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Superconducting Photon Detectors: Past, Present & Future

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***Abstract*—The ability to detect individual light quanta–single photons–is prized across many fields including astronomy, quantum optics, remote sensing and the life sciences. Superconducting photon detectors offer exceptional performance in terms of sensitivity, spectral range and timing resolution. In this presentation, I will consider the mechanisms of photon absorption in superconducting materials and device structures. I will then present detailed case studies of contemporary superconducting detector technologies for photon counting at visible and infrared wavelengths. I will conclude with a perspective on future development trends in this exciting area.**

***Keywords (Index Terms)*—Superconducting devices, superconducting electronics, superconducting detector, single-photon detector, SNSPD, SSPD**

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