
TANAKA Develops Gold Shell Nanoparticles That Can Be Prepared in High Concentrations Using High Dispersion Stability

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Achieving dispersion liquids with high concentrations that are 100 to 1,000 times that of existing products with expected applications in optical devices such as optical displays, optical sensing, and biosensors.

TANAKA Kikinzoku Kogyo K.K. (Head office: Chiyoda-ku, Tokyo; Representative Director & CEO: Koichiro Tanaka), which operates the [TANAKA Precious Metals](#) manufacturing business, announced that TANAKA has developed gold shell nanoparticles¹ that can be prepared in high concentrations using high dispersion stability.

This 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 resonance². 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.

Read the [original article](#) on TANAKA Precious Metals.