Fast microwave synthesis of gold doped TiO$_2$ assisted by modified cyclodextrins for photocatalytic degradation of dye and hydrogen production

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Figure S1. N₂ adsorption desorption isotherms of TiO₂-control (a) gold decorated titania materials prepared without CD (TiO₂@Au) (b) gold decorated titania materials prepared with HP-β-CD (TiO₂@Au-HP) (c) gold decorated titania materials prepared with RAME-β-CD (TiO₂@Au-RB) (d)
Figure S2. TEM images of TiO$_2$@Au catalyst at magnification of × 62000
Figure S3. TEM images of (a) TiO$_2$@Au-RB and (b) TiO$_2$@Au-HB at magnification of × 490 000
Figure S4. DRUV-Vis spectra of titania materials prepared by a two-step microwave heating procedure with HAuCl₄ in a second step but without CD and without ethanol.
Figure S5. TGA profiles for the RAME-β-CD and the HP-β-CD
Figure S6. Evolution of methyl orange concentration under irradiation ($\lambda=365$ nm) as a function of time in the absence (open circle) or presence of the bare TiO$_2$ prepared by microwave process (filled circle). Reaction conditions: TiO$_2$, $m = 10$ mg; methyl orange solution, $V = 4$ mL (50 ppm)
Figure S7. Performance of TiO$_2$@Au-RB in three consecutive tests with reuse of the catalyst. Reaction conditions: 4 mL of a solution of methyl orange (50 ppm), 10mg of TiO$_2$@Au-RB ($\lambda=365$ nm, $t=10$ min):
Figure S8. Production of hydrogen by photoreduction of water (80mL) in the presence of TiO$_2$@Au-RB (100 mg) and ethanol (20mL) as sacrificial agent ($\lambda$=365 nm):