Thursday, January 03, 2019

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SiPM and SPAD: Emerging Applications for Single-Photon Detection

Thursday, January 17, 2019 2:00 PM - 3:00 PM EST

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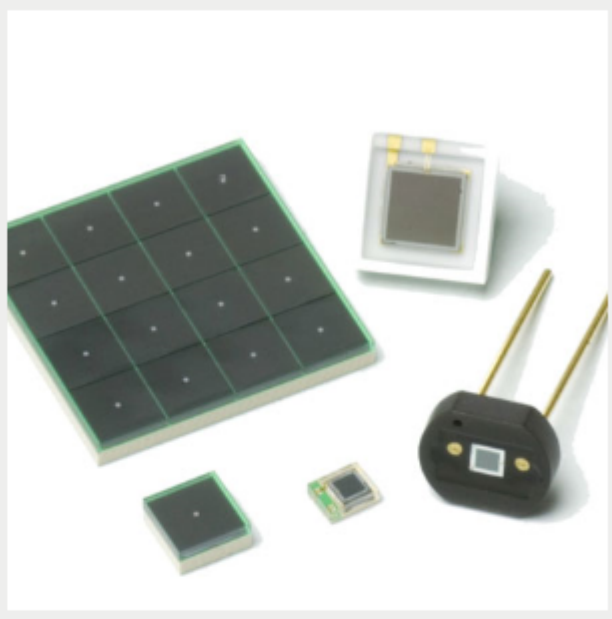
About This Webinar



This webinar will provide a thorough overview of silicon photomultipliers (SiPMs) and single-photon avalanche photodiodes (SPADs) for low-light level photodetection. You will gain a better understanding of this relatively new technology, so you can determine whether it is the right choice for you.

Compared to photomultiplier tubes (PMTs), SiPMs and SPADs are smaller, more durable, and more energy efficient. They also offer better immunity to magnetic fields and ambient light than PMTs.

The webinar will begin by discussing the principles of operation of a SPAD and SiPM. It will provide a brief comparison between these two photodetector technologies and a PMT. The webinar will continue with a discussion of the optoelectronic characteristics of modern SiPMs and SPADs. An understanding of these characteristics is essential to selecting the optimal photodetector.

At the core of any photodetection system is a photodetector together with the front-end electronics; thus, the webinar will review the most common detection electronic circuits. The remainder of the webinar will focus on applications where a SiPM or SPAD has either already replaced a PMT as the detector of choice or could do so in the future.

About the technology:
SPADs and SiPMs are related photodetector technologies and each is able to produce a measurable output current in response to a single photon. Only one other point photodetector - a PMT - is capable of such detection. The extraordinary light sensitivity of these three photodetectors is due to their very high (~106) intrinsic gain. Compared to a PMT, SiPM and SPAD are newer technologies, only now being adopted in those applications involving ultralow-light levels. Both SiPM and SPAD can offer a number of advantages over a PMT, without sacrificing performance.

Who should attend:
Engineers, researchers, and scientists in varied technical fields, but involved in low-light-level photodetection, will benefit from this webinar, which will provide a greater understanding of the uses and benefits of SiPMs and SPADs and guidance on which type of photodetector is best for a given application.

About the presenter:
Slawomir S. Piatek is a senior university lecturer of physics at New Jersey Institute of Technology. As a science consultant at Hamamatsu Corporation in N.J., he has developed a photonics training program for engineers. Also at Hamamatsu, he is involved in popularizing SiPM as a novel photodetector by writing and lecturing about this technology and by experimenting with the device. Piatek has a Ph.D. in physics from Rutgers, The State University of New Jersey.

About Hamamatsu Corporation:
Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of IR, VIS, and UV light. These devices include detectors such as photodiodes, silicon photomultipliers (SiPM), IR detectors, and photomultiplier tubes (PMT). In addition, Hamamatsu Corporation offers image sensors, cameras, light sources, and specialized systems. Hamamatsu products are used throughout the world in scientific, industrial, and commercial applications. For more information, visit www.hamamatsu.com.

Mark Your Calendar

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