

[Supporting Information]

The effects of Au nanoparticles size (5-60 nm) and shape (sphere, rod, cube) over electronic states and photocatalytic activities of TiO₂ studied by far- and deep-ultraviolet spectroscopy

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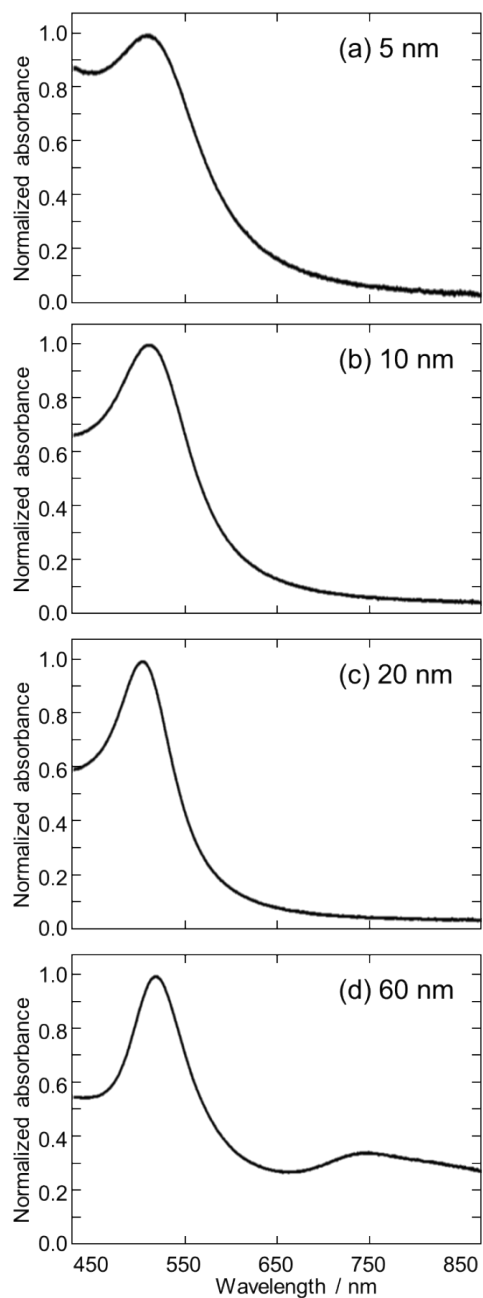


Figure S1. Normalized absorption spectra of (a) 5 nm-Au (b) 10 nm-Au, (c) 40-nm Au, and (d) 60 nm-Au colloids.

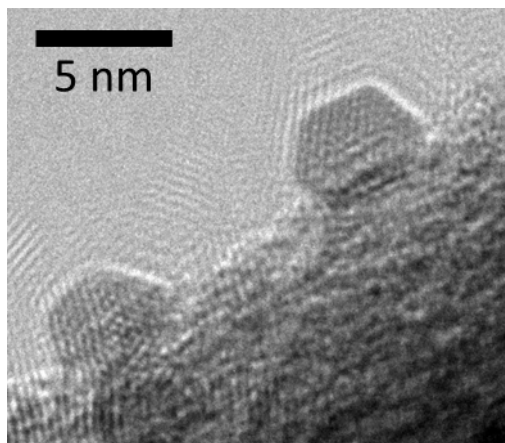


Figure S2. A typical HRTEM image of the Au nanosphere (5 nm) on TiO₂. This image was measured on a Tecnai G2 transmission electron microscope operating at 200 kV.

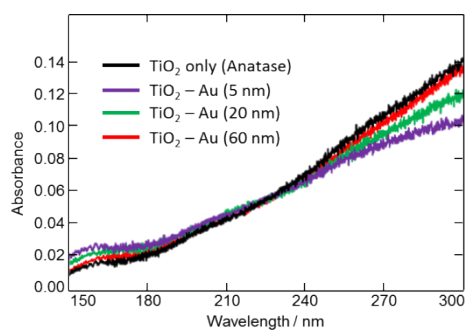


Figure S3. ATR spectra of anatase TiO₂ with or without Au nanospheres (5, 20, and 60 nm). The amounts of Au nanospheres are regulated to the almost same weight ($\sim 1.3 \times 10^{-4}$ g on 1 g TiO₂).

