Wednesday, May 22, 2019

WEBINARS

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VCSELs and Their Role in the Evolution of Photonic Systems

Wednesday, June 5, 2019 1:00 PM - 2:00 PM EDT

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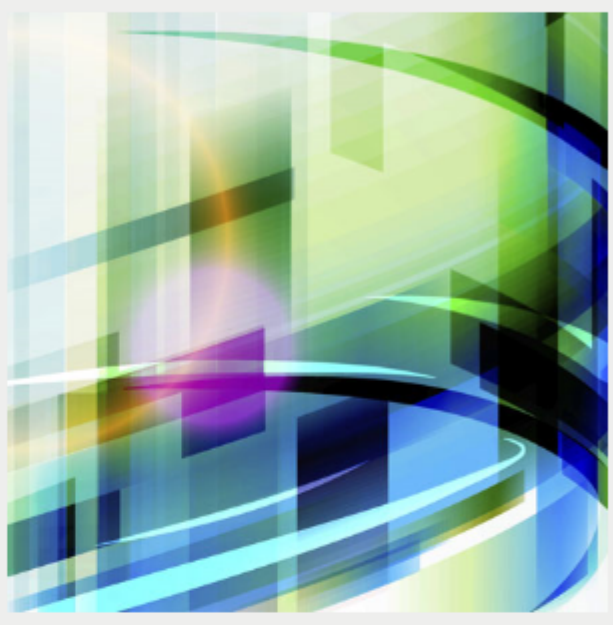
About This Webinar



Vertical-cavity surface-emitting lasers, or VCSELs, are today being used for a broad range of applications, including 3D sensing, lidar, automotive manufacturing, laser printing, biomedical diagnostics and devices, and smartphones, as well as in high-speed data communication. In this webinar, professor Axel Scherer, who with Jack Jewell created the first prototypes for VCSELs while Scherer was at Bellcore in the 1980s, will discuss his role in the development of these miniature lasers and how their use has evolved as the technology has progressed. Scherer will discuss VCSEL design, lasing characteristics, and the capabilities that make VCSELs well suited for use in today's photonic and optics applications, compared with other technologies such as LEDs. He will conclude with a look at the future role of VCSELs in several areas in which he is involved, including biomedical applications and integrated photonics.

About the presenter:
Axel Scherer, Ph.D., is the Bernard Neches Professor of Electrical Engineering, Applied Physics, and Physics at the California Institute of Technology (Caltech), as well as the director of the Caltech Global Health Initiative. His research focuses on the design and microfabrication of optical, magnetic, and fluidic devices. In the 1980s, Scherer pioneered the development of the first monolithic vertical cavity lasers (VCSELs) that are now widely used in data communications systems. More recently, Scherer's group developed electromagnetic design tools and fabrication techniques for the definition of lithographically integrated optical devices. This led to innovative work in photonic bandgap lasers, silicon photonic circuits, and tunable microfluidic dye lasers, and resulted in new classes of integrated optics.

Scherer also fabricated some of the first surface plasmon enhanced high brightness LEDs. His group miniaturized fluidic systems and demonstrated the first multilayer replication molded fluidic chips. He has co-founded several companies in the area of silicon photonics and biomedical diagnostics, and leads a group focused on the miniaturization and integration of fluidic, optical, electronic, and magnetic devices for applications in biotechnology.

Professor Scherer has co-authored over 300 publications and holds over 50 patents on the area of microfabrication and design of devices. He holds B.S., M.S., and Ph.D. degrees from New Mexico Institute of Mining and Technology.

Who should attend:
Engineers, researchers, students, educators, and those involved in optical and lighting design and fabrication for any industry that is or will be using miniaturized photonic and/or optoelectronic devices, including automotive, data communications, and consumer electronics. Anyone who is interested in the design, fabrication, and application of microlasers, and in potential future applications for microlasers in the areas of integrated photonics and biotechnology.

Mark Your Calendar

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