Electronic Supplementary Information

for

Metal oxides decorated layered silicate magadiite for enhancing properties: Insight from ZnO and CuO decoration

by

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Fig. S1

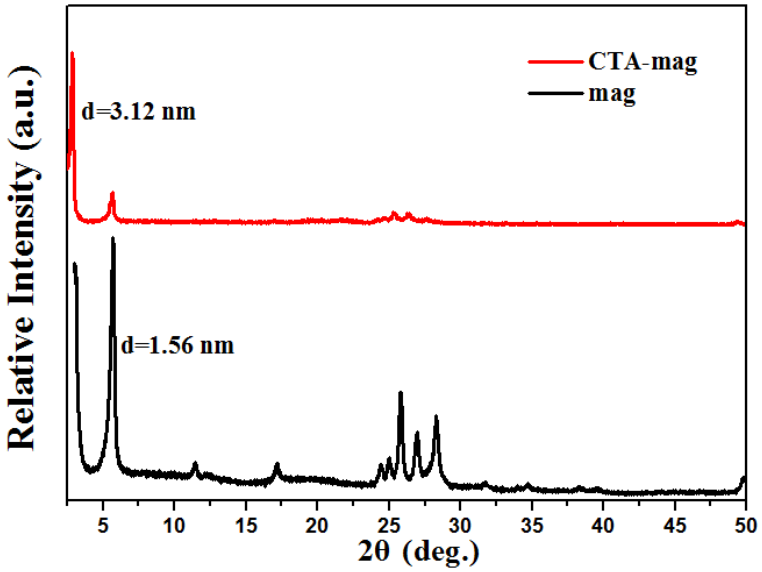

Fig. S1. XRD patterns of mag and CTA-mag.

Fig. S2

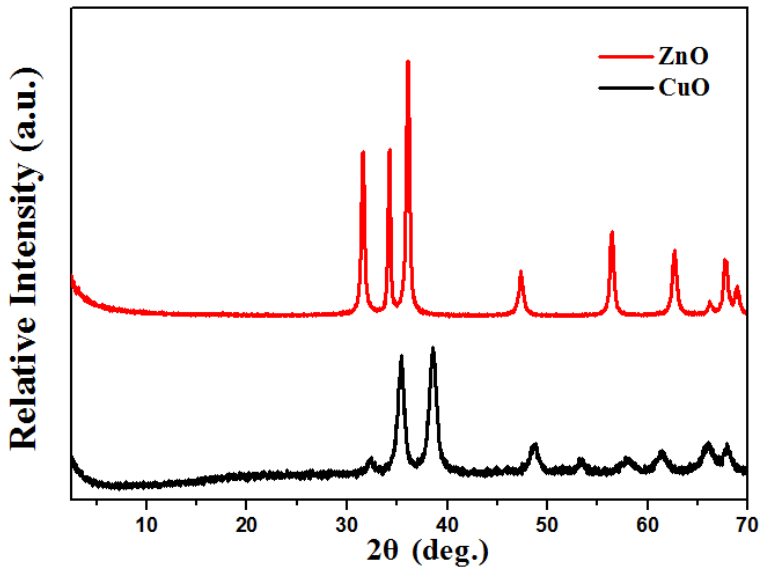

Fig. S2. XRD patterns of ZnO and CuO.

