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ASIA EDITION

TANAKA develops gold shell nanoparticles using high dispersion stability

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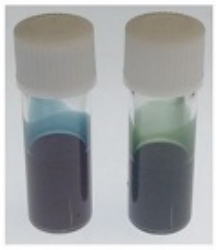
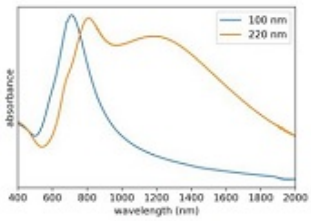
The product exhibits strong surface plasmon resonance and is in use in optical devices



<Gold shell nanoparticle dispersion liquid
(left: 100 nm; right: 220 nm)>



<Light absorption spectrum of
gold shell nanoparticle dispersion liquid>

TANAKA Kikinzoku Kogyo KK which operates the TANAKA precious metals manufacturing business announced that TANAKA has developed gold shell nanoparticles that can be prepared in high concentrations using high dispersion stability.

The product is designed to cover the particle surface—such as that of silica—with an extremely thin gold shell that has a thickness of approximately 10 nm. It exhibits strong surface plasmon resonance. Additionally, by using the high dispersion stability in water and polar solvents, it is possible to prepare dispersion liquids with high concentrations that are 100 to 1,000 times that of gold nanoparticles currently being sold on the market.

The overall size of gold shell nanoparticles can be controlled within a range of 80 nm to 250 nm, allowing them to be given a wide variety of optical characteristics. This is especially true for colloids with particle diameters several hundred nm prepared in high concentrations. They are easier to integrate or structure three-dimensionally, such as into colloid crystals, and can be expected to be applied to various optical materials.