

# Bi-overlayer Type Plasmonic Photocatalyst Consisting of Mesoporous Au/TiO<sub>2</sub> and CuO/SnO<sub>2</sub> Films Separately Coated on FTO

Shin-ichi Naya,<sup>a</sup> Takahiro Kume,<sup>b</sup> Nozomi Okumura<sup>b</sup> and Hiroaki Tada\*<sup>a,b</sup>

<sup>a</sup> Environmental Research Laboratory, Kinki University, 3-4-1, Kowakae, Higashi-Osaka, Osaka 577-8502, Japan

<sup>b</sup> Department of Applied Chemistry, School of Science and Engineering, Kinki University, 3-4-1, Kowakae, Higashi-Osaka, Osaka 577-8502, Japan

\* To whom correspondence should be addressed: TEL: +81-6-6721-2332, FAX: +81-6-6727-2024,

E-mail: [h-tada@apch.kindai.ac.jp](mailto:h-tada@apch.kindai.ac.jp).

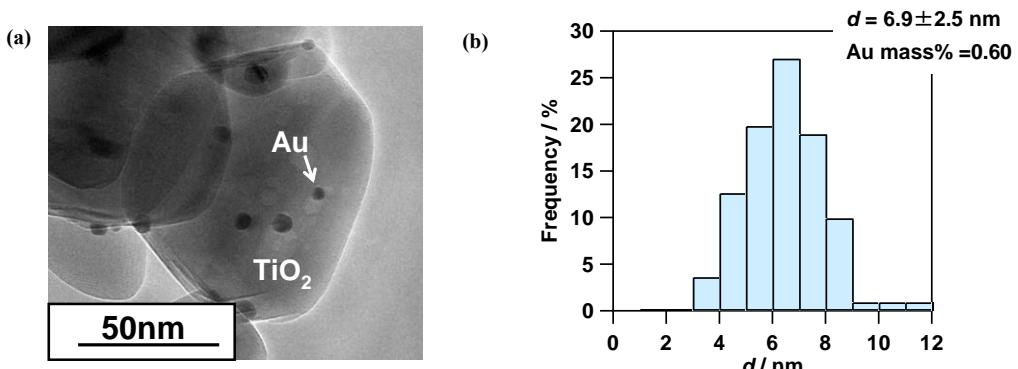


Fig. S1. (a) TEM image of as-prepared Au/TiO<sub>2</sub> particle. (b) Au particle size distribution.