Fig. S3

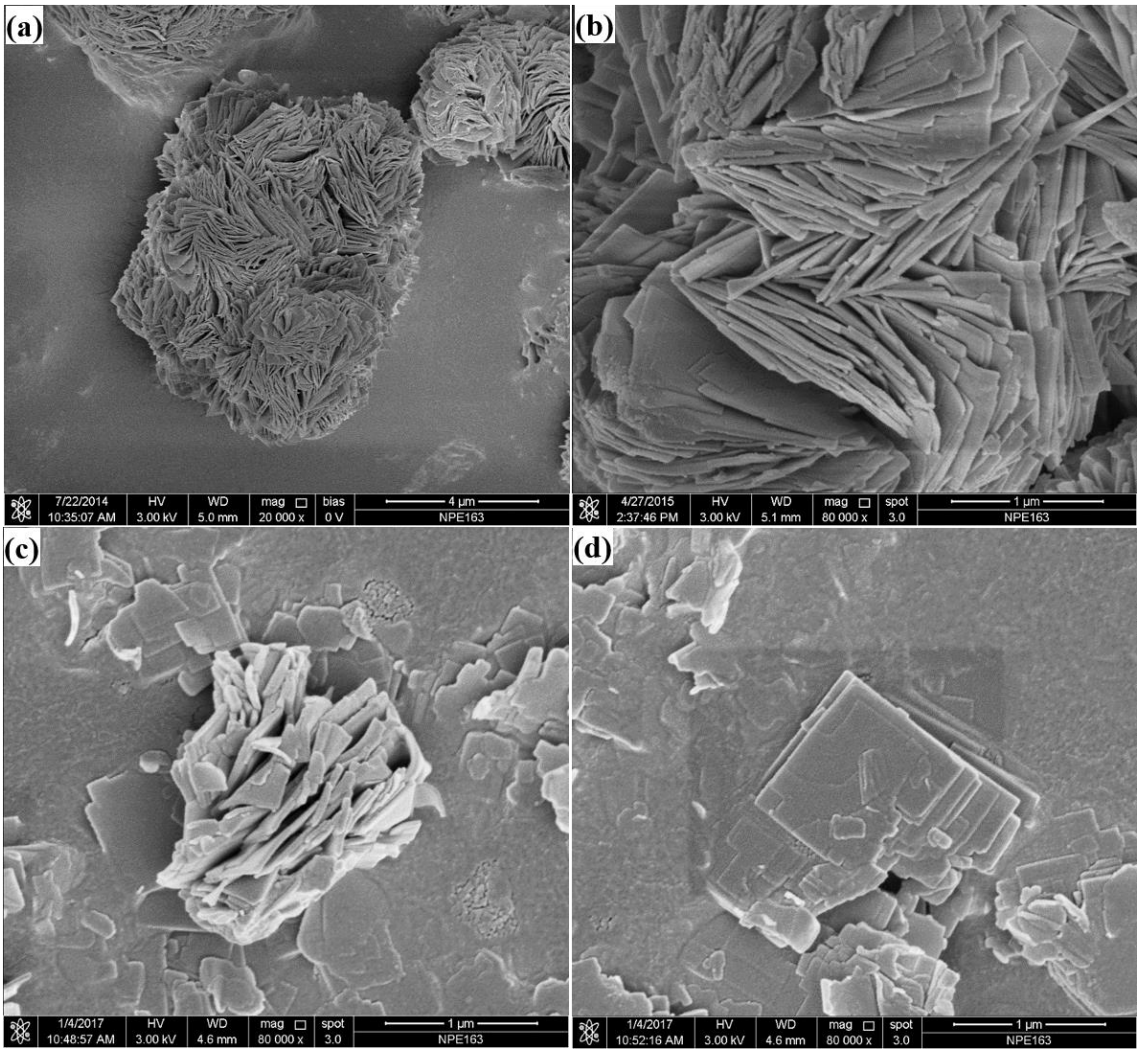

Fig. S3. FE-SEM images of (a-b) mag and (c-d) CTA-mag.

Fig. S4

Synthesis of CuO and ZnO

Reagents were analytical grade and used with further purification. A typical precipitation method was used to prepare CuO or ZnO. In a typical procedure, 50 ml of 0.5M copper sulfate solution in a round-bottom flask was heated to 100 ℃ with vigorous stirring. Then, about 2 g NaOH solid was rapidly added into the boiling solution until the pH ≈ 6-7 and a black precipitate is produced. After being cooled to room temperature, the black product was centrifuged and washed repeatedly to remove the excess base and dried at 80 ℃ overnight. The procedure in synthesis of ZnO was similar to the CuO.

