Electronic Supplementary Information

Well-dispersed Au co-catalyst deposited on rutile TiO_2 photocatalyst via electron traps

Tomoki Akiyama, Haruki Nagakawa, and Tetsu Tatsuma

Institute of Industrial Science, The University of Tokyo, Tokyo 153-8505, Japan.
E-mail: tatsuma@iis.u-tokyo.ac.jp

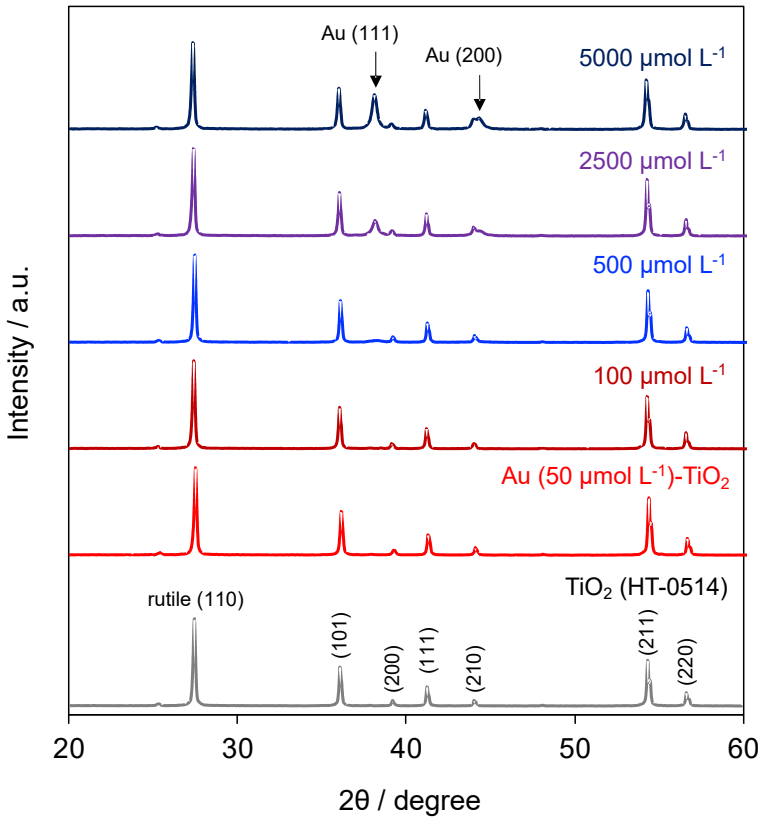

Fig. S1. XRD patterns of rutile TiO_2 particles (HT-0514) and those with Au deposited by the PD method at different $[AuCl_4]^-$ concentrations. The diffraction peaks correspond to rutile phase TiO_2 (JCPDS pdf No. 75-1537) and Au (JCPDS pdf No. 04-0784) are indicated.

