

Abstract Submitted
for the GEC16 Meeting of
The American Physical Society

Generation of composite Au/TiO₂ nanoparticles by pulsed laser ablation in aqueous media SHOTA KAWAI, MARDIANSYAH MARDIS, NORIHARU TAKADA, WAHYU DIONO, HIDEKI KANDA, MOTONOBU GOTO, Nagoya Univ, GOTO LAB. TEAM — Composite nanoparticles have been known for their potential applications in photocatalysis, medical and optical limiters. In particular, Au/TiO₂ composite nanoparticles have attracted attention because of its remarkable properties. However, commonly Au/TiO₂ composite nanoparticles are synthesized by chemical method using toxic precursor and reducing agents, and problems by their residue arised. Here, we examined a new synthesis method of composite nanoparticles by pulsed laser ablation (PLA) without any chemical agents, but only with distilled water. Au/TiO₂ composite nanoparticles were obtained by PLA of Ti plate covered with Au and TiO₂ nanoparticles, which were preliminarily synthesized by PLA in distilled water. The synthesized nanoparticles were characterized by using TEM, UV-vis absorption spectroscopy, dynamic light scattering and XRD. The TEM images showed that composite nanoparticles including Au-TiO₂ core-shell nanoparticles were successfully generated with diameter around 100 nm.

Kawai Shota
Nagoya Univ

Date submitted: 09 Jun 2016

Electronic form version 1.4