

# IEEE-NPSS School on Nuclear and Plasma Opportunities for Energy and Society



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## Radiation detectors basics (Photosensors ,Silicon detectors, Gaseous detectors)

*Friday 28 March 2025 09:00 (1h 45m)*

Radiation detectors are essential for measuring and analyzing ionizing radiation in various fields, including medical imaging, particle- nuclear physics, and environmental monitoring. These detectors operate by converting radiation interactions into measurable electrical signals. This lecture will explore the three major kinds of radiation detectors currently used in the abovementioned fields: Photosensors which convert radiation into optical photons, Silicon detectors that exploit the ionization of silicon to generate charge carriers and Gaseous detectors which function by ionizing gas molecules, leading to the collection of charge under an applied electric field. The lecture will provide a foundational understanding of these detector types, highlighting their working principles, advantages, and their applications in radiation detection.

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