Electronic Supplementary Material (ESI) for Nanoscale.
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Supporting Information

A crystalline and 3D periodically ordered mesoporous quaternary semiconductor for photocatalytic hydrogen generation

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Results and Discussion

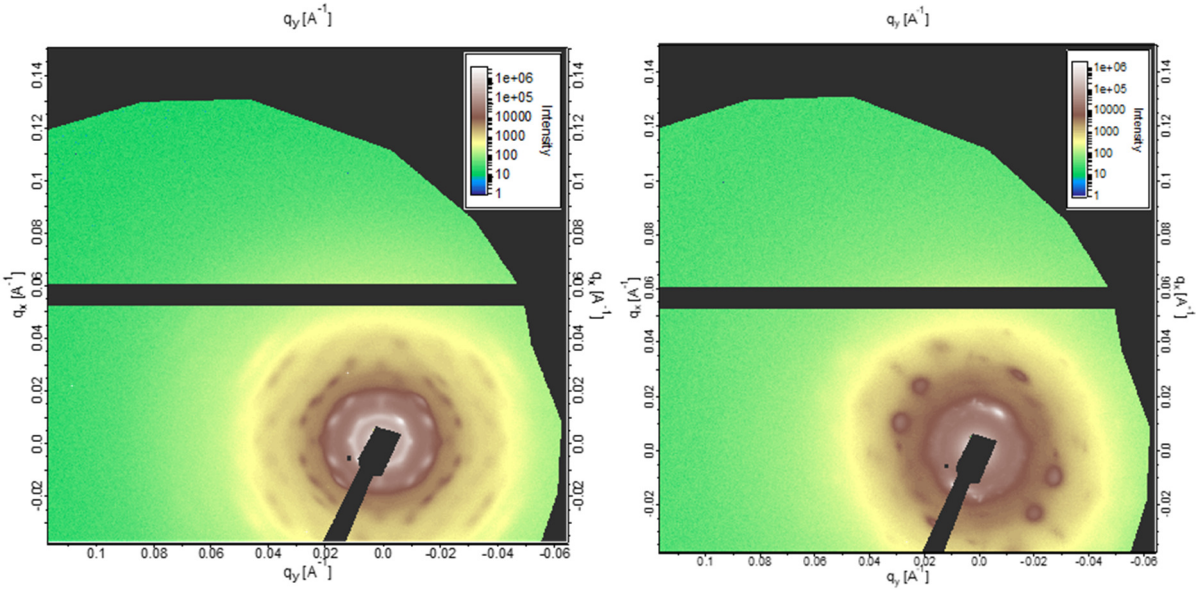

Figure S1. Two-dimensional SAXS datasets before (left) and after (right) calcination showing several spots indicative of orientation or large grain sizes.