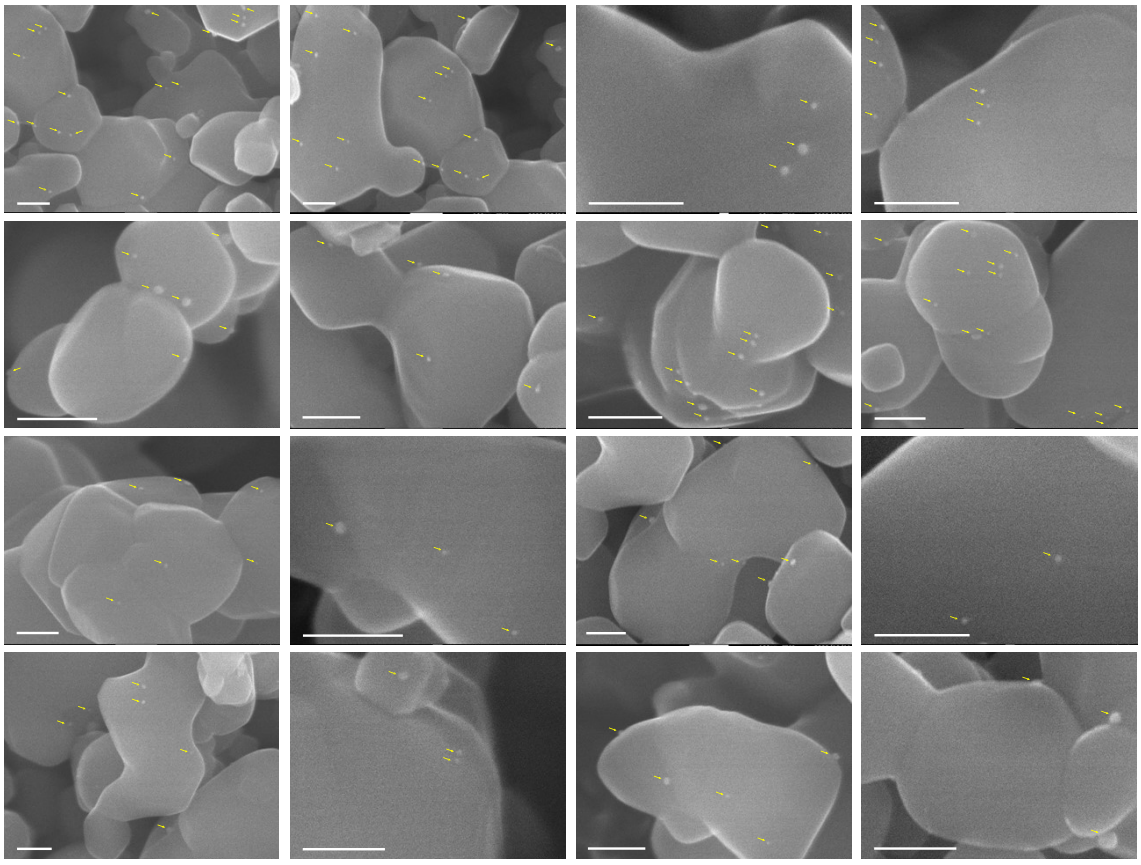

Fig. S2. SEM images of Au-TiO_2 sample prepared by the ETD method at 50 μmol L^{-1} $[AuCl_4]^-$. The Au nanoparticles counted for the size histogram in Fig. 3d are indicated with the yellow arrows. Scale bars indicate 100 nm.

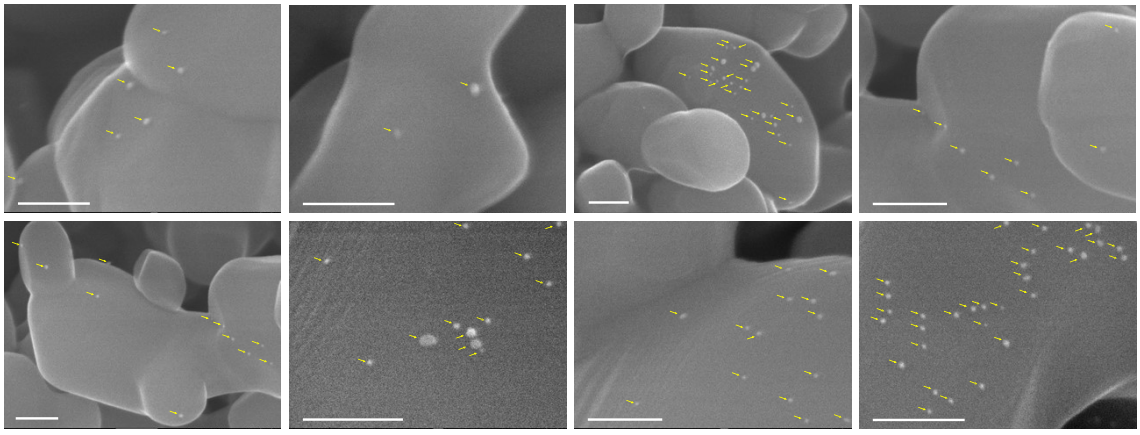

Fig. S3. SEM images of Au-TiO_2 sample prepared by the PD method at 50 μmol L^{-1} $[AuCl_4]^-$. The Au nanoparticles counted for the size histogram in Fig. 3e are indicated with the yellow arrows. Scale bars indicate 100 nm.

