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Spheryx

Spotlight

January 15th, 2026

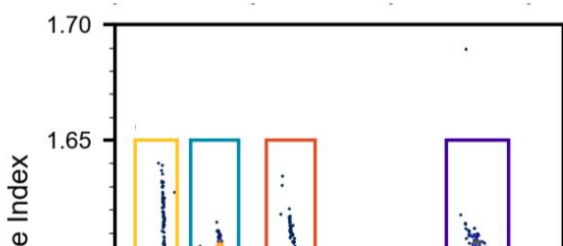
Edition 4

In this edition of Spheryx Spotlight:

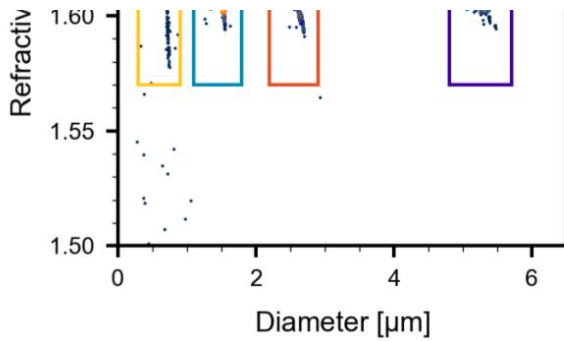
- > **xSight Determines Particle Size and Composition**
- > **Science at the frontiers with xSight**
- > **Upcoming Conferences (WCBP, IFPAC, GRC)**

xSight Determines Particle Size and Composition

xSight measures the holograms of particles which encode particle size. Below is a plot of 4 different standard polystyrene beads. The size of each bead type is determined by xSight from the particle holograms. Each particle is counted and the total particles of each type is divided by the volume to give precise concentrations for each particle type in a single measurement. Note that all four particle populations appear at the refractive index of polystyrene ($n = 1.61$).



- Accurate sizes and concentrations for 4 sizes of polystyrene beads simultaneously
- Setting the industry standard sensitivity from 500 nm - 10 μm
- Regions of interest determined by



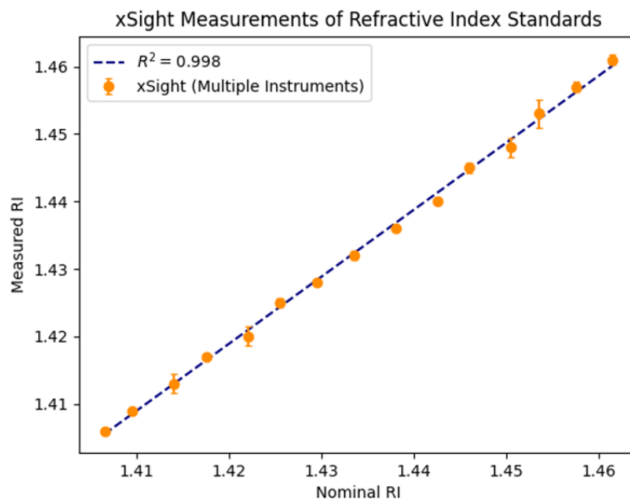
the user for individual component analysis

Statistics

Particle Size	0.71 µm	1.54 µm	2.58 µm	5.31 µm
Size (µm)	0.72	1.53	2.62	5.26
particles/mL	1.3×10^5	1.6×10^5	1.3×10^5	1.2×10^5

xSight uses the refractive index of each particle to determine its composition. Holograms encode the particle's refractive index. xSight analyzes holograms using Lorenz-Mie Theory to extract the refractive index from the hologram. In the figure below are the results from measurements of refractive index standards in a plot of measured refractive index versus nominal refractive index. The r^2 value of 0.998 shows how xSight delivers extremely accurate refractive indexes critical for the determination of particle composition.