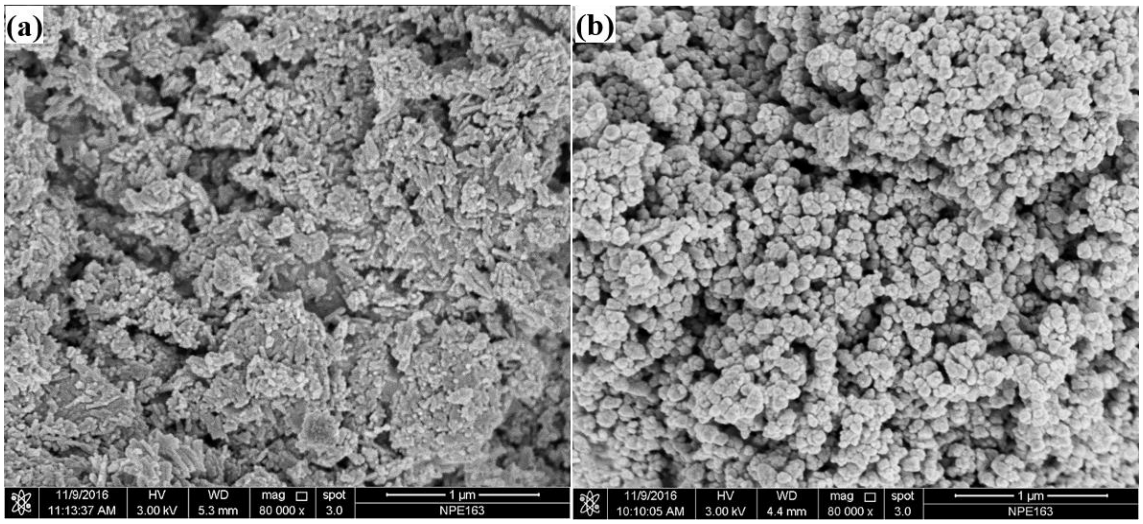

Fig. S4. FE-SEM images of (a) CuO and (b) ZnO.

