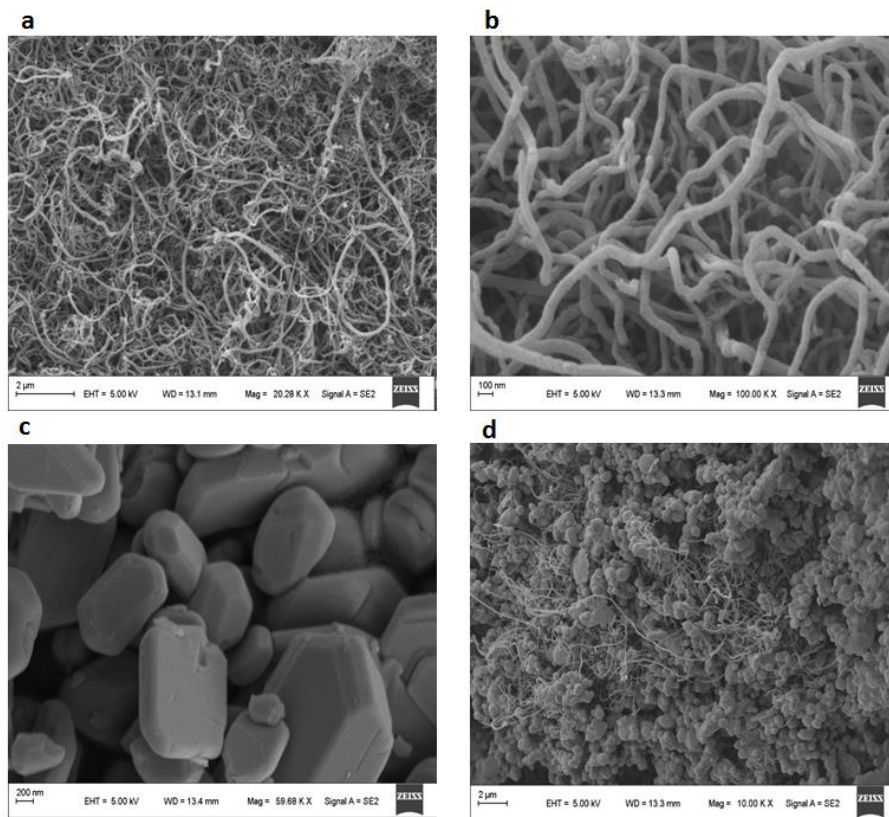


## Supporting Information for

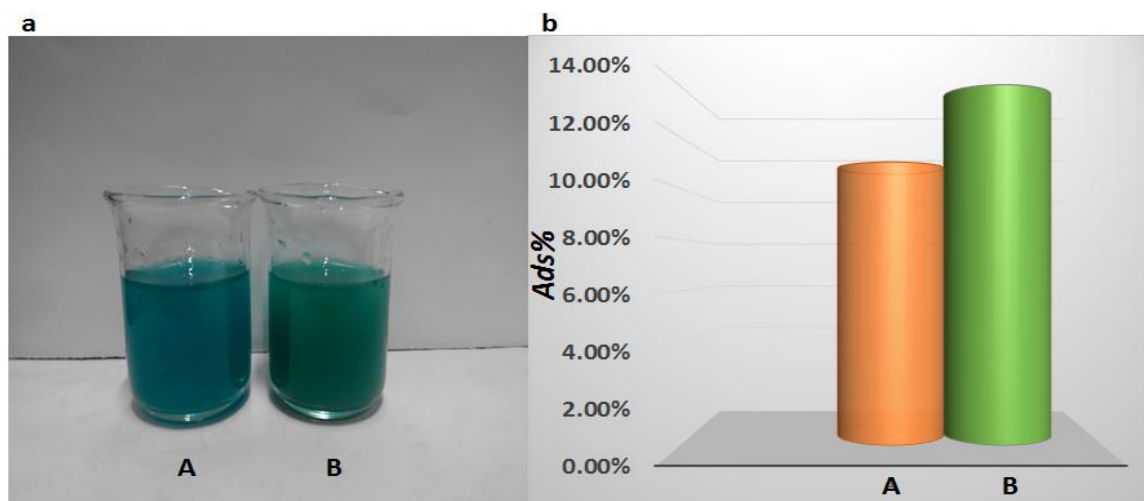
# Fabrication of a novel CNT-COO<sup>-</sup>/Ag<sub>3</sub>PO<sub>4</sub>@AgIO<sub>4</sub> Composite with Enhanced Photocatalytic Activity under Natural Sunlight

