

PHOTONICS spectra

WEBINARS

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Paving the Way Toward Ultrahigh-Speed and High-Resolution 3D Optical Measurements

Thursday, October 15, 2020 1:00 PM - 2:00 PM EDT

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.: About This Webinar

This webinar will discuss the concept of liquid lenses, which involves controlling the shape of a liquid to alter the properties of a lens, and how liquid lens technologies can provide fast and accurate measurements for 3D inspection.

The human eye uses this concept as it focuses on objects near and far. The ciliary body of the human eye contains a muscle that changes the shape of the lens to alter the eye's focusing ability and enables a person to focus on objects at varying distances. Scientists and engineers have applied this capability to liquid lenses and have commercialized the technology so they can be incorporated into microscopes, metrology systems, cellphone cameras, diagnostic equipment, and more.

The ability to control the focal length of a lens at ultrahigh speeds is extremely valuable for numerous scientific, industrial, and commercial applications demanding fast modulation and control over the focus of the lens system for high-speed measurements. For example, in noncontact inspection systems, the traditional approach requires mechanically moving the lens assembly or the sample to enable 3D measurements of the part. This is often one of the bottlenecks for the speed affecting the overall throughput of inspection.

In contrast, measurement systems using the power of liquid lens technologies provide the advantage of fast measurements without any mechanically moving parts, paving the way toward high-speed, noncontact 3D inspection for the semiconductor, automotive, aerospace, medical, scientific, and other industries.

Who should attend:

Researchers, engineers, and others whose work involves optical components, especially lenses for 3D metrology in scientific, industrial, and commercial applications. Anyone looking to improve their knowledge of liquid lens technology and its applications in optical measurements. As well, all those involved in the buying or selling of liquid lenses who are interested in learning about relevant developments in the technology.

About the presenter:

Casey Emtman works with Mitutoyo Corp.'s Custom Solutions Group in Japan to develop custom metrology solutions for manufacturers across North America and Europe. Additionally, he is director of operations for Mitutoyo Optics Manufacturing, America Corp. He has over 20 years of metrology R&D and project management experience, through which he has built broad knowledge of noncontact metrology technologies. Emtman earned a Bachelor of Science degree in mechanical engineering from Washington State University and holds nearly 20 patents.



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