Supporting Information

Barium zirconate: a new photocatalyst for converting CO_2 into hydrocarbons under UV irradiation

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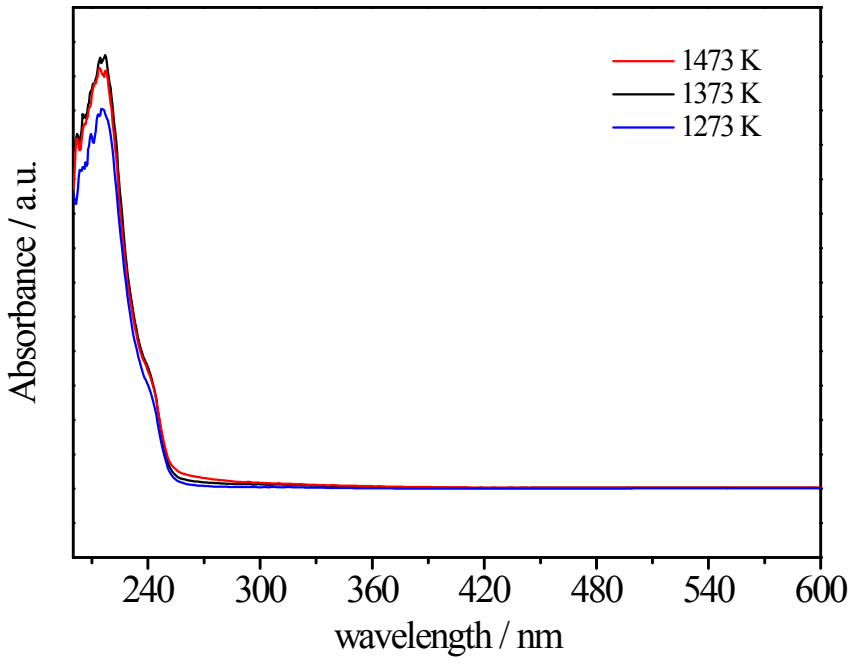

Fig.S1. The UV-vis patterns of $BaZrO_3$ derived at different temperature.

By processing the UV-vis spectra data of $BaZrO_3$ with the Kubelka-Munk method, the diffuse reflectance spectra data was converted to the

absorbance. And the absorption edge of all the $BaZrO_3$ samples is around 260 nm which indicates $BaZrO_3$ is a wide-band gap semiconductor. As shown in Fig. S1, the absorption edge had no obvious change as the calcinations temperature increased. The band gap of the samples was around 4.8 eV.