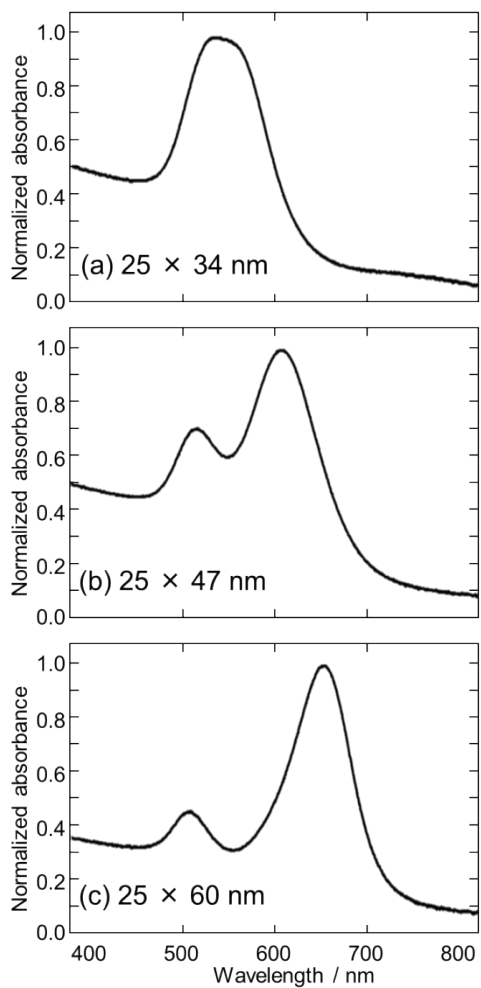


Figure S4. Normalized absorption spectra of Au nanorods. Sizes of Au nanorods are 25 nm × (a) 34 nm, (b) 47 nm, and (c) 60 nm, respectively.

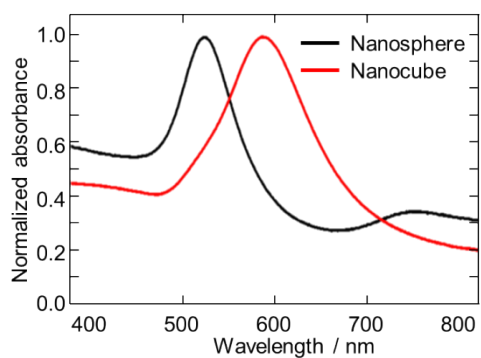


Figure S5. Normalized absorption spectra of Au nanospheres (black) and Au nanocubes (red).

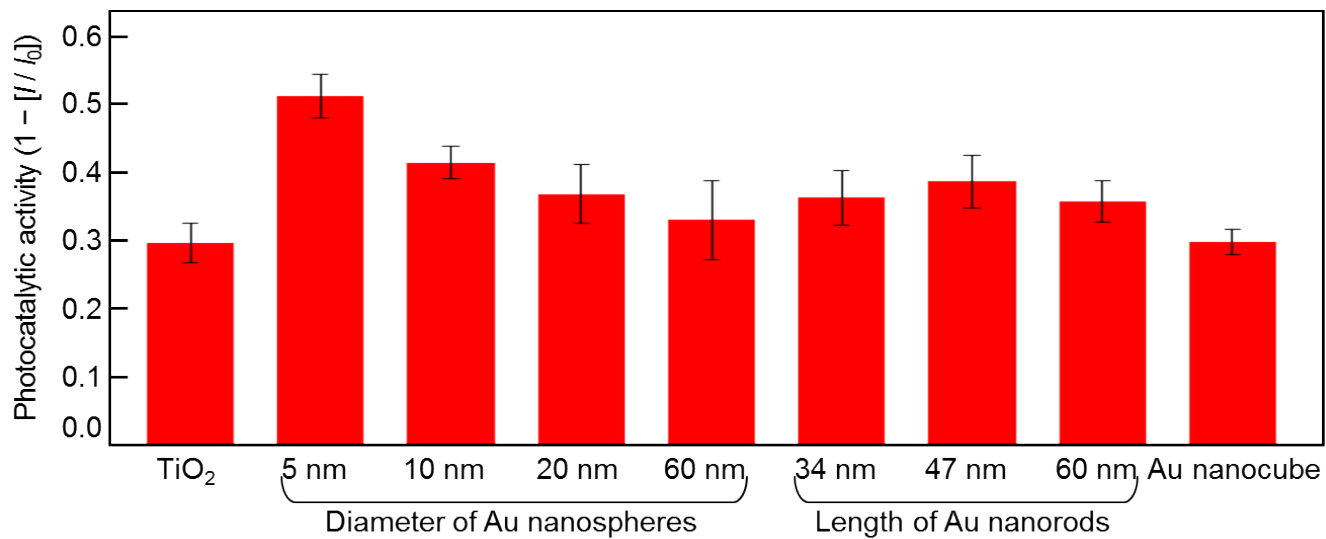


Figure S6. Photocatalytic activities ($1 - [I/I_0]$) of (a) anatase TiO₂ with and without Au nanoparticles.