Fig. S5

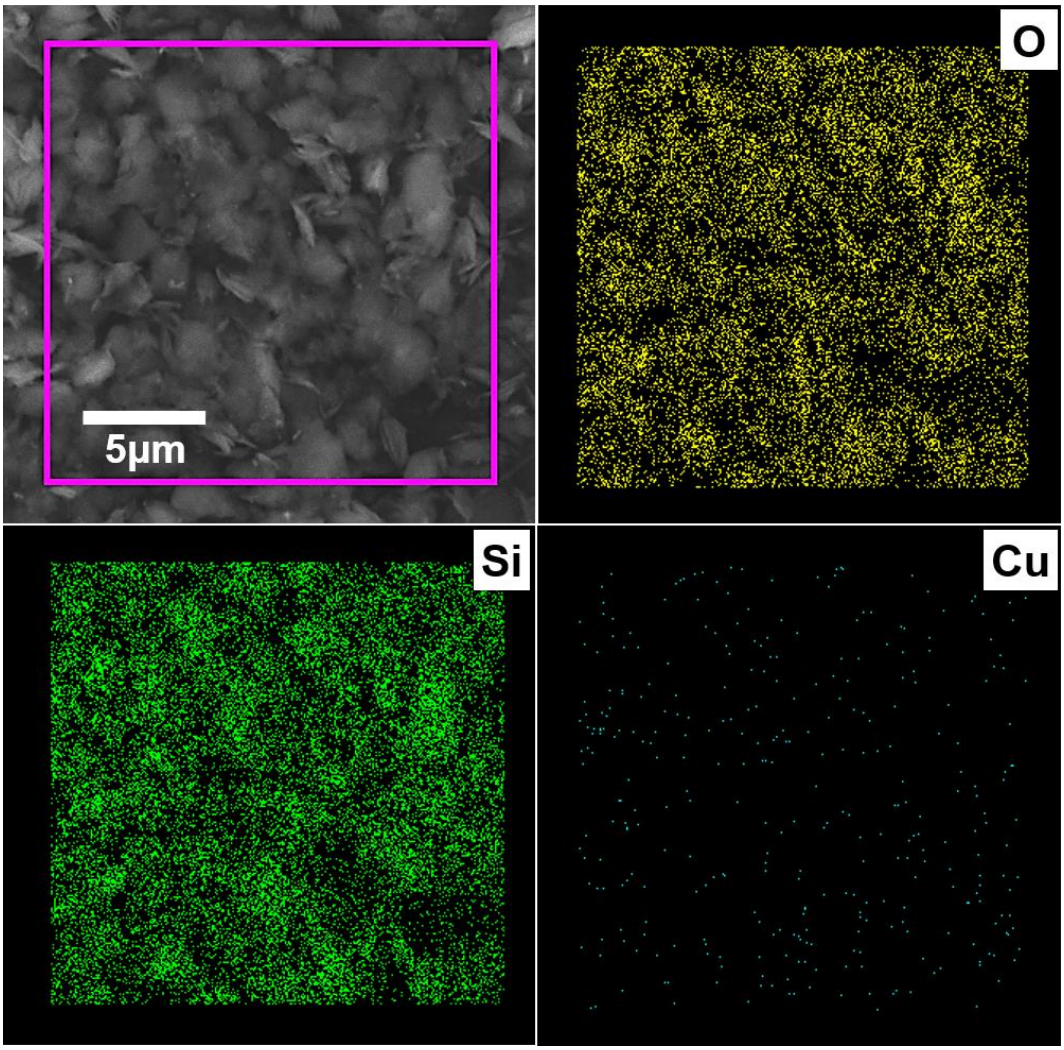

Fig. S5. Elemental mapping images of Si, O and Cu in CTA-CuO-mag-2.

