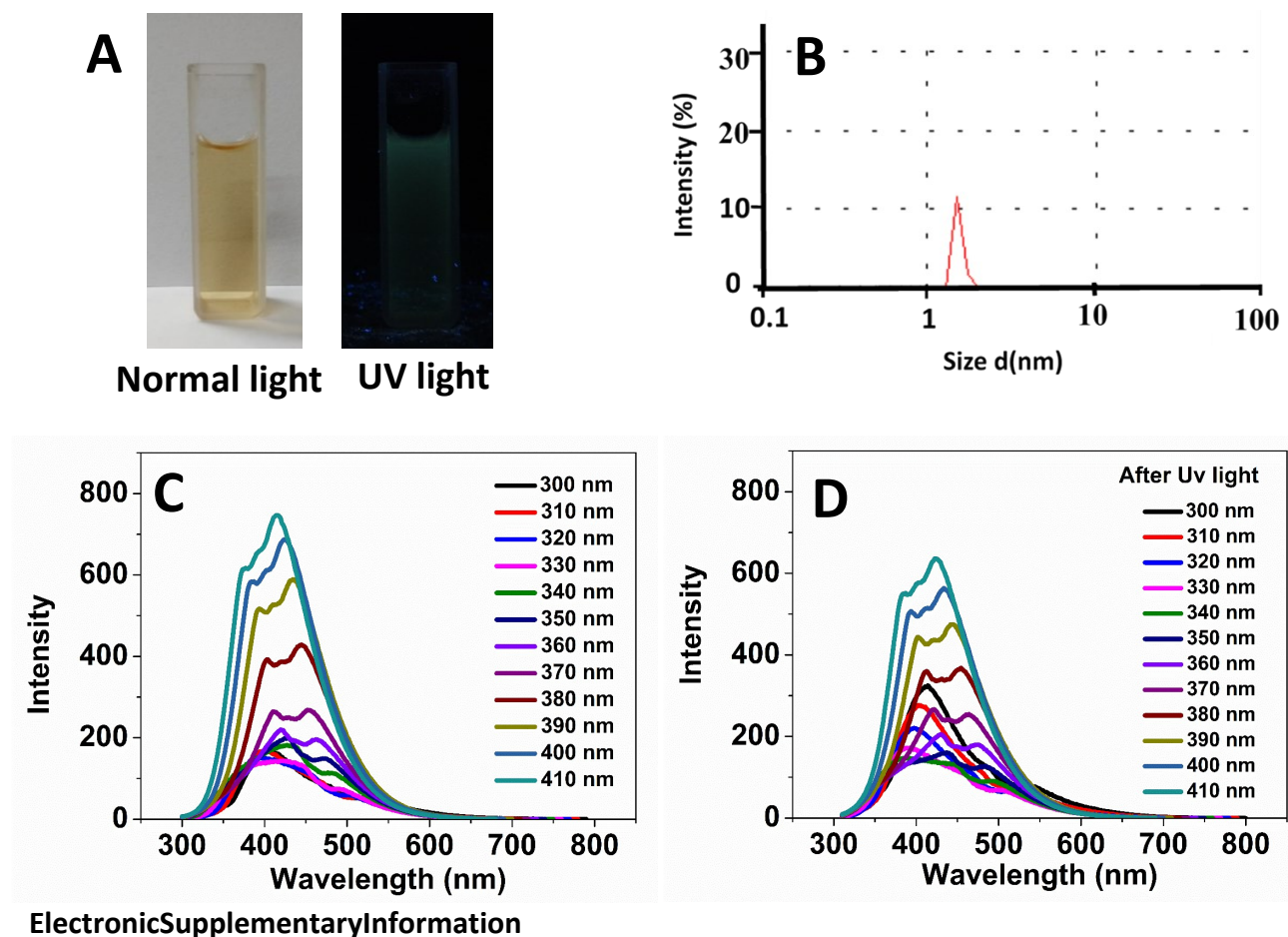


## Tunable Electrical properties of carbon dot doped photo-responsive Azobenzene-clay nanocomposites

Jahnabi Gogoi,<sup>a</sup>Shubham Shishodia<sup>b</sup> and Devasish Chowdhury<sup>\*a</sup>



**Figure 1S:** (A) UV lamp pictures of synthesized Azobenzene nanocluster under normal light and under UV lamp (365nm). (B) DLS size of AZONC (C) Stacked PL spectra of Azonanocluster without UV light (D) Stacked PL spectra of Azonanocluster light with UV light