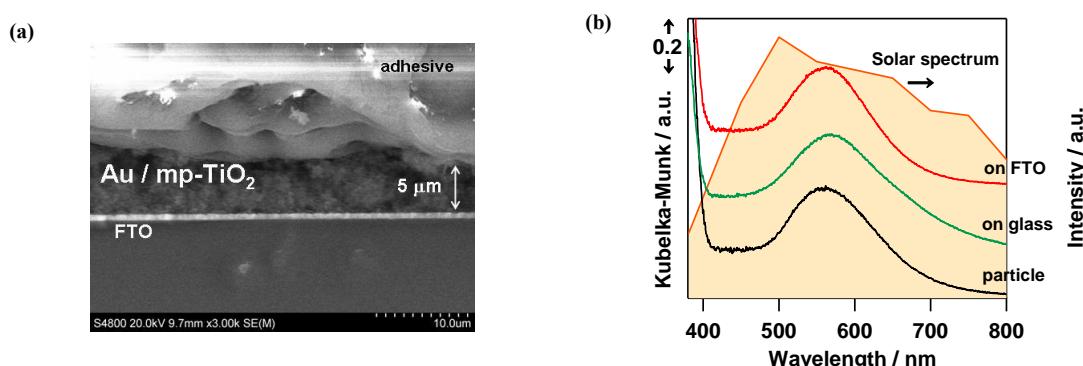
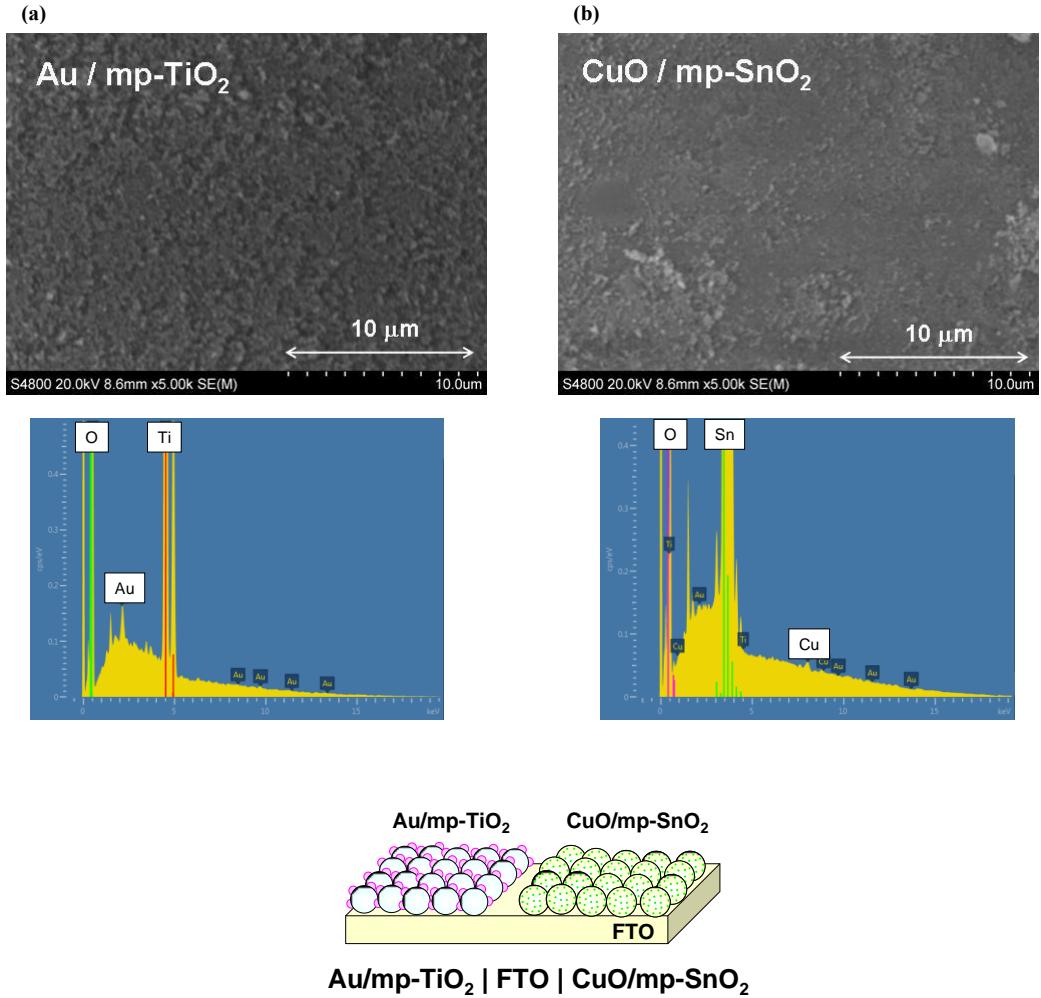


Fig. S2. (a) Cross-sectional SEM image of Au/mp-TiO<sub>2</sub>. (b) UV-Vis absorption spectra of Au/TiO<sub>2</sub> particle (black) and Au/mp-TiO<sub>2</sub> films on FTO (red) and glass (green).



**Fig. S3.** Top-down SEM images and EDX spectra of bi-overlayer type plasmonic photocatalysts: (a) Au/mp-TiO<sub>2</sub> region, (b) CuO/mp-SnO<sub>2</sub> region.