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## Nuclear physics detection solution, from double beta decay to forest fires

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The search for neutrinoless double beta decay in liquid Xenon led to the development of a new generation of single photon detectors with deep UV sensitivity and extremely low power consumption. The emergence of digital Single Photon Avalanche Diode (SPAD) arrays also called digital SiPMs is starting to revolutionize many sensing applications, including high rate neutron detection and even air analysis. We will review how the development of digital SPAD arrays for nuclear physics is promising to enable the characterization of the fusion plasma temperature that the company General Fusion is hoping to produce. And we will discuss how ultra low power air analysis sensor enabled by digital SPAD arrays may help protect Canada against devastating forest fires in the coming decades.

### Keyword-1

Nuclear Physics

### Keyword-2

Beta decay applications

### Keyword-3

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