Fig. S6

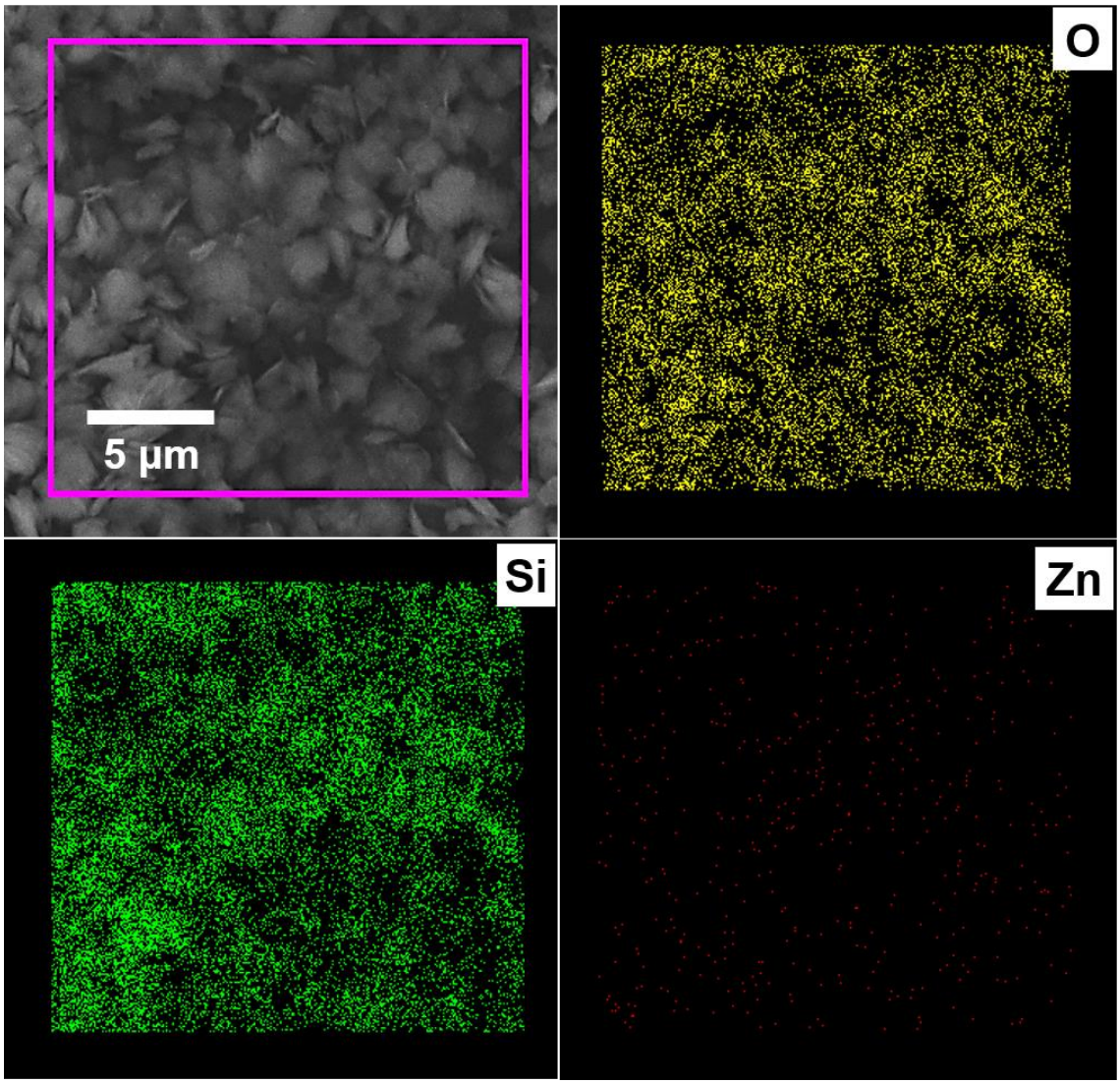

Fig. S6. Elemental mapping images of Si, O and Zn in CTA-ZnO-mag-2.

Fig. S7

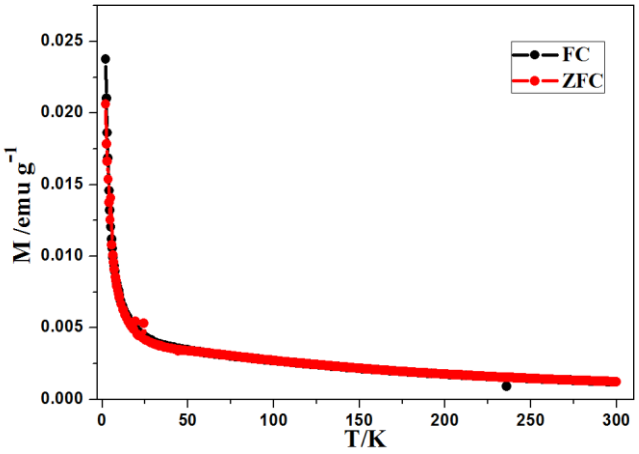

Fig. S7. M-T curves of CTA-Cu-mag-2, measured under zero-field-cooled (red symbols) and field-cooled (black symbols) conditions from 2-300 K in a field of 1000 Oe

Mag and CTA-mag are tested with no sign of magnetism.

