

## Supporting Information

### Full Solar Spectrum Light Driven Thermocatalysis with Extremely High Efficiency on Nanostructured Ce Ion Substituted OMS-2 Catalyst for VOCs Purification

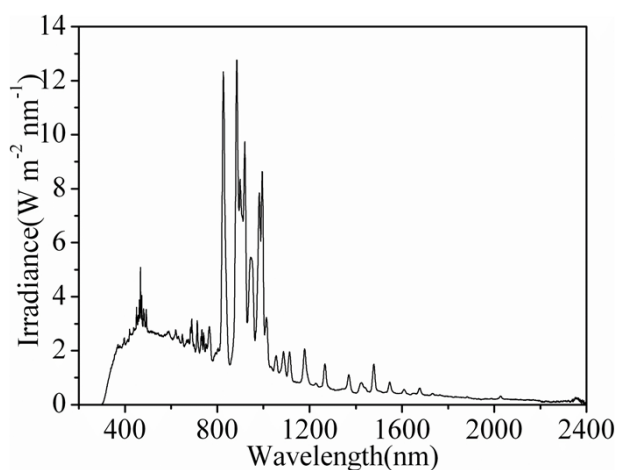
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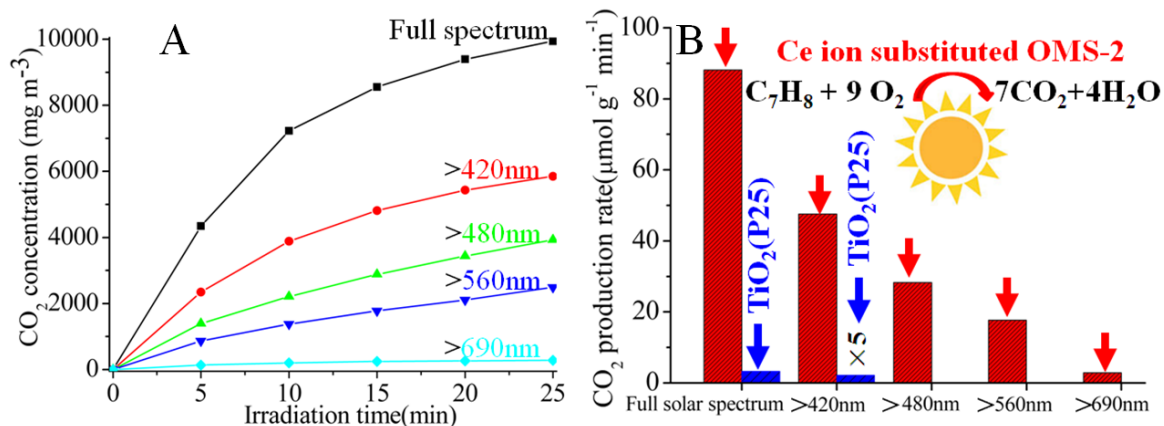
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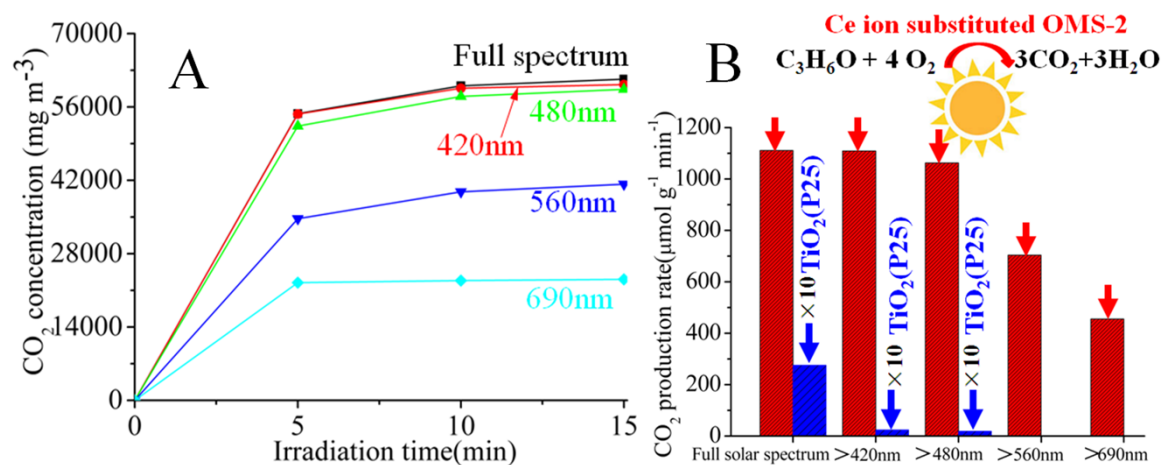
<sup>4</sup> Department of Materials Science & Metallurgy, University of Cambridge, Cambridge CB3 0FS, United Kingdom



