

Q-CMOS: Image sensors with single photon capabilities

Friday 24 January 2025 11:15 (45 minutes)

Quantitative CMOS (qCMOS) is a cutting-edge image sensor capable of not only detecting single photons but also resolving their number, making it a powerful tool in advanced photonics. With exceptionally low read-out noise and high quantum efficiency, qCMOS has found broad range of applications, including a rapidly expanding role in quantum technologies such as quantum sensing and quantum computing.

This lecture begins by introducing key concepts and metrics fundamental to photon-number resolving detectors, with a focus on the unique capabilities of qCMOS. It then traces the historical development of photon-number resolving technologies and concludes with a discussion on quantum applications, highlighting how qCMOS serves as a critical asset in modern quantum systems.

Presenter: Dr DURDEVIC, Ljiljana (Hamamatsu)