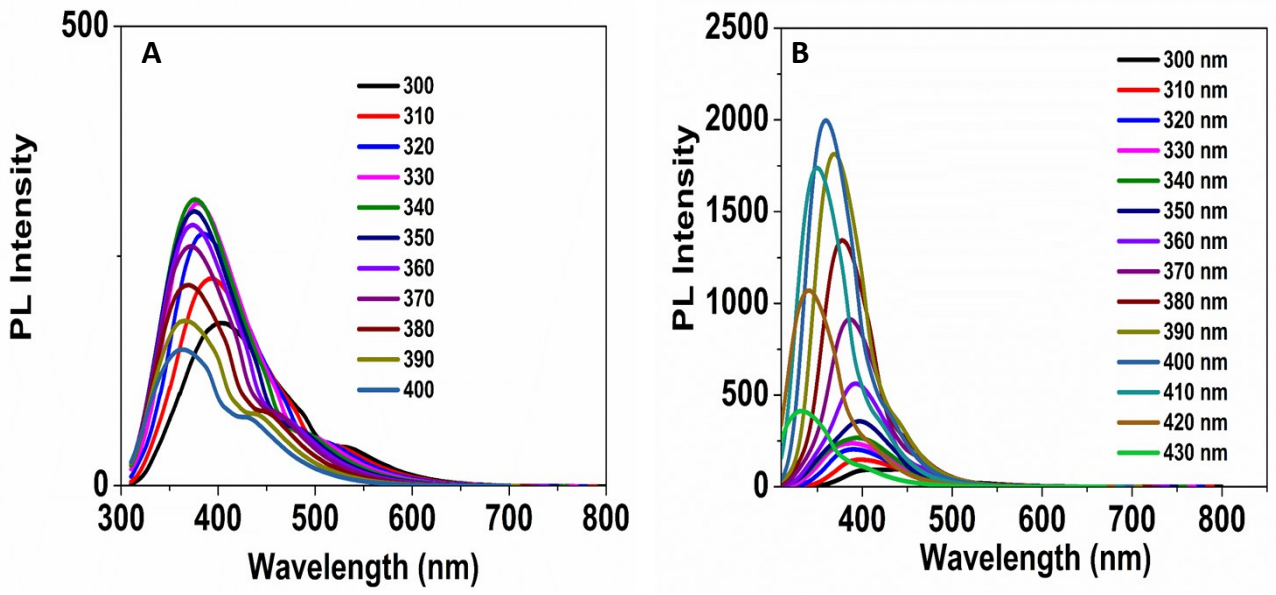


Figure2S: (A) Stacked PL spectra of methionine nanoparticle (B) Stacked PL spectra of cysteine nanoparticle