## 1. Characterization

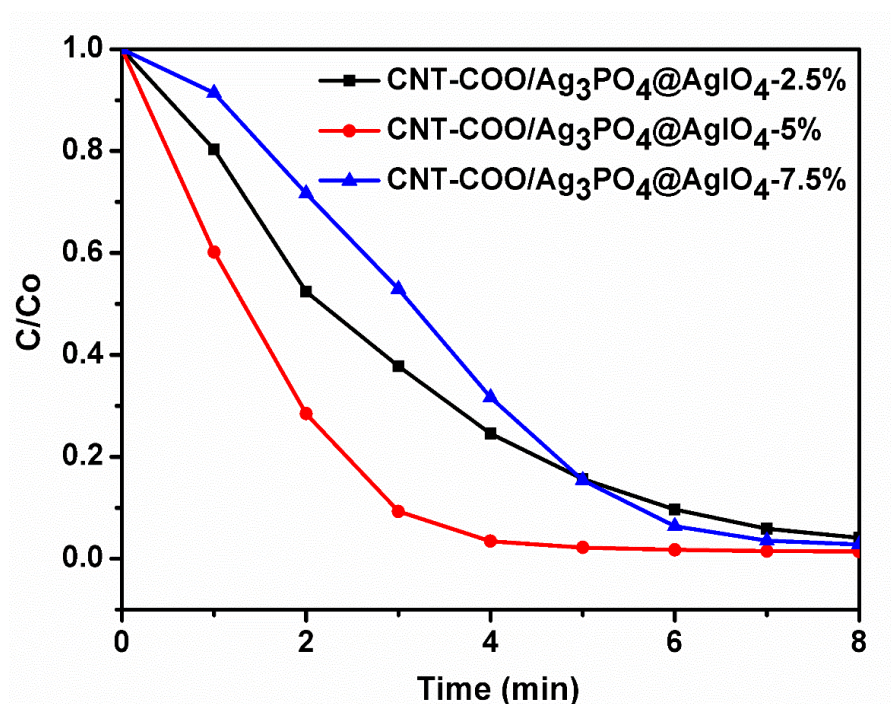


**Figure S1-** SEM image of (a) nonpurified CNT, (b) purified CNT, (c) AgIO<sub>4</sub>, (d) CNT/Ag<sub>3</sub>PO<sub>4</sub>@AgIO<sub>4</sub>.

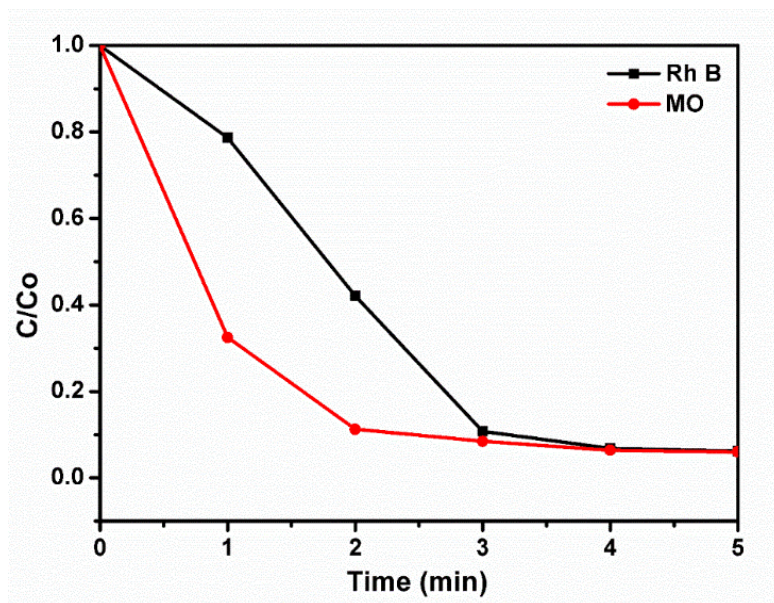
## 2. Photocatalytic Degradation Results and Analysis.



