

Particle Size Analyzer Application Topics

Single Nano Particle Size Analyzer IG-1000

No. 4

Example of Measurement of Single Nanoparticles

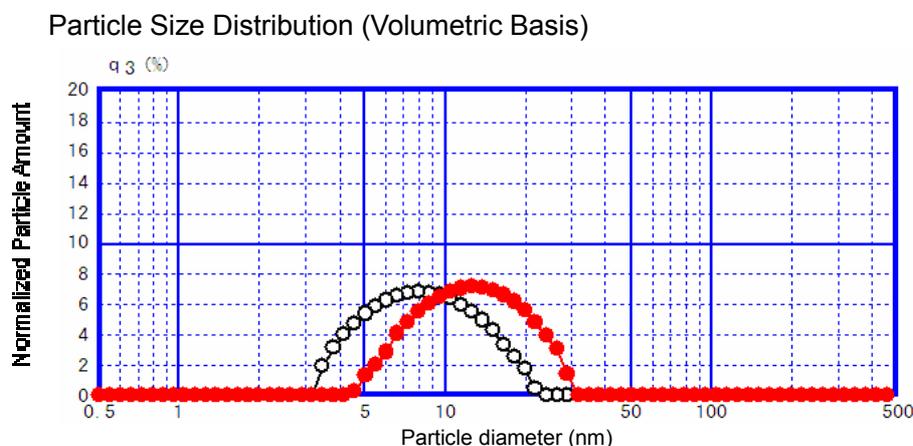
The completely new Single Nano Particle Size Analyzer IG-1000 uses a new particle size measurement technology "Induced Grating (IG) Method."

Particular features of the IG-1000 are its wide measurement range of 0.5 nm to 200 nm and high reproducibility in the single nano region.

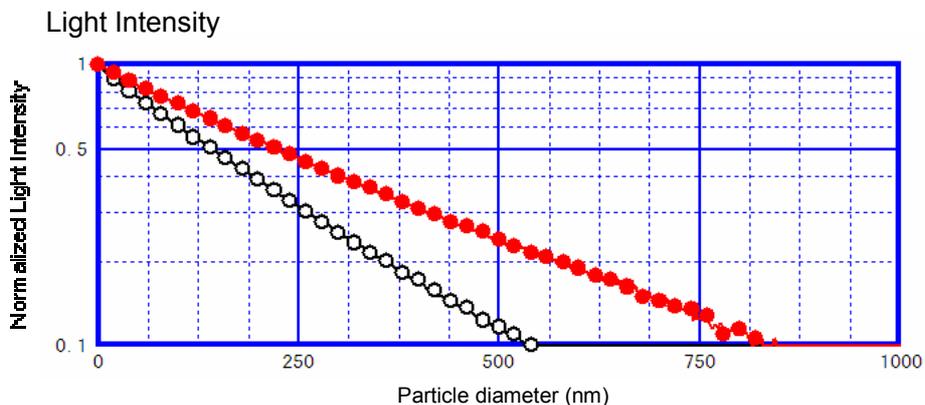
On the IG-1000, we measured two types of silica particles (label size 5 nm, 8 nm) having different particle sizes both containing single nanoparticles and fullerene hydroxide particles.

Graphs 1 and 2 respectively show the measurement results of the particle size distribution of silica particles and the intensity data of the diffracted light, the raw data.

We found a distinctly apparent difference in the particle sizes of the two types of silica particles containing single nanoparticles. This difference between samples was clearly manifested also in the intensity data of the diffracted light, the raw data. (The higher the incline of the graph, the smaller the particle size becomes.)



Graph 1. Measurement Results of Two Types of Silica Particles

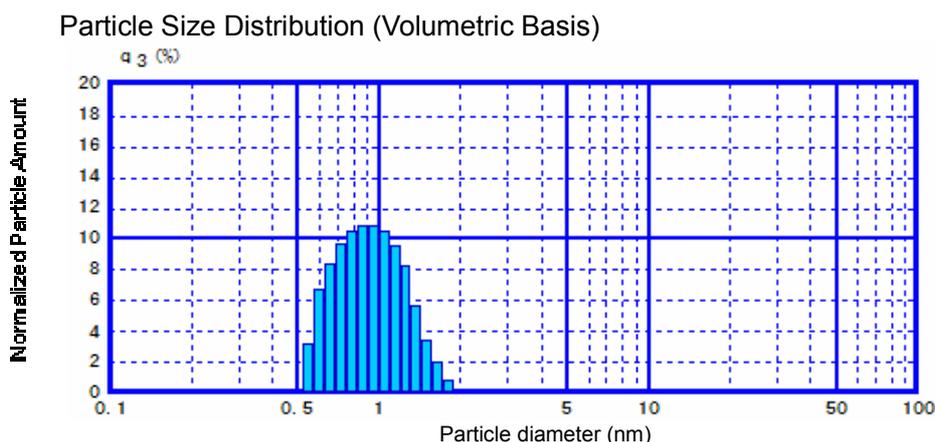


Graph 2. Comparison of Attenuation in Intensities of Diffracted Light Between Two Types of Silica Particles

* Valuation of label size conforms to the specific surface area method.

Next, Graph 3 shows the measurement results of the particle size distribution of fullerene hydroxide particles.

We were able to obtain data close to the diameter (approx. 1 nm) of fullerene hydroxide.



Graph 3. Measurement Results of Fullerene Hydroxide Particles

* Sample provided by Dr. Ken Kokubo of Osaka University, Japan

NOTES:

* This Application News has been produced and edited using information that was available when the data was acquired for each article. This Application News is subject to revision without prior notice.



SHIMADZU CORPORATION. International Marketing Division

3. Kanda-Nishikicho 1-chome, Chiyoda-ku, Tokyo 101-8448, Japan Phone: 81(3)3219-5641 Fax: 81(3)3219-5710

Cable Add.:SHIMADZU TOKYO