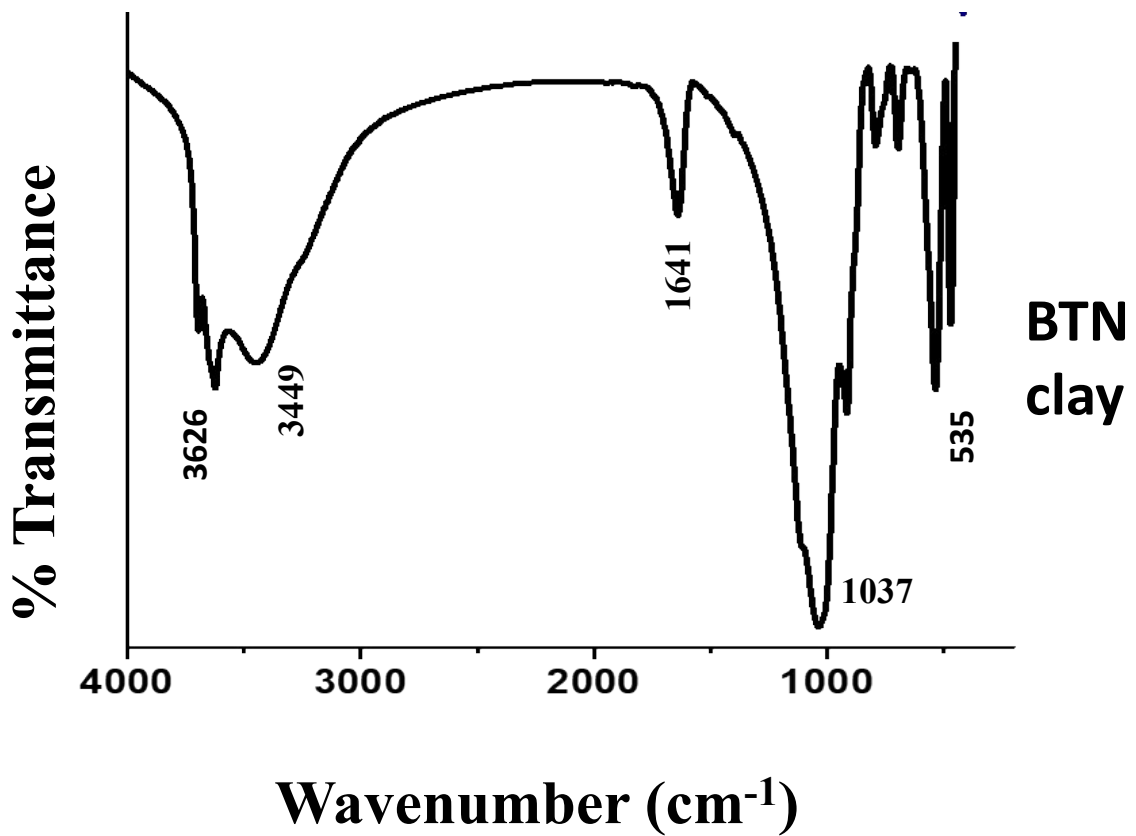


Figure3S: FTIR spectra of clay (BTN)