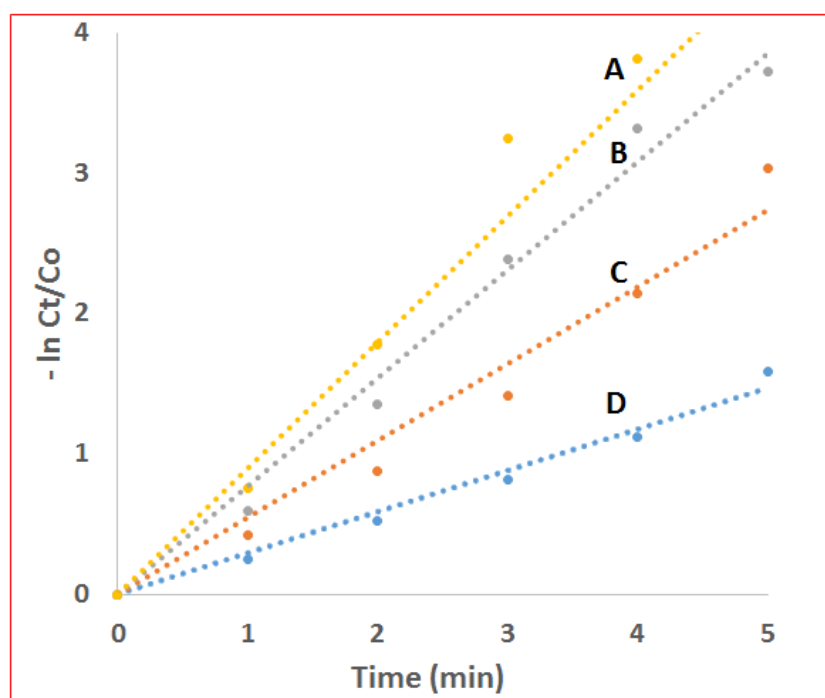
**Figure S2-** (a) Image of the dispersion of (A) CNT/Ag<sub>3</sub>PO<sub>4</sub>@AgIO<sub>4</sub> and (B) CNT-COO/Ag<sub>3</sub>PO<sub>4</sub>@AgIO<sub>4</sub>, in MB aqueous solution. (b) The adsorption of MB over: (A) CNT/Ag<sub>3</sub>PO<sub>4</sub>@AgIO<sub>4</sub> and (B) CNT-COO/Ag<sub>3</sub>PO<sub>4</sub>@AgIO<sub>4</sub> composites.



**Figure S3-** The photodegradation of MB over CNT-COO/Ag<sub>3</sub>PO<sub>4</sub>@AgIO<sub>4</sub> with different CNT-COO contents.



**Figure S4-** The photodegradation of different organic dyes over CNT-COO/Ag<sub>3</sub>PO<sub>4</sub>@AgIO<sub>4</sub>-5%, under sunlight irradiation.



**Figure S5-** Regression curves of  $-\ln(C_t/C_0)$  versus irradiation time for CNT-COO/Ag<sub>3</sub>PO<sub>4</sub>@AgIO<sub>4</sub>-5% under different light intensities (A) 100%, (B) 75%, (C) 50%, (D) 25%.