68	1.09
125	3.933	7	15.02	18	0.448	73	1.18
147	3.022	14	14.93	35.4	0.329	50	1.03
170	3.98	7.1	15.08	17.1	0.481	75	1.11

In all the tables τ and a denote fluorescence decay time component and the corresponding percentage contribution respectively.

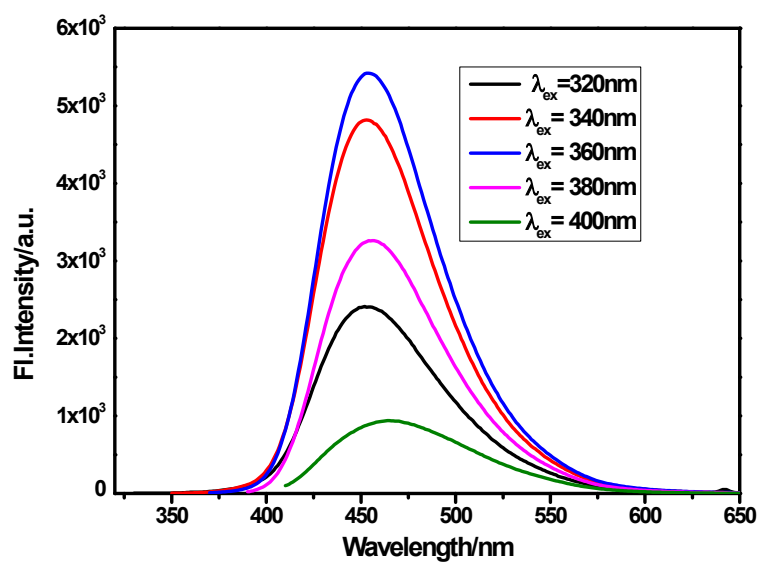


Figure S5: Fluorescence spectra of EDA-CNDs recorded after exciting at different wavelengths ranging from 320-400 nm.