



Contribution ID: 102

Type: Poster

## The VSiPMT - A new generation of photodetectors

*Monday, 25 May 2015 16:06 (0 minutes)*

VSiPMT (Vacuum Silicon PhotoMultiplier Tube) is an innovative design we propose for a revolutionary hybrid photon detector.

The idea is to replace the classical dynode chain of a PMT with a SiPM, which therefore acts as an electron detector and amplifier.

The aim is to match the large sensitive area of a photocathode with the performances of the SiPM technology. The VSiPMT will have many attractive features such as low power consumption, weak sensitivity to magnetic fields, excellent photon counting capability and so on.

We first studied the feasibility of this detector both from theoretical and experimental point of view, by implementing a Geant4-based simulation and studying the response of a special non-windowed MPPC by Hamamatsu with an electron beam.

Thanks to this result Hamamatsu realized two VSiPMT industrial prototypes. We now present the results of a full characterization of the VSiPMT prototype and the preliminary study we are performing to realize a 2-inches and 3-inches VSiPMT prototype .

**Primary author:** BARBATO, Felicia Carla Tiziana (NA)

**Co-authors:** MOLLO, Carlos Maximiliano (NA); VIVOLO, Daniele (NA); DI CAPUA, Francesco (INFN); BARBARINO, Giancarlo (NA); DE ROSA, Gianfranca (NA); MIGLIOZZI, Pasquale (NA); DE ASMUNDIS, Riccardo (NA); Dr CAMPAJOLA, luigi (università di napoli federico II)

**Presenter:** DE ASMUNDIS, Riccardo (NA)

**Session Classification:** Photo Detectors and PID - Poster Session

**Track Classification:** S2 - Photon Detector and PID