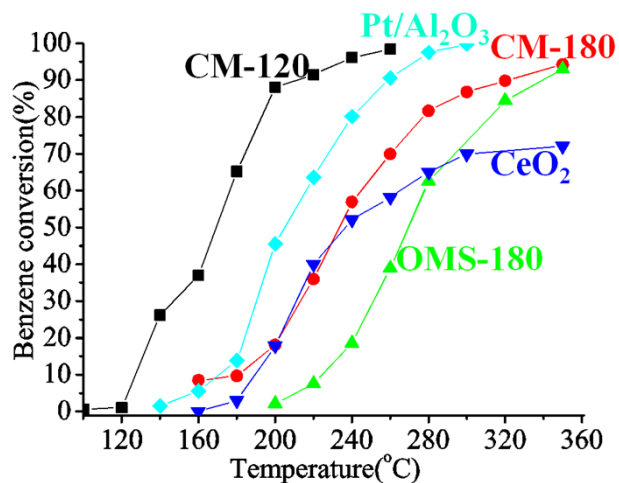
**Figure S1.** The spectral profile of the irradiation of a 500 W Xe lamp.



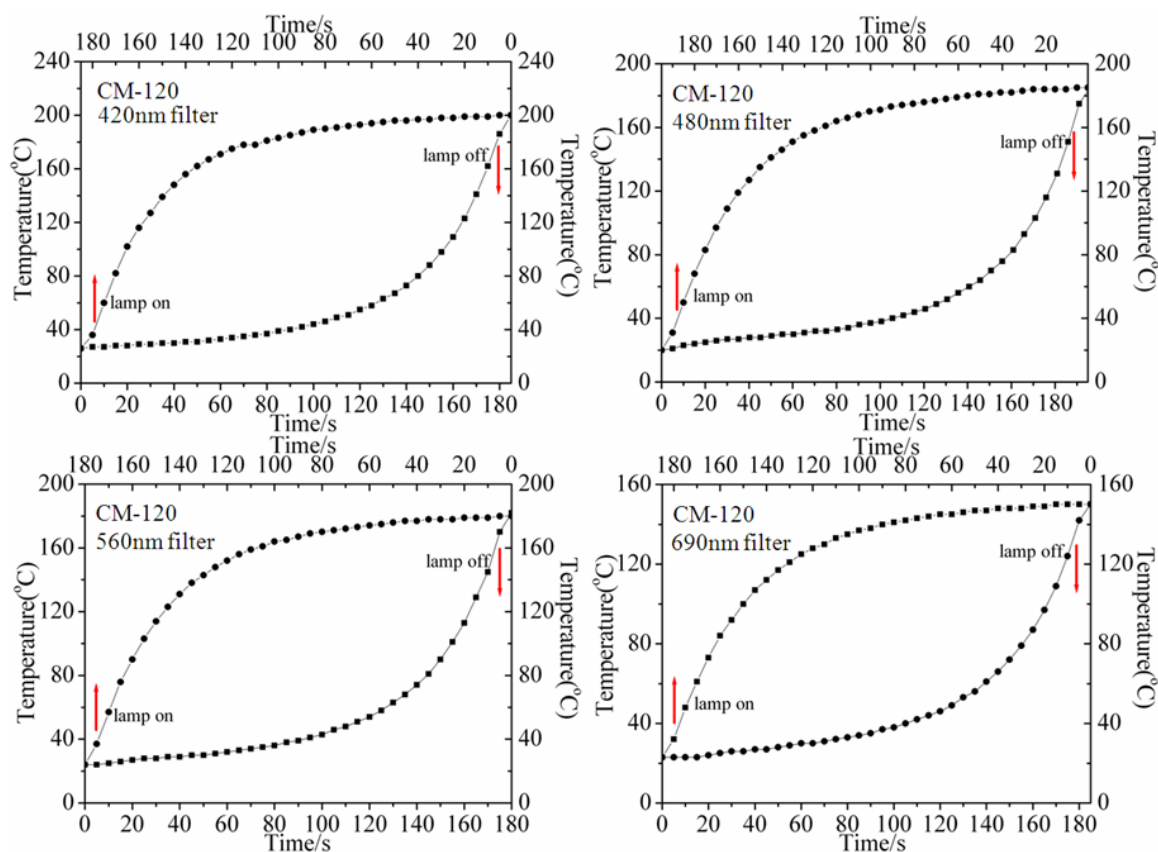
**Figure S2.** Time course of CO<sub>2</sub> concentration (A) and  $r_{CO_2}$  for toluene oxidation (B) on CM-120 and TiO<sub>2</sub> (P25) under the full solar spectrum and visible-infrared irradiation by using different cut-off filters.



**Figure S3.** Time course of CO<sub>2</sub> concentration (A) and  $r_{CO_2}$  for acetone oxidation (B) on CM-120 and TiO<sub>2</sub> (P25) under the full solar spectrum and visible-infrared irradiation by using different cut-off filters.



**Figure S4.** Benzene conversion versus reaction temperature without irradiation over CM-120 for the oxidation of benzene under the condition of benzene concentration = 2000 mg m<sup>-3</sup> and SV = 48000 mL g<sup>-1</sup> h<sup>-1</sup> (for review only).<sup>33</sup>



**Figure S5.** Temporal change of the temperature on CM-120 under the visible-infrared irradiation by using different cut-off filters and after switching off the Xe lamp.