Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

Supporting Information

Harnessing synchronous photothermal and photocatalytic effect of cryptomelane-type MnO_2 nanowire towards clean water production

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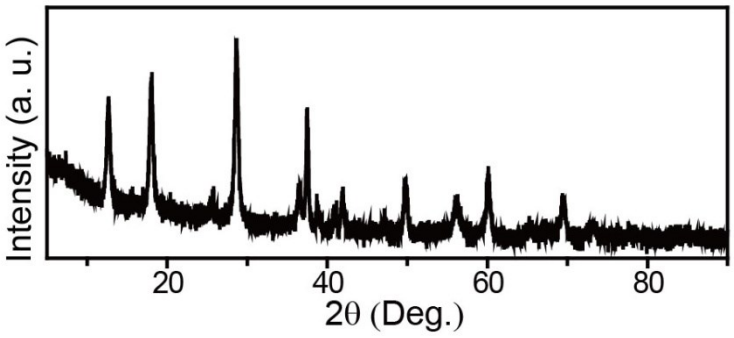

Figure S1. The X-Ray diffraction spectrum of the as-prepared crypomelane-type MnO_2 nanowire.

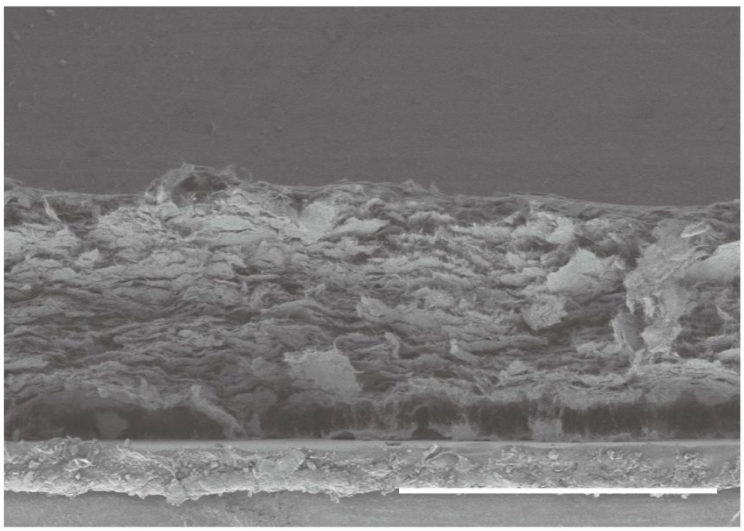

Figure S2. The cross – sectional SEM image of the MnO_2 light absorber. The scale bar is 1 mm.

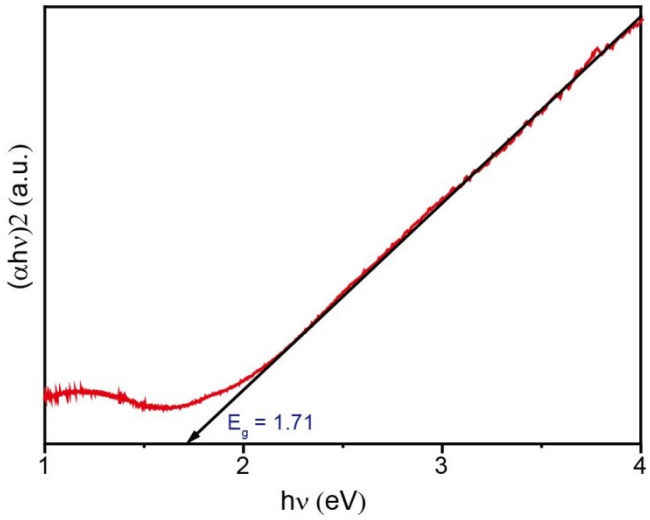

Figure S3. Calculation of optical bandgap from UV-Vis-NIR absorption spectrum of MnO_2 light absorber.

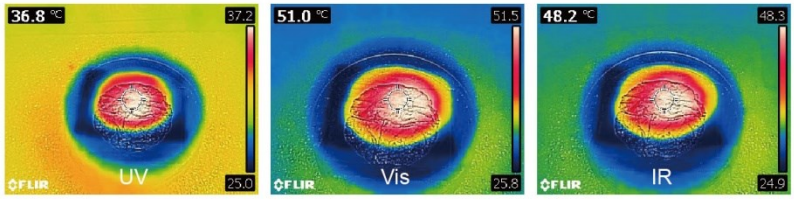

Figure S4. The IR images of the MnO_2 light absorber in solar generator under UV, Vis and IR irradiations. (The UV, Vis, and IR irradiations were filtered from solar simulator with intensity of 3 kW m^{-2})

