Electronic Supplementary Material (ESI) for New Journal of Chemistry.

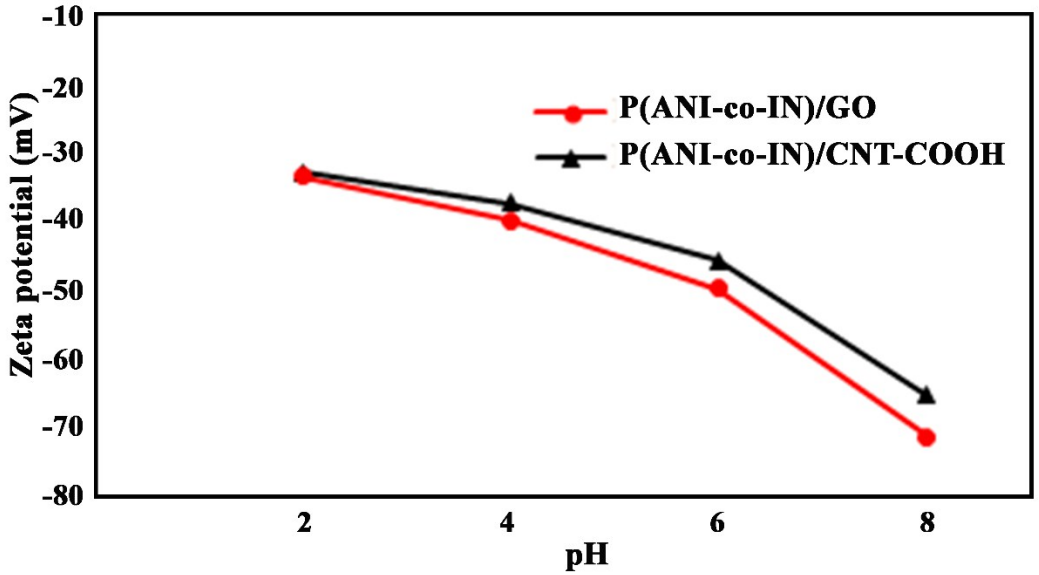

Figure S1. Zeta potential of P(ANI-co-IN)/CNT-COOH and P(ANI-co-IN)/GO in different pH.

The pH of the dye solution plays an important role in the whole adsorption process, since there are several charging characteristics of ionic-type adsorbents under different pH conditions leading to variant affinity to contaminants.

Before monitoring of the pH effect on cationic dyes adsorption, the zeta potentials of the carbon based nanoadsorbents have been studied in the pH range from 2.0 to 8.0 and supplied in figure S1. Zeta potential can be used to determine acidity or basicity of the adsorbent surfaces. It is found that the zeta potentials of both nanoadsorbents are highly negative and by enhancing pH, the negative charges would be boosted. The negative potential shows oxygen-containing functional groups on the surfaces of GO and CNT with negative charges.

Table S1. Effect of pH, Dosage, Time and Initial dye concentration on Percentages of removal adsorption with error bars.

P(ANI-co-IN)/GO/MG

pH	Removal (%)	Error bar
2	35	1.3
4	60	1
6	99.795	1.01
8	99.84	0.9

Dosage	Removal (%)	Error bar
0.05	75	0.8
0.1	80	0.9
0.2	90	0.45
0.4	99.5	0.45
0.5	99.5	0.35

C_0	Removal (%)	Error bar
20	96	0.1
40	93.5	1.3
60	87.9	0
80	81.3875	0.1
100	76.4	0.27

t(min)	Removal (%)	Error bar
60	65	0.2
120	77.7	0.4
240	91.22	0.3
360	96.4	0.9
720	98.95	0.18
1440	98.9555	0.2

P(ANI-co-IN)/GO/MB

pH	Removal (%)	Error bar
2	21.2	1.2
4	52	1.5
6	91.5	1
8	98.95	1.02

Dosage	Removal (%)	Error bar
0.05	70	0.2
0.1	80.67	0.21
0.2	89	0.19
0.4	99.1	0.1
0.5	99.2	0.25

C_0	Removal (%)	Error bar
20	95	0.2
40	91.5	0.35
60	85.83333	0.38
80	80	0.25
100	72	0.1

t(min)	Removal (%)	Error bar
60	51	0.4
120	67.3	0.21
240	78.8	0.3
360	91	1
720	98	0.21
1440	98	0.16

P(ANI-co-IN)/CNT-COOH/MB

pH	Removal (%)	Error bar
2	30	0.1
4	58	0.9
6	98.6	0.3
8	99.5	0.5

Dosage	Removal (%)	Error bar
0.05	75	0.125
0.1	80	0.2
0.2	90	0.1
0.4	98.9	0.15
0.5	99	0.1

C_0	Removal (%)	Error bar
20	95.5	0.3
40	92	0.2
60	86	0.3
80	80.4375	0.1
100	75.655	0.1

t(min)	Removal (%)	Error bar
60	52.3	0.11
120	75.5	0.42
240	86	0.27
360	95.5	1
720	98.1	0.34
1440	98.111	0.14

P(ANI-co-IN)/CNT-COOH/MG

pH	Removal (%)	Error bar
2	20.2	0.35
4	45	0.1
6	89	0.9
8	97.5	0.4

Dosage	Removal (%)	Error bar
0.05	71	0.1
0.1	82.56	0.45
0.2	90	0.15
0.4	98.5	0.4
0.5	99	0.35

C_0	Removal (%)	Error bar
20	94.5	0.1
40	90	0.4
60	85	0.1
80	78.75	0.2
100	74	0.3

t(min)	Removal (%)	Error bar
60	50	0.19
120	62.4	0.34
240	72.9	0.41
360	88.4	1.1
720	97.55	0.2
1440	97.6	0.38