



Contribution ID: 110

Type: Oral

Latest Developments in KETEK's Silicon Photomultiplier Solutions

Wednesday, 10 July 2019 14:40 (15 minutes)

KETEK provides silicon photomultiplier (SiPM) detectors for many years now. Besides single channel SiPM sensors, KETEK has developed several customized, easy-to-use and integrated products for many applications.

The new WB-series of Silicon Photomultiplier features a cost efficient, robust and reliable package, which is also MR compatible. Noise parameters have been minimized and the detection efficiency has been improved. In addition to WB-series SiPM with a 3x3 mm² active area, the SiPM WB-series is now also available with a 1x1 mm² active area. This compact SiPM is ideal for high resolution arrays and features the same robust chip package.

KETEK developed and improved highly competitive multi-channel array solutions with optimized fill factor. Besides SiPM arrays consisting of 64 channels with 3x3 mm² each, we show a high-resolution array of 64 SiPM with 1x1 mm² per channel. Furthermore, custom array solutions can be integrated in this concept as well.

Based on the SiPM technology we established integrated modules. For detection with ultra-low noise effects KETEK shows a SiPM module in TO8 housing with integrated TEC cooling and NTC sensor.

Besides the easy-to-use evaluation kits with preamplifier and bias source we present an integrated module as a cost-effective replacement of photomultiplier tubes. It includes a transimpedance amplifier and a bias voltage controlling function. Moreover, it offers a high dynamic range, single photon detection capability and is compatible to standard optics mounts. The output signal can be fed directly into the DAQ without further pre-processing.

KETEK is constantly developing new solutions and improving the current detectors. We will give an outlook on our research and development activities and on future products.

Author: Dr EGGERT, Tobias (KETEK GmbH)

Co-authors: Dr ENGELMANN, Eugen (KETEK GmbH); Dr FOJT, Reinhard (KETEK GmbH); Dr GANKA, Thomas (KETEK GmbH); Mr GEBAUER, Wolfgang (KETEK GmbH); Mr HARTINGER, Werner (KETEK GmbH); Dr ISKRA, Peter (KETEK GmbH); Dr SCHNEIDER, Florian (KETEK GmbH); Dr WIEST, Florian (KETEK GmbH)

Presenter: Dr EGGERT, Tobias (KETEK GmbH)

Session Classification: SiPM, High -Z, chair: Roelof de Vries

Track Classification: general