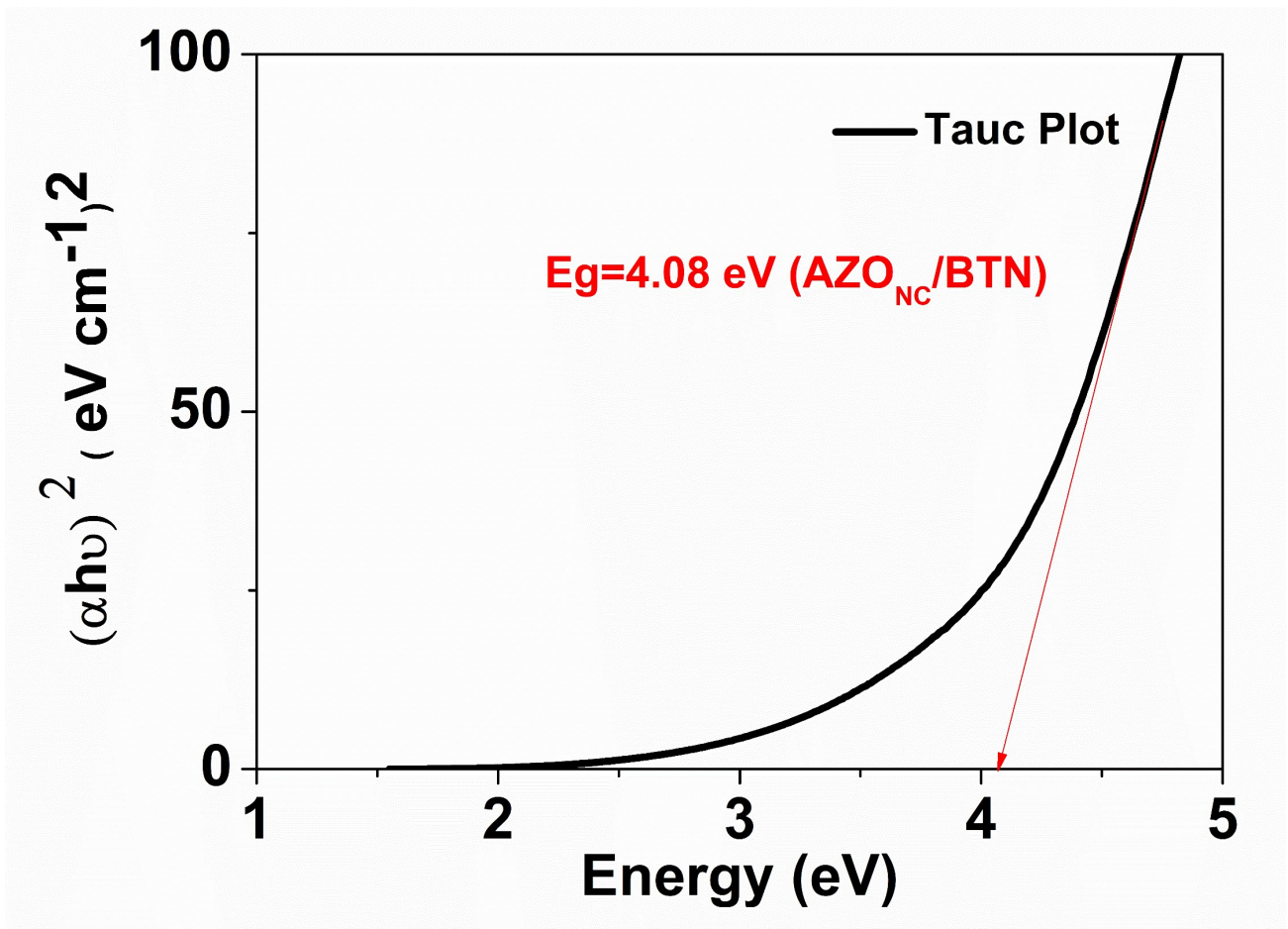
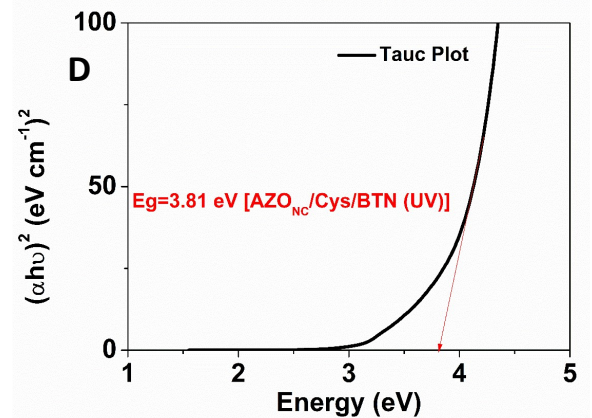
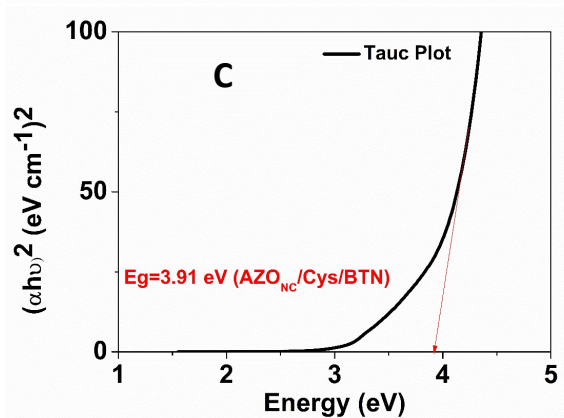