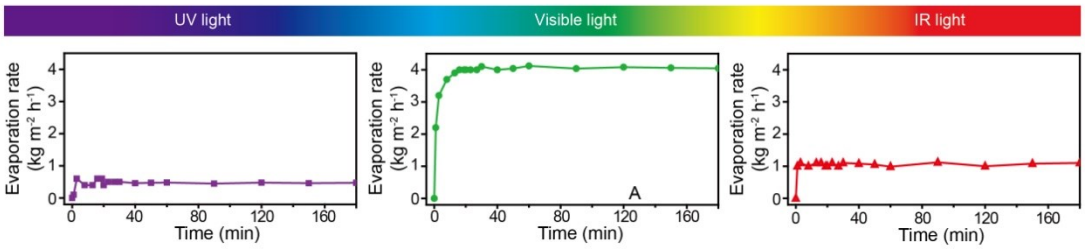

Figure S5. The evaporation rates of the device under UV, Vis, and IR light, respectively. The UV, Vis, and IR irradiations were filtered from solar simulator with intensity of 3 kW m^{-2}.

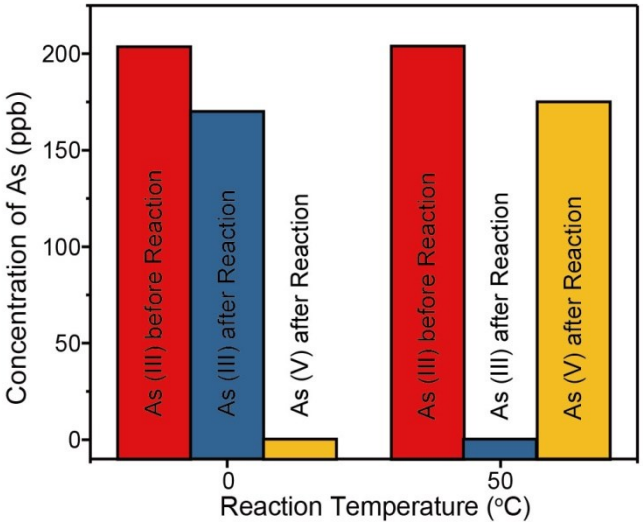

Figure S6. The thermodynamic As(III) oxidation reaction observed in MnO_2 suspension at 50 °C in dark.

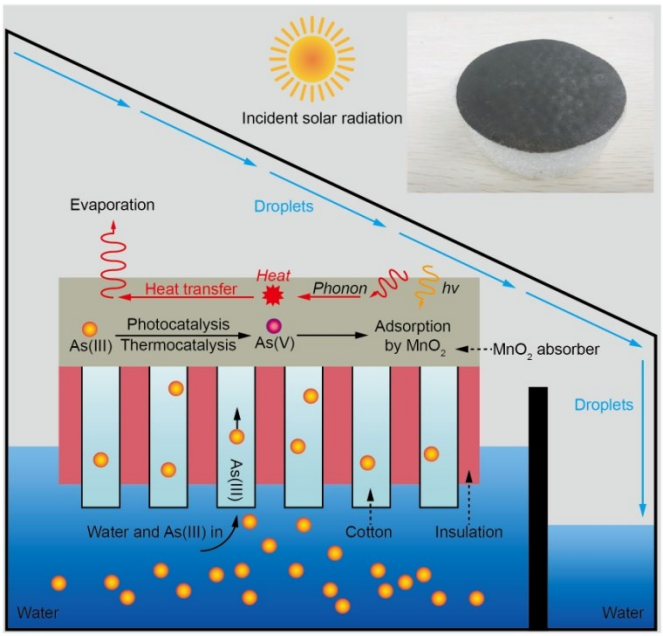

Figure S7. The design and digital image of MnO_2 based solar steam generator.

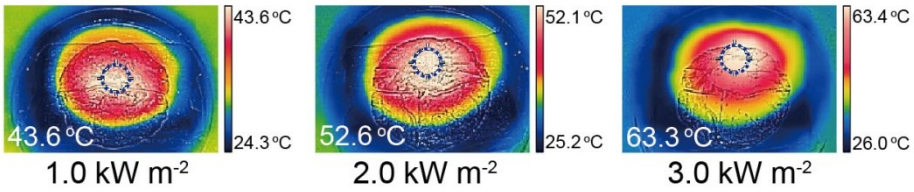

Figure S8. The IR images of the MnO_2 light absorber in solar generator under solar irradiation with different intensities.