Fig. S8

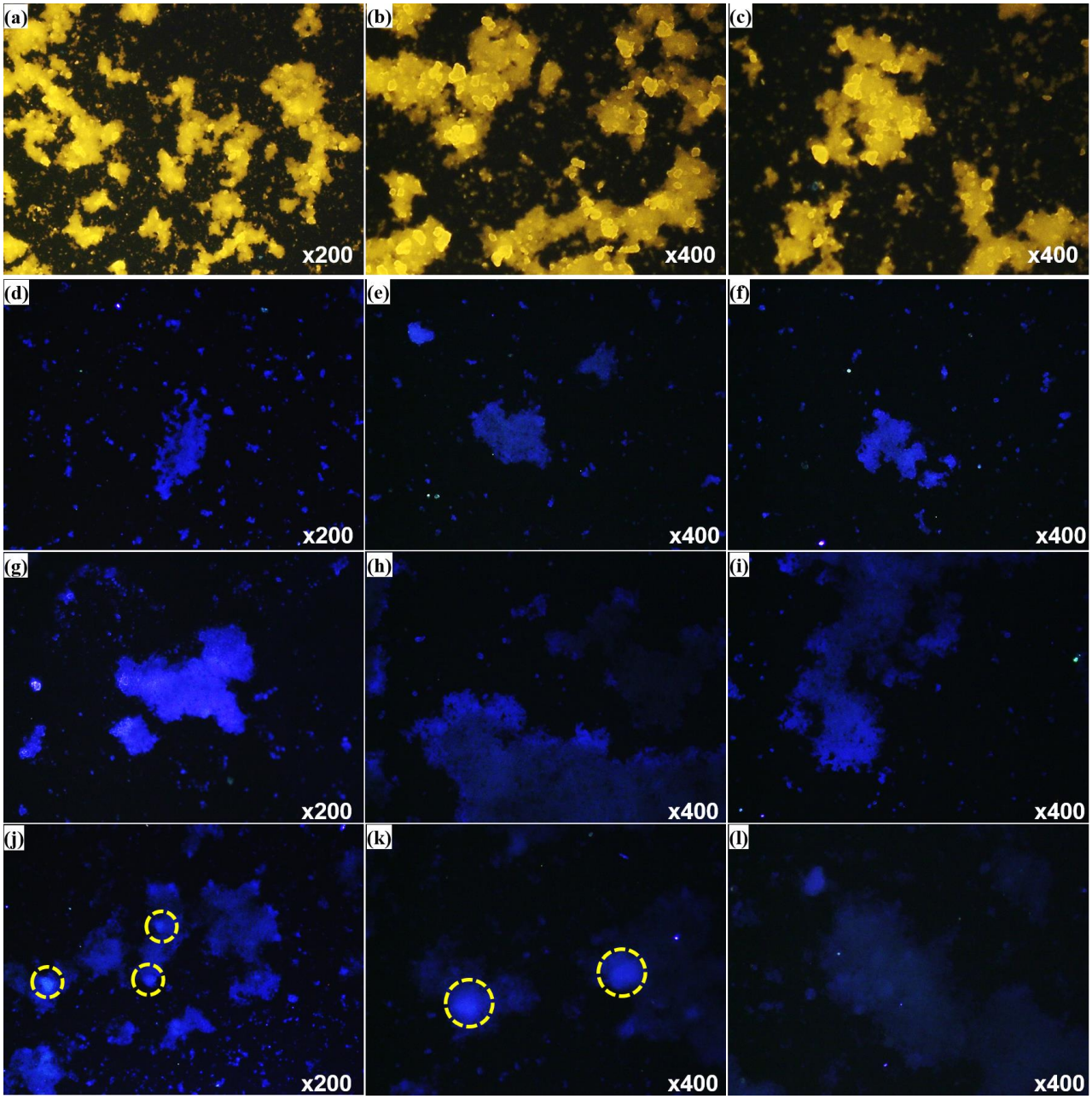

Fig. S8. Inverted fluorescence microscope images of (a-c) ZnO, (d-f) CTA-ZnO-mag-1, (g-i) CTA-ZnO-mag-2, (j-l) CTA-ZnO-mag-3 under 250 nm UV light irradiation.