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# Supplementary Information

# A simple and low-cost method for the preparation of self-supported $TiO_2$:$WO_3$ ceramic heterojunction wafers

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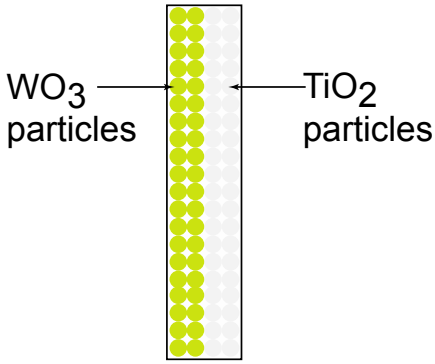
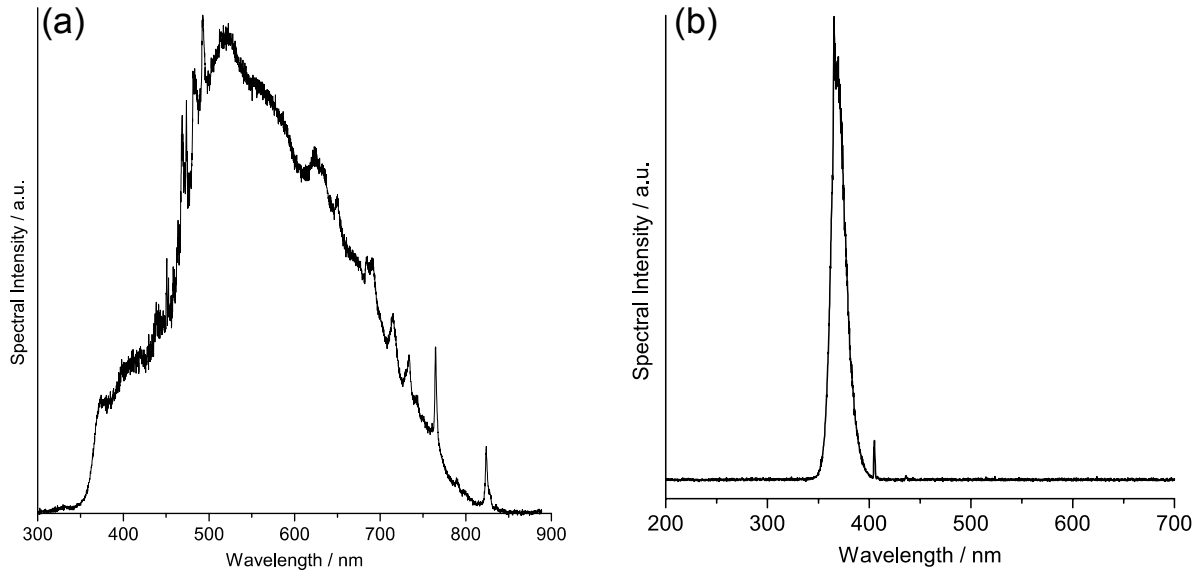


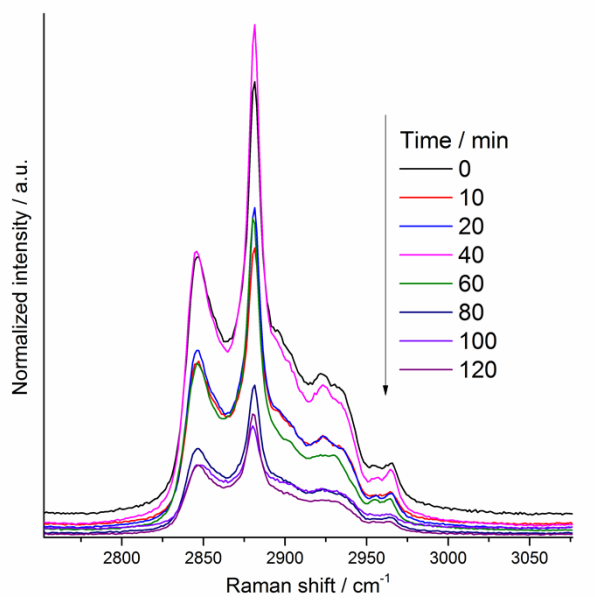

Illustration depicting the preparation of layered $TiO_2$-$WO_3$ ceramic wafers
**Fig. S1**


Photograph of the CNC-milled aluminum 'UCL' lettering cut-out template.
**Fig. S2**




Spectral output of (a) 75 W Xe lamp and (b) 2 × 8W 365 nm lamp.
**Fig. S3**

We attempted to use Raman spectroscopy to evaluate the degradation of stearic acid. Stearic acid was dropped onto the $TiO_2$ or $WO_3$ surface of the $TiO_2$:$WO_3$ SPH and Raman spectra (514.5 nm laser) were taken every 10 minutes of the surface containing stearic acid. Although significant degradation was observed (there was a rapid decrease in integrated peak areas from peaks contributed to by stearic acid over 2 hours of the experiment), we were concerned that the Raman laser may have potentially contributed to the degradation of stearic acid, especially on the $WO_3$ surface (Fig. S5 shows the Raman spectra obtained), and for this reason we did not continue to use this technique and instead monitored the degradation by $CO_2$ evolution, as described in the main text.




Raman spectra obtained during stearic acid degradation experiment.
**Fig. S4**

## References

1. S. Elouali, A. Mills, I. P. Parkin, E. Bailey, P. F. McMillan and J. A. Darr, *J. Photochem. Photobiol., A*, 2010, **216**, 110-114.