

## Supporting Information

### Facile fabrication of novel BiPO<sub>4</sub> phase junction with enhanced photocatalytic performance towards aniline blue degradation

Ahmed B. Azzam<sup>a</sup>, S.M. El-Sheikh<sup>b\*</sup>, R.A. Geioushy<sup>b</sup>, Bahaa Ahmed Salah<sup>a</sup>,  
Farida M. El-Dars<sup>a</sup>, Ahmed S. Helal<sup>c</sup>

<sup>a</sup> Chemistry Department, Faculty of Science, Helwan University, Helwan, Egypt

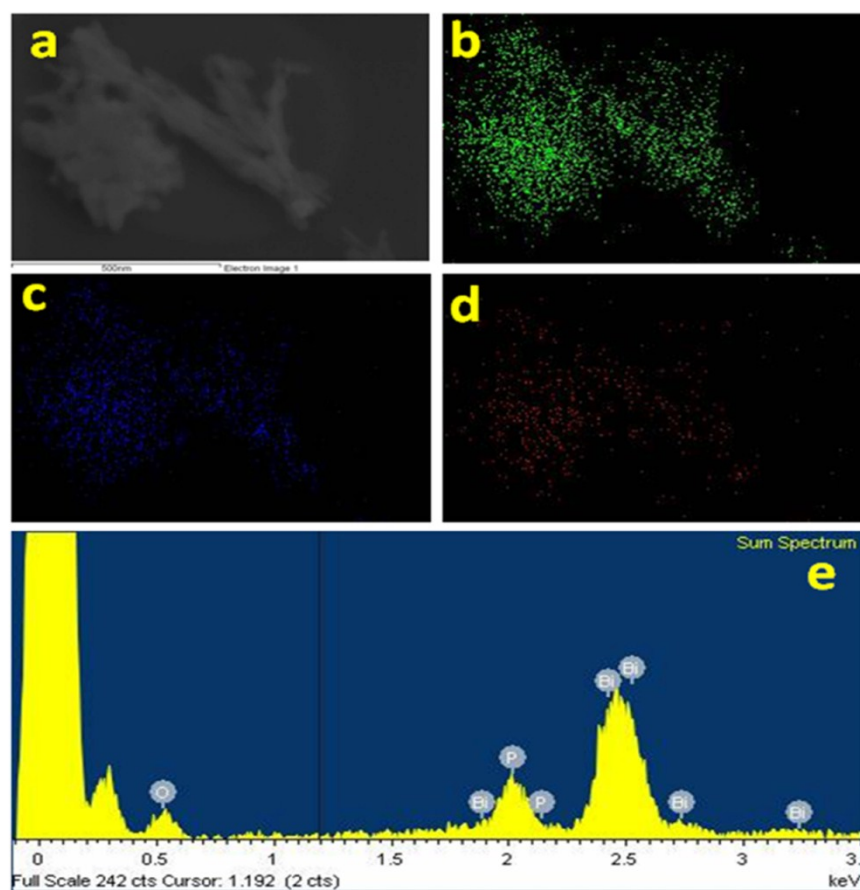
<sup>b</sup> Nanomaterials and Nanotechnology Department, Advanced Materials Division, Central Metallurgical R & D Institute (CMRDI), P.O. Box, 87 Helwan, 11421 Cairo, Egypt

<sup>c</sup> Department of Nuclear Science and Engineering, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139, USA