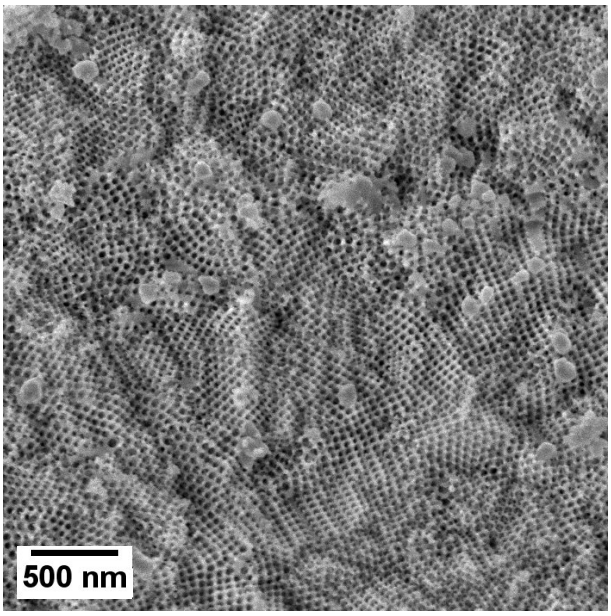

Figure S2. Low magnification SEM image of ISO-derived mesoporous $CsTaWO_6$

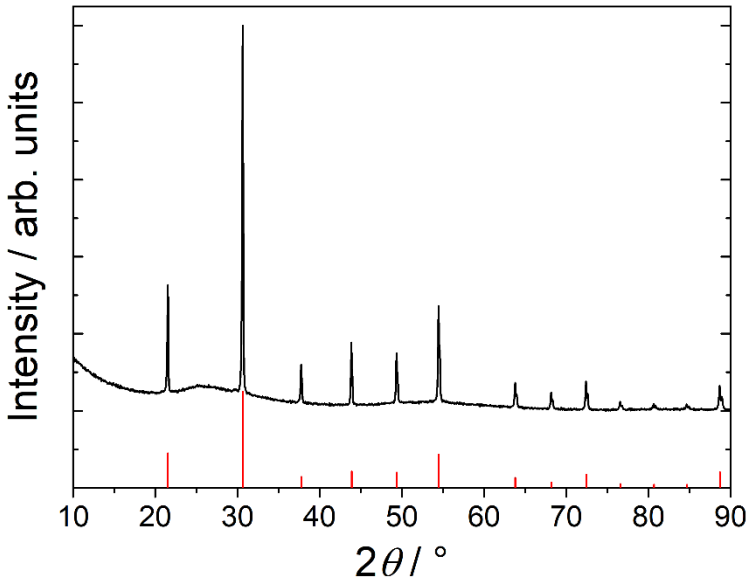

Figure S3. XRPD pattern of the product of Cs_2CO_3 plus $TaCl_5$ dissolved in EtOH and dried at 80 °C. The bottom shows a reference card for CsCl (JCPDS card no. 02-2173).

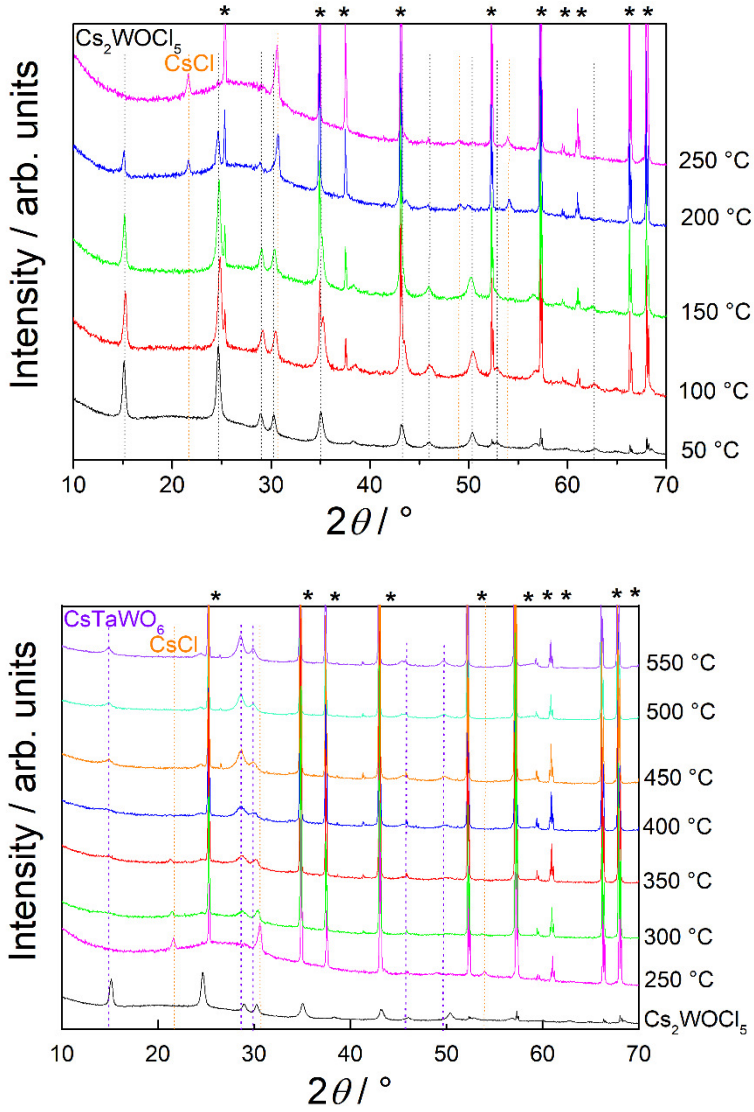

Figure S4. *In-situ* XRPD patterns of the dried ISO-Cs_2WOCl_5 composite with reference lines for CsCl (orange, JCPDS card no. 02-1445) and $CsTaWO_6$ (purple, JCPDS card no. 25-0233), calcined at different temperatures (* assigned to reflections from the sample carrier).