Accurate Measurement of Refractive Index



- Cargill refractive index standards
- Accuracy of 0.002
- $R^2 = 0.998$
- Instrument independent
- User independent

Science at the frontiers with xSight

Congratulations to our customers on their publications detailing their groundbreaking work in the fields of protein condensates, medical diagnostics (Langmuir), and immunoassays (Biomedical Optics Express). Below are the highlights of three recent

publications in press from some of our customers.

xSight casts new light on biomolecular condensates:

Biomolecular condensates are high-concentration blobs that broadly resemble the water droplets in steam. They act as membraneless organelles within biological cells and show tremendous commercial promise as self-assembled biochemical reactors. The Saurabh team at NYU has used xSight to unravel how an especially important class of condensates form from solution and how that process determines the condensates' internal structure and overall properties. **These insights help to answer fundamental questions about condensates' role in biological settings and provide much-needed feedback for designing commercial applications.**

***Reference:** [Cheong FC, Lee SY, Bais S, Khanal S, Saurabh S. Holographic fingerprinting reveals oligomer-driven phase separation in Bovine Serum Albumin. bioRxiv. 2025 Dec 13:2025-12.](#)*

Splitting hairs with xSight:

The Grier group at New York University is using **xSight to develop label-free bead-based molecular binding assays for high-speed, cost-effective medical diagnostics.** In their latest cover article in *Langmuir*, they show that xSight's nanometer precision for particle diameter not only detects target molecules bound to the surface of probe beads, but even measures how closely they are packed on the surface. Achieving this high sensitivity is possible because of xSight's excellent run-to-run reproducibility, which the article examines in detail.

***Reference:** [Snyder K, Hollingsworth AD, Cheong FC, Quddus Q and Grier DG. Simultaneous holographic molecular binding assays with internal calibration standards, Langmuir, in press \(2026\).](#)*

A new class of holographic immunoassays powered by xSight:

xSight excels at detecting and characterizing disordered protein aggregates. A collaboration between New York University and the University of Fribourg, Switzerland, has used this **capability to develop a label-free assay for immunoglobulin A (IgA), a protein that plays a critical role in the human immune system.** Rather than relying on functionalized beads to immobilize the target protein for detection, the new assay uses another protein called jacalin to bind IgA molecules into fractal clusters. **xSight directly detects the clusters and provides enough information about their number, size and structure to infer the concentration of IgA across the clinically relevant range.** This precise and remarkably straightforward test can be generalized to other target proteins, as the group's publication *Biomedical Optics Express* explains.

***Reference:** [Quddus R, Kirshenbaum K and Grier DG, A Quantitative Holographic](#)*

Spheryx at Conferences

Spheryx has three upcoming conferences during the winter. We will have a booth at WCBP 2026 from January 27th to 29th, as well as at IFPAC 2026 from March 1st to March 4th. Spheryx CEO Laura Philips will also be attending the Gordon Research Conference on Biotherapeutics and Vaccines Development from March 8th to March 13th.

Upcoming Appearances:



**WCBP 2026,
January 27th - 29th
The Mayflower Hotel,
Washington D.C.**



**IFPAC 2026,
March 1st - 4th
Bethesda North Marriott,
North Bethesda, MD**



**Gordon Research Conference,
March 8th - 13th
Four Points Sheraton,
Ventura, CA**

Spheryx CEO Laura Philips will also be a speaker at an upcoming BioPharma Webinar, presented by Desmond G Hunt, Senior Principal Scientist at US Pharmacopeia. The webinar, titled “Addressing Subvisible Silicone Oil Droplets-Industry Challenges, Analytical Strategies, and USP’s Rationale for a New General Informational Chapter”, will discuss the industry context of subvisible silicone oil droplets (SiOPs) across evolving delivery systems, including prefilled syringes and autoinjectors, and various administration routes except intravitreal use. The webinar will take place on March 4th at 10AM EST, and will be followed by a Question and Answer session. If you would like to learn more about the webinar or would like to reserve your spot, click the image below.

Addressing Subvisible Silicone Oil Droplets-Industry Challenges, Analytical Strategies, and USP's Rationale for a New General Informational Chapter

followed by a live Question and Answer Session



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Tyler Carter, PhD
Senior Application Scientist
Yokogawa Fluid Imaging Technologies Inc

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About Spheryx, Inc.

Spheryx, Inc. is a privately held analytical services and instruments company providing Total Holographic Characterization® of colloidal materials. Spheryx's proprietary technology uses holographic video microscopy to characterize each particle in colloidal dispersions and multi-component colloidal mixtures, offering unprecedented insights into these materials' characteristics. Applications include R&D, quality assurance and

manufacturing process control across a broad spectrum of industries, where characterization of colloids can enhance innovation, improve safety and reduce costs. For more information: <https://www.spheryx.solutions/>

Note: This news release contains forward-looking statements regarding future events. These statements are just predictions and are subject to risks and uncertainties that could cause the actual events or result to differ materially.

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