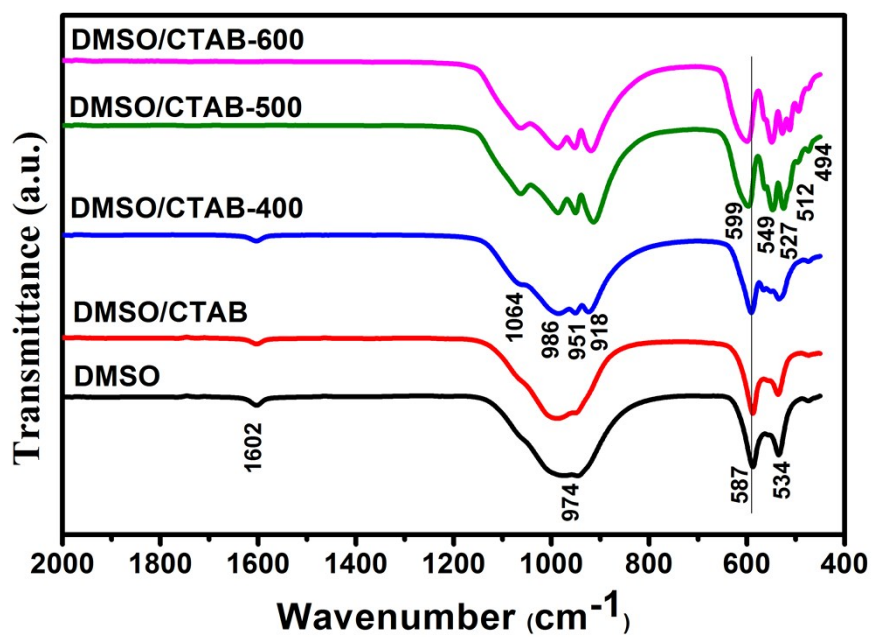
**Corresponding author :** S.M. El-Sheikh

**Email,** [selsheikh2001@gmail.com](mailto:selsheikh2001@gmail.com), [saidelsheikh@cmrdi.sci.eg](mailto:saidelsheikh@cmrdi.sci.eg)

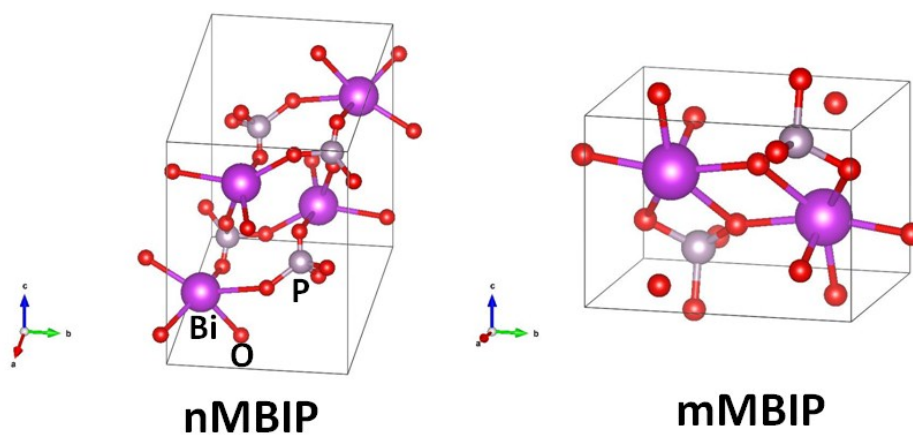
**Tele.** +201022316076



**Fig. S1** High-angle annular dark-field (HAADF) image of BiPO<sub>4</sub> sample calcined at 500 ° C (a), elemental mapping of Bi (b), P (c), O (d), EDS (e).



**Fig. S2** FT-IR spectra of the  $\text{BiPO}_4$  prepared in DMSO, DMSO/CTAB, and calcined DMSO/CTAB at 400 °C, 500 °C, 600 °C.



**Fig. S3** Crystal structures of nMBIP and mMBIP.

**Table S1** Brunauer-Emmet-Teller (BET) surface area and Barret-Joyner-Halenda (BJH) of the as-synthesized photocatalysts

| Photocatalyst                        | BET surface area<br>(m <sup>2</sup> g <sup>-1</sup> ) | BJH                   |                     |
|--------------------------------------|---|-----------------------|---------------------|
|                                      |   | Pore volume<br>(cc/g) | Pore radius<br>(nm) |
| BiPO <sub>4</sub> prepared in DMSO   | 88.96   | 0.103                 | 1.93                |
| BiPO <sub>4</sub> calcined at 500 °C | 67.52   | 0.058                 | 1.91                |