



*The remarkable technological progress in the inspection of high-precision optical surfaces under harsh environmental conditions enabled by instantaneous phase measuring technology.*

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Over the past twenty years interferometers utilizing instantaneous phase technology have enabled the measurement of large optical systems that previously were extremely difficult or impossible to measure. The vibration and large optical paths encountered when testing these optics make conventional interferometric systems virtually useless. Manufacturers of large terrestrial and space-based telescopes such as the James Webb Space Telescope and the Giant Magellan Telescope as well as earth imaging satellites have come to rely on interferometers with instantaneous phase technology for ensuring that their optical surfaces perform as designed. Today dynamic interferometers are deployed in high-technology manufacturing and inspection environments where measurement speed and/or portability can be paramount such as in semiconductor fabs and jet engine re-work facilities. This talk will review several of the different types of dynamic interferometers that have been developed and the challenging applications that they have been used for.

#### **SHORT BIO:**

Neal Brock is an accomplished photonics scientist, inventor, author, and entrepreneur. He co-founded 4D Vision Technology in 2000 and 4D Technology in 2002. Previously he held leadership and research and development roles with NASA-Ames Research Center and the commercial metrology companies: Aerometrics Inc., and Metrolaser Inc. He is also a veteran of the USMC and is a retired US Navy Reserve officer. He has published over 55 research papers and one book chapter covering subjects such as flow visualization, high-speed and dynamic interferometry, resonant holographic interferometry, 3D profilometry, and polarimetry. He has several patents awarded and pending. He is also one of the inventors of 4D Technology's core instantaneous phase technology.