Contribution ID: **138** Type: **Poster**

Results from Cryo-PoF: power over fiber for fundamental and applied physics at cryogenic temperature.

Friday, 31 May 2024 09:09 (1 minute)

The power over fiber (PoF) technology delivers electrical power by sending laser light through an optical fiber to a photovoltaic power converter, in order to power sensors or electrical devices.
This solution offers several advantages: removal of noise induced by power lines, robustness in a hostile environment, spark free operation when electric fields are present and no interference with electromagnetic fields.
This technology is at the basis of the Cryo-PoF project: an R&D funded by the Italian Insitute for Nuclear Research (INFN) in Milano-Bicocca (Italy).
This project is inspired by the needs of the DUNE Vertical Drift detector, where the VUV light of liquid argon must be collected at the cathode, i.e. on a surface whose voltage exceeds 300 kV.
We developed a cryogenic system, which is solely based on optoelectronic devices and a single laser input line, to power both the Photon Detection devices and its electronic amplifier.
In this talk the results obtained in Milano- Bicocca will be presented with emphasis on performance and potential application in the field of applied physics.

Collaboration

Role of Submitter

I am the presenter

Primary author: TORTI, Marta (INFN - Milano Bicocca)

Presenter: TORTI, Marta (INFN - Milano Bicocca)

Session Classification: Electronics and On-Detector Processing - Poster session

Track Classification: T7 - Electronics and On-Detector Processing