Ultimate Low Light-Level Sensor Development

Coordination

WP 5: Porject Management
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SENSE

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WP 1: Roadmapping & Monitoring

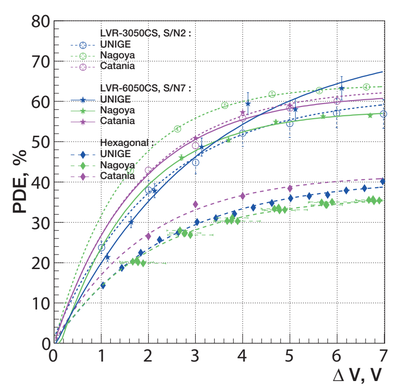
The roadmap aims to define the R&D activities that SENSE intends to follow for the development of the ultimate low light-level (LLL) sensor(s).
We focus on developments that are crucial for two photo-sensing technologies: silicon photomultipliers (SiPMs) and photomultipliers (PMTs).
We have identified three major sectors of development for each technology:

- performance of the sensors (which usually depends on the application)
- readout/control electronics
- integration of such electronics into the sensor.

Max-Planck-Institut für Physik

WP 2: R&D Cooperation

In the context of SENSE a collaboration between several labs experienced in measuring photosensors was developed and is regulated within a Cooperation agreement to characterize LLL sensors and standardize measurements and analysis procedures. As a first step each Test Facility is characterized and systematic errors relevant for various measurements are compared. Doubled efforts characterizing sensors are minimized and common precisions on measured quantities are established.



PDE as a function of overvoltage ΔV at 405 nm wavelength for three Hamamatsu devices, measured by UNIGE, INAF-CT and Nagoya at room temperature. On average the relative difference of 7.8% was found.

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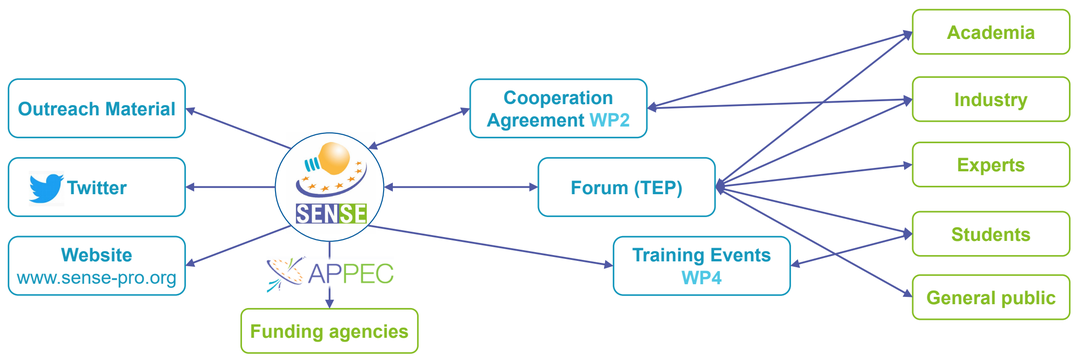
WP 3: Outreach & TEP

Dissemination of results and communication between all involved parties of the project (industry, academia and funding agencies)

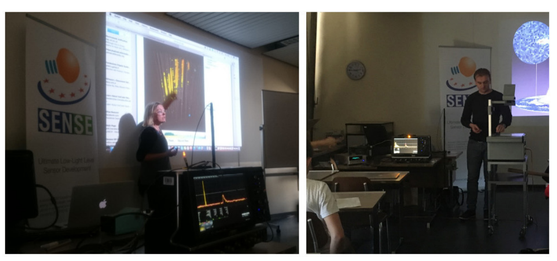
Karlsruhe Institute of Technology



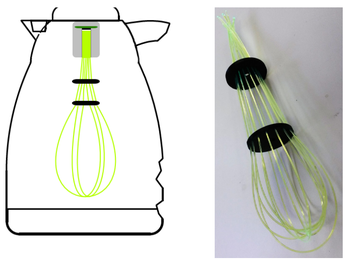
WP 4: Training & Learning

- Introduce the topic of LLL sensors R&D and attract young researchers to technology development with special emphasis on female researchers
- Training events and virtual training of researchers
- Examples: TecDay, practical session at summerschool, development of students demonstration experiement

TecDay Geneva



Student experiment



DESY

This project received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 713171

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