## **RSC Advances**



Electronic supplementary information

Novel one-pot synthesis and sensitisation of new  $BiOCI-Bi_2S_3$  nanostructures from DES medium displaying high photocatalytic activity

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Figure S1. Picture of samples B (1:1), F (SS/50) and pure BiOCl.



Figure S2. TEM images of sample G (DC/50).



Figure S3. XRD patterns of samples K and L prepared from dry chemicals in the proportion: (1:2) and (1:4), respectively, and comparison with pure BiOCI.



Figure S4 – TEM images of samples F(SS/50), K (1:2) and L (1:4).



Figure S5 – TEM images of nanoBi $_2S_3$ , pure BiOCl and BiOCl-Bi $_2S_3$  prepared in H $_2O$ .



Figure S6. XRD patterns of samples B and F, before (B (1:1) and F (SS/50)) and after (B' (1:1)/RhB and F' (SS/50)/RhB) degradation of RhB under UV-visible light.