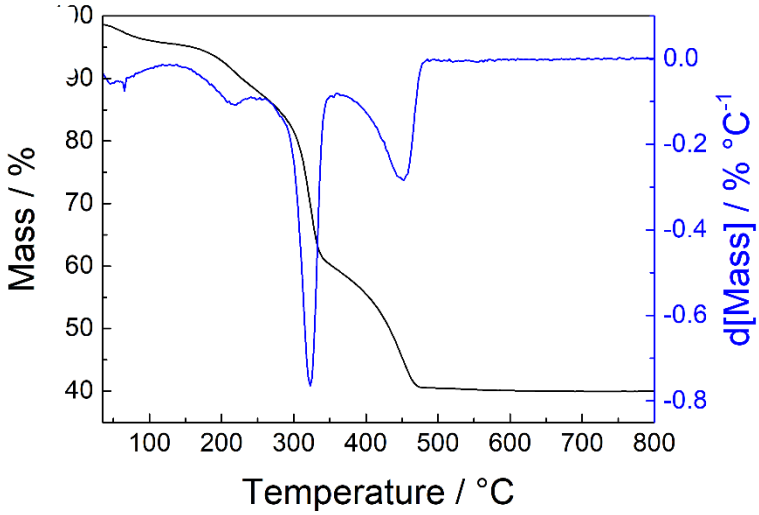

Figure S5. TG and DTG data for ISO-derived mesoporous $CsTaWO_6$

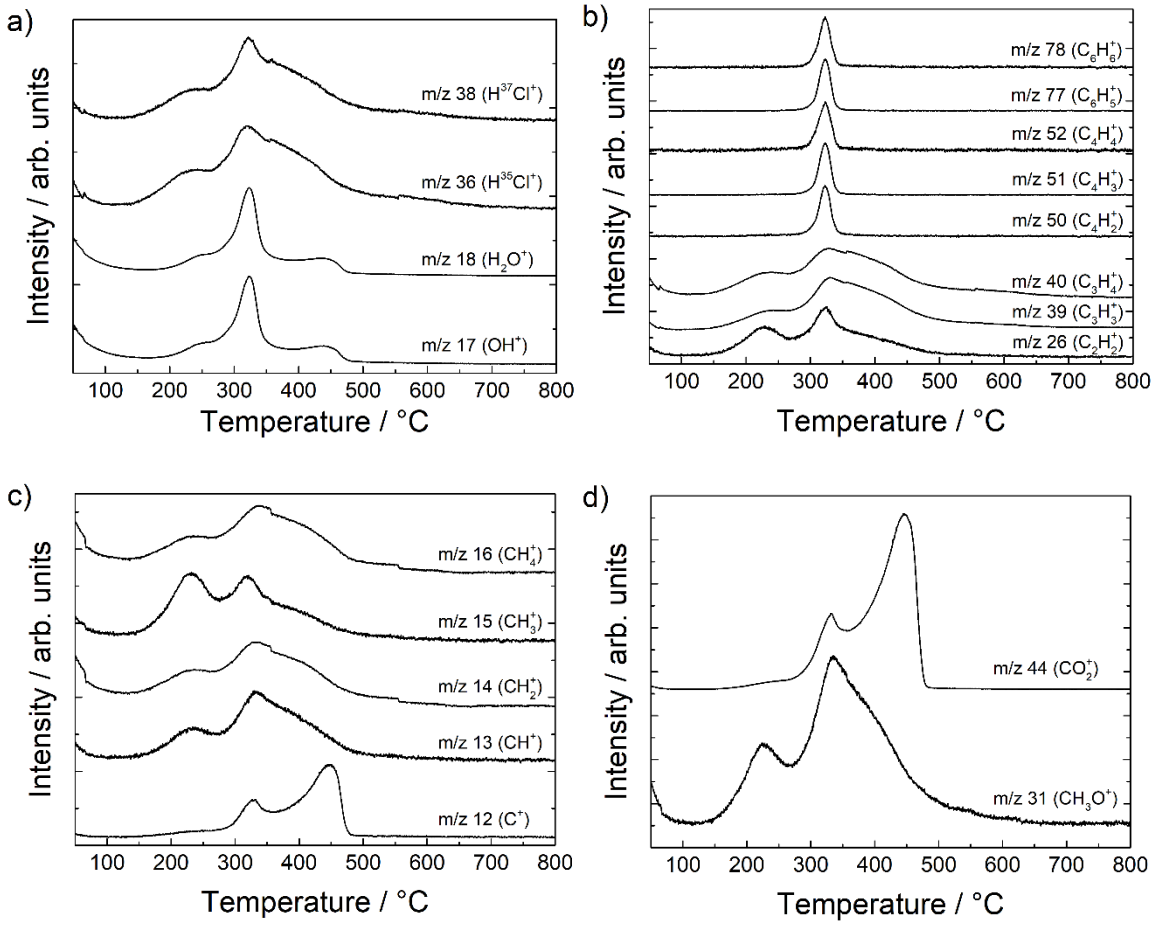

Figure S6. MS traces of ISO-derived $CsTaWO_6$, a) water- and chlorine-derived signals; b) large bigger organic fragments from polystyrene (PS); c) smaller organic fragments from polyethylene oxide (PEO) and polyisoprene (PI); and d) other fragments, including CO_2, which is released up to 500 °C.