

TATSUMA LAB.

[Electrochemistry and Nanoparticle Plasmonics]

Department of Materials and Environmental Science

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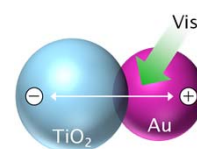
Advanced Electrochemical Devices

School of Engineering

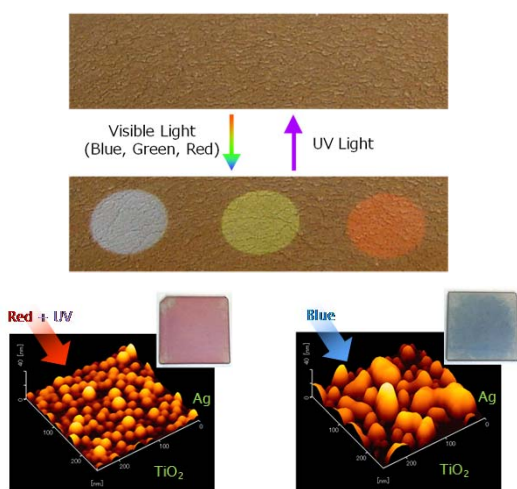
Department of Applied Chemistry

Nanoparticle Photochemistry

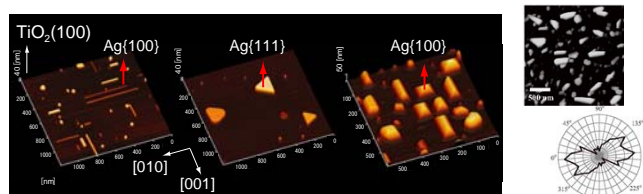
We found that plasmon-induced charge separation is possible at the metal nanoparticle-metal oxide interface. We have applied this phenomenon to multicolor photochromism, photovoltaic systems, photocatalysis, chemical and biosensing, and photoactuation of polymer gels.



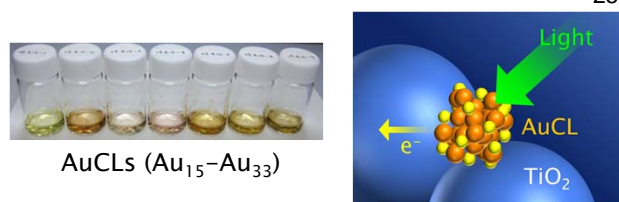
- ◆ Multicolor photochromism of silver nanoparticles deposited on TiO₂.



- ◆ Oriented silver nanoparticles.

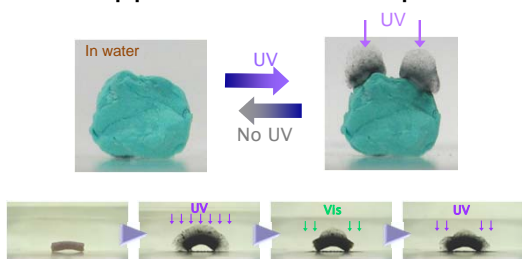


- ◆ Photovoltaics and photocatalysis of TiO₂ loaded with metal clusters such as Au₂₅.

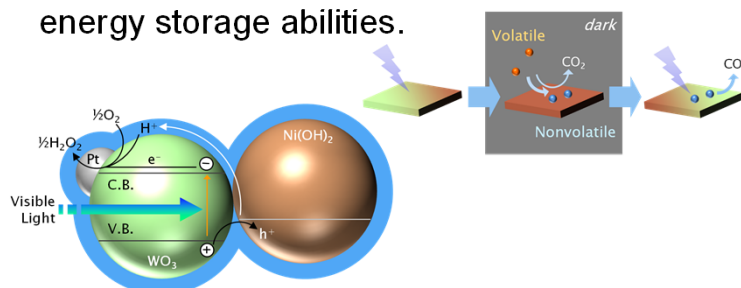


- ◆ Photovoltaics and photocatalysis of gold nanoparticles deposited on TiO₂.

- ◆ Photoactuation of polymer gels loaded with copper or silver nanoparticles.



- ◆ Visible light-driven photocatalysts with energy storage abilities.



- ◆ Infrared photochromism of pyramidal silver nanorods.