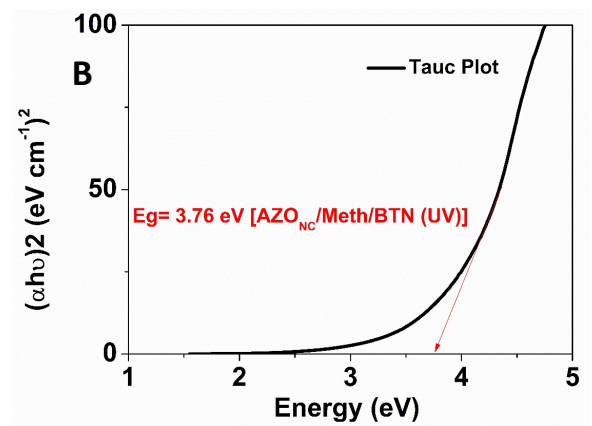
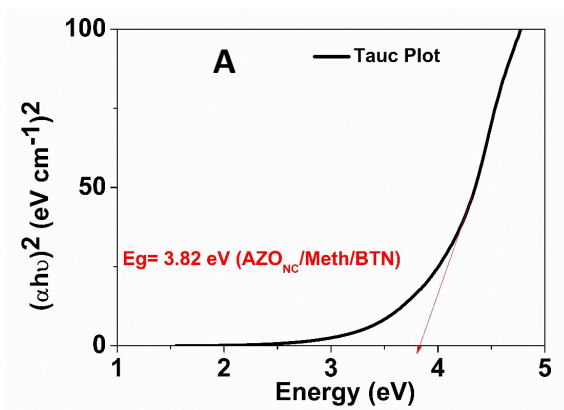
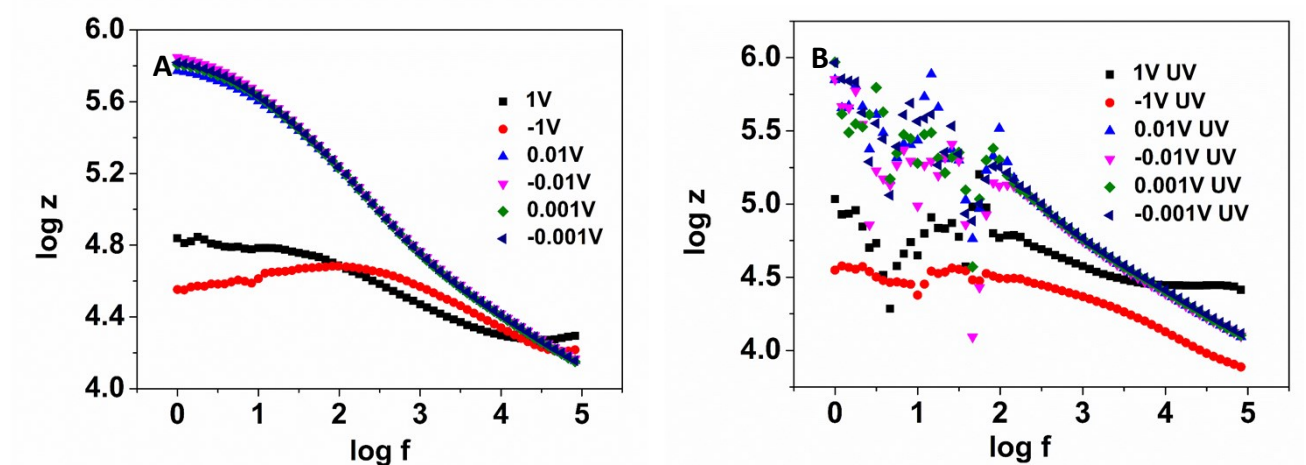


