

Supplementary information

Selective oxidation of alcohols in aqueous suspensions of rhodium ion-modified TiO₂ photocatalyst under irradiation of visible light

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Sample preparation and photocatalytic reaction

TiO₂ photocatalysts modified with copper(II) and iron(III) (Cu²⁺/TiO₂ and Fe³⁺/TiO₂) were prepared to compare with the Rh³⁺/TiO₂ photocatalyst. The preparation and evaluation of samples were performed by the same procedures in the main text. TiO₂ powder (F-6, Showa Titanium) was added to aqueous solutions of copper(II) chloride and iron(III) chloride, the charged amount of which corresponded to 0.5 wt% of metal ions, and stirred and heated in a water bath at *ca.* 90°C. The suspensions were filtered and the filtrate was washed repeatedly with distilled water and then the filtrate was dried *in vacuo* for 1 h.

Table S1 Results of the selective oxidation of benzyl alcohol to benzaldehyde under irradiation of visible light for 20 h

Entry	Sample	Conv. /%	Sel. /%
1	Cu ²⁺ /F-6	9.1	18
2	Fe ³⁺ /F-6	11	38