Future Computing

J. Stephan
Project Manager & Research Coordinator
Fraunhofer, Berlin, Germany

Biography
Coming Soon

References

Next-Generation Optical Switching and AI Infrastructure



K. E. Aguilar
CEO
Omnitron Sensors, Orlando, United States of America

Abstract
The rapid growth of AI is creating new requirements for high-bandwidth, energy-efficient connectivity and placing increasing pressure on conventional electrical network architectures. Optical circuit switching offers a path toward more scalable infrastructure, but achieving the required optical performance, reliability, and manufacturability presents significant MEMS design and fabrication challenges.
Omnitron is addressing these challenges through a proprietary 3D MEMS fabrication platform and large-aperture mirror arrays with in-situ feedback control. The technology enables high-performance optical switching while supporting flatter network topologies, lower interconnect power consumption, and reduced infrastructure cost. This presentation will explore the MEMS innovations behind the platform and how advanced microfabrication can enable a new generation of optical switching systems for AI infrastructure.

Biography
Eric Aguilar is the CEO and co-founder of Omnitron Sensors, where he leads the development of next-generation MEMS technologies for AI infrastructure and autonomous systems. His career spans more than two decades in advanced sensing and semiconductor innovation, including leadership roles at Google X, where he led avionics development for autonomous delivery drones, and Tesla, where he led firmware and

sensor integration for Model 3. Earlier in his career, Eric developed advanced sensors for U.S. Navy research laboratories and defense programs before joining Lumedyne, whose technology was later acquired by Google. Today, he leads Omnitron’s commercialization of breakthrough MEMS technology designed to enable the next generation of optical networking for hyperscale AI data centers.

References