Fig 4S:  $(\alpha h\nu)^2$  vs optical band gap for AZO<sub>NC</sub>/BTN

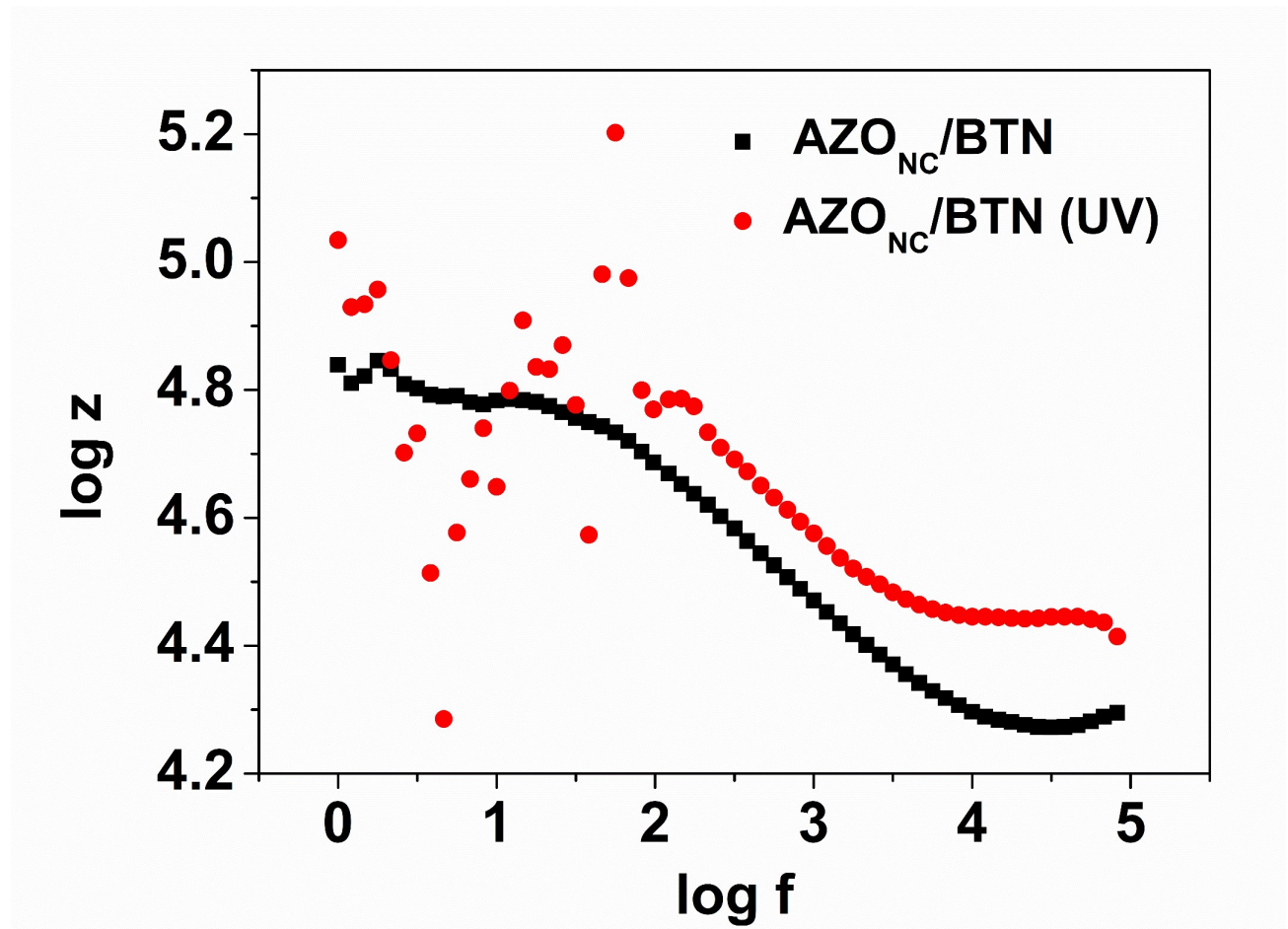




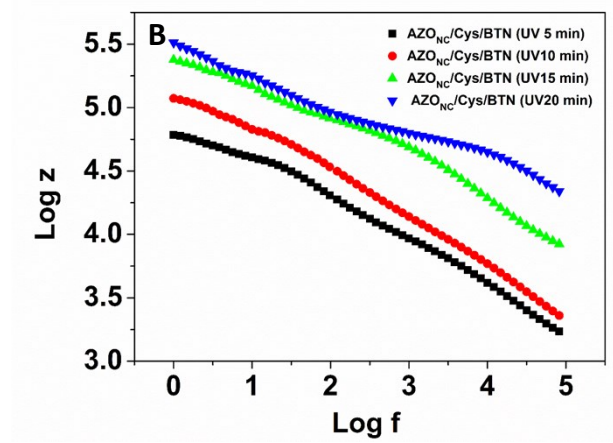
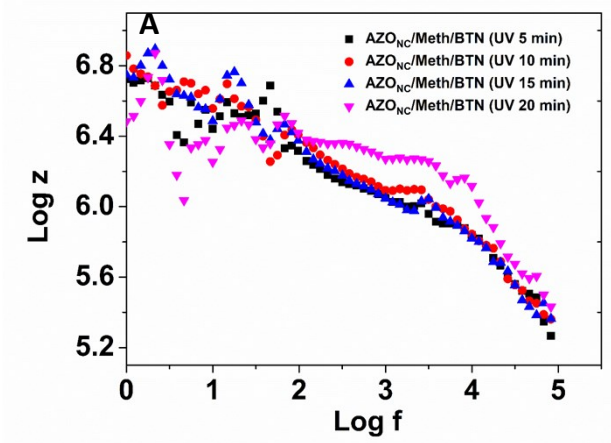
**Figure 5S:**  $(\alpha h\nu)^2$  vs optical band gap for (A) AZO<sub>NC</sub>/Meth/BTN (B) AZO<sub>NC</sub>/Meth/BTN with UV irradiation (C) AZO<sub>NC</sub>/Cys/BTN (D) AZO<sub>NC</sub>/Cys/BTN with UV irradiation



**Figure 6S:** Electrochemical Impedance Spectroscopy of Azonanocluster clay composite (A) without UV (B) with UV at different input voltage.



**Figure 7S:** Electrochemical Impedance Spectroscopy of Azonanocluster clay composite without UV and with UV



**Figure 8S.** log Z versus log f plot of (A) AZO<sub>Nc</sub>/Meth/BTN with UV treatment (B) AZO<sub>Nc</sub>/Cys/BTN with UV treatment at different response time of the composites.