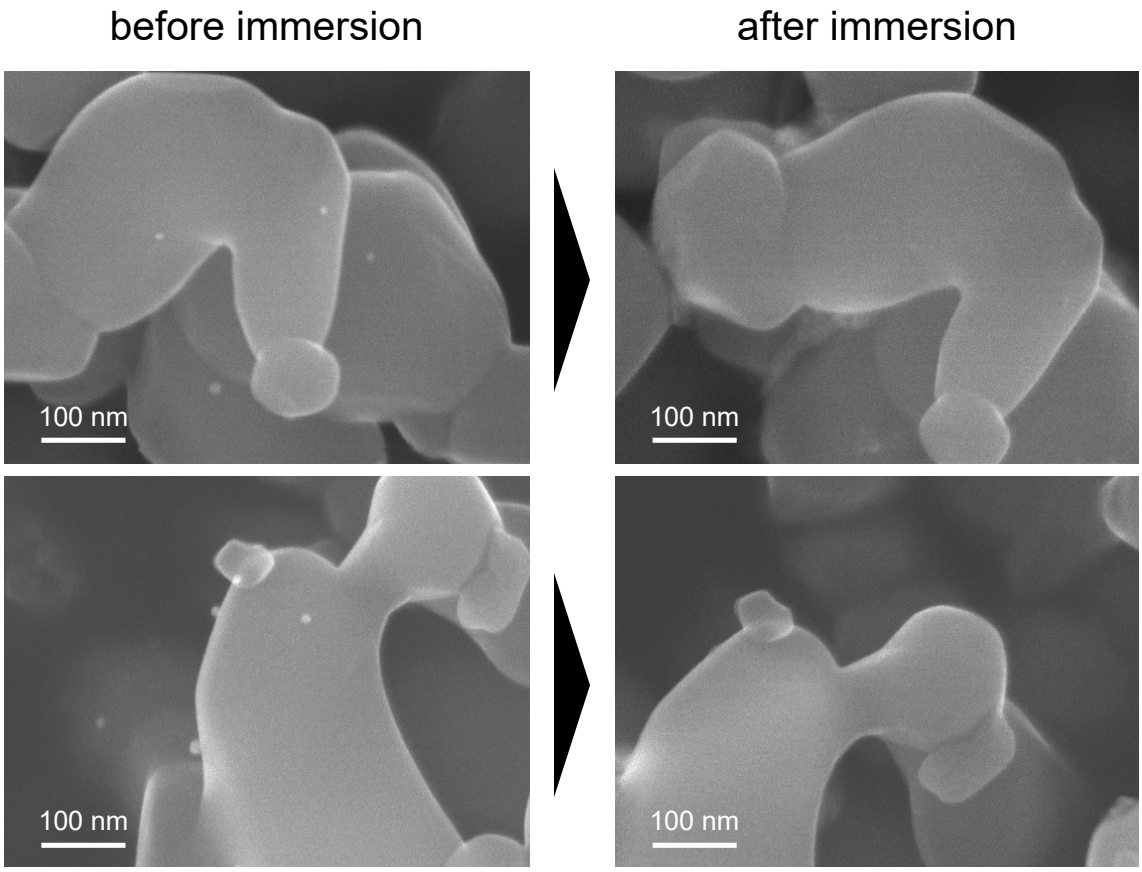

Fig. S4. SEM images of Au-TiO_2 sample on an adhesive carbon tape before and after immersion for 10 min in a solution containing I_2 and KI, in which Au is soluble. The sample was prepared by the ETD method at 50 μmol L^{-1} $[AuCl_4]^-$.

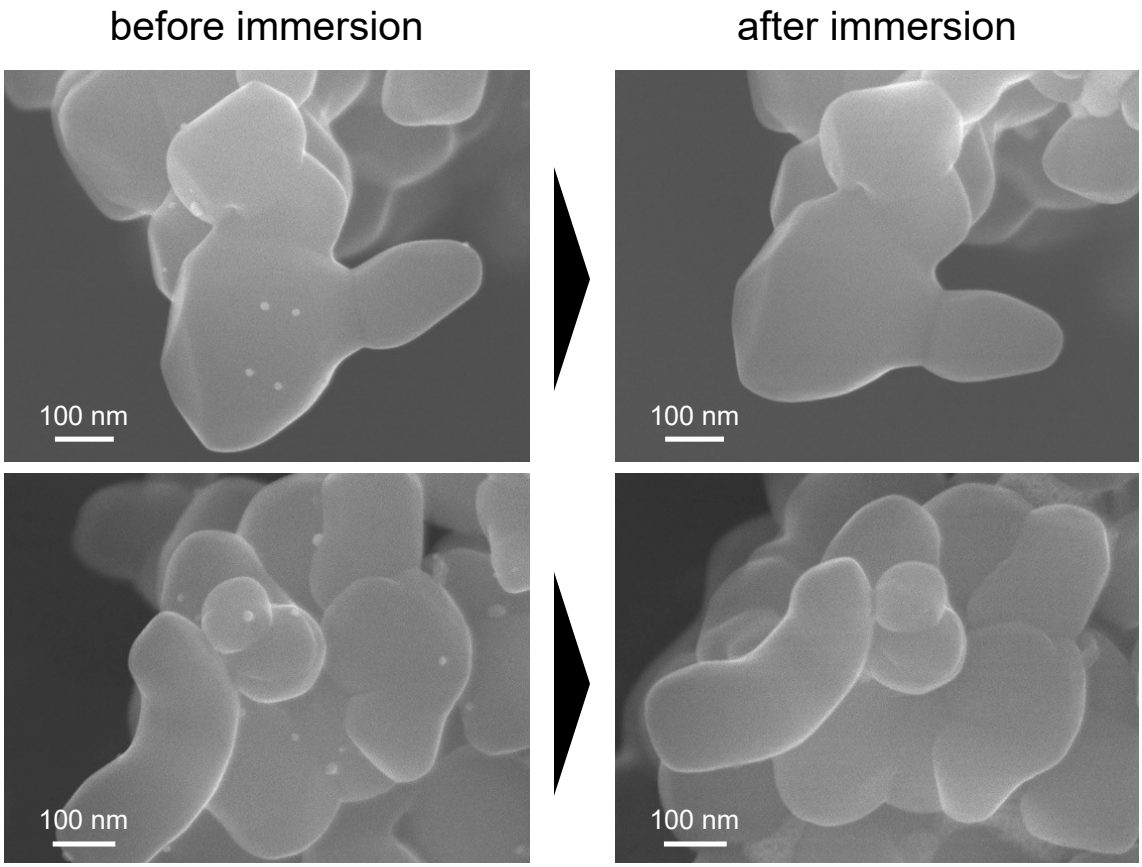

Fig. S5. SEM images of Au-TiO_2 sample on an adhesive carbon tape before and after immersion for 10 min in a solution containing I_2 and KI, in which Au is soluble. The sample was prepared by the PD method at 50 μmol L^{-1} $[AuCl_4]^-$.