

Dependence of Activity of Rutile Titanium (IV) Oxide Powder for Photocatalytic Overall Water Splitting on Structural Properties

Kazuhiko Maeda,^{,1,2} Naoya Murakami,³ Teruhisa Ohno^{2,3}*

¹ Department of Chemistry, Graduate School of Science and Engineering, Tokyo Institute of Technology, 2-12-1-NE-2 Ookayama, Meguro-ku, Tokyo 152-8550, Japan. ² Precursory Research for Embryonic Science and Technology (PRESTO), Japan Science and Technology Agency (JST), 4-1-8 Honcho Kawaguchi, Saitama 332-0012, Japan. ³ Department of Applied Chemistry, Faculty of Engineering, Kyushu Institute of Technology, 1-1 Sensuicho, Tobata, Kitakyushu 804-8550, Japan.

*To whom corresponding author should be addressed.

TEL: +81-3-5734-2239, FAX: +81-3-5734-2284

Email: maedak@chem.titech.ac.jp

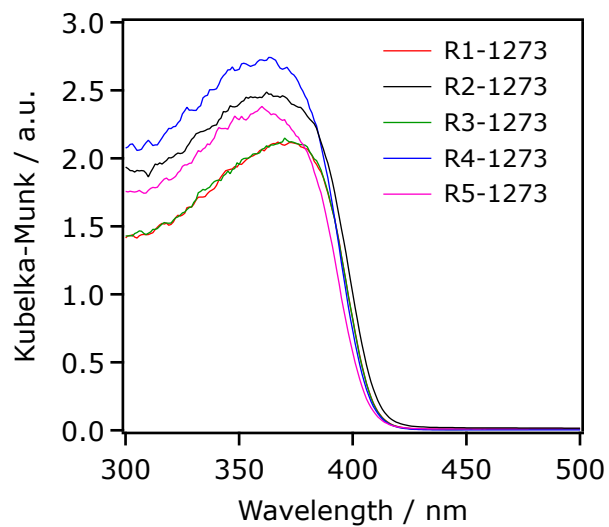


Figure S1. DRS of rutile TiO_2 samples calcined at 1273 K.

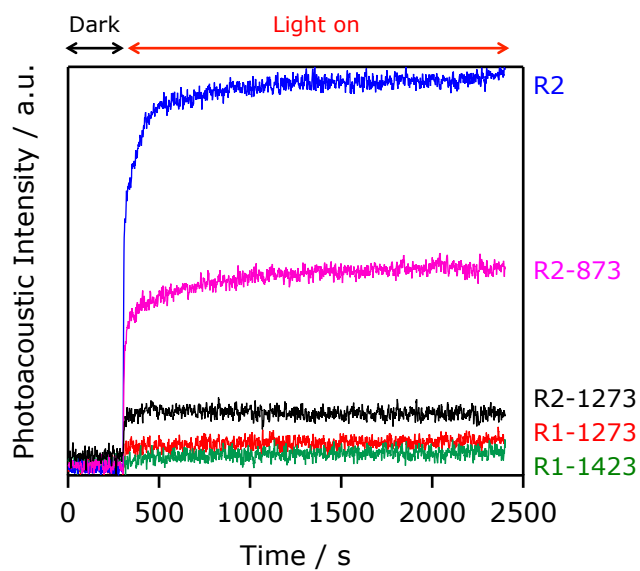


Figure S2. Time courses of PAS signals of prepared rutile TiO_2 samples under UV irradiation ($\lambda = 365$ nm) in the presence of nitrogen and ethanol vapor.

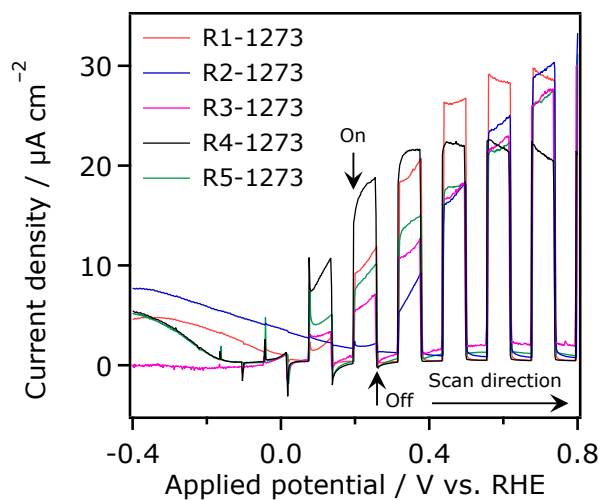


Figure S3. Current–voltage curves obtained with rutile TiO₂ electrodes (5.25 cm²) in aqueous 0.1 M Na₂SO₄ solution (pH = 5.9) under intermittent UV irradiation ($\lambda > 350$ nm). Scan rate: 20 mV s⁻¹.