

DRD4 – WG I: Photodetectors

Long term goal: Advance the detectors for PID and TOF identification systems of future HEP experiments.

- Work programme: studies and development of novel photodetectors:
 - solid state - SiPMs,
 - vacuum based - MCP-PMTs,
 - hybrid photon detectors, other blue sky ideas.
 - + exchange of information on gas-based with DRD1.

- Follow the forum principle and **can be joined or left without formalities.**

- 42 Groups that expressed interest in this area in the questionnaire nr. 4
 - Check the list and report errors by email

- Conveners until the formal creation of collaboration
 - Convener 1 : Rok Pestotnik
 - Convener 2 : Peter Križan

Institutions

1. CERN (ARC activity)
2. IFIN-HH Bucharest
3. LPSC Grenoble
4. INFN Bari
5. CalVision
6. ICCUB
7. Jožef Stefan Institute
8. University of Leicester
9. Georgia State University
10. GSI
11. University of Warwick
12. imXgam CPPM
13. IP2I-Lyon
14. SNU-HFR
15. ARARAT AANL
16. RAL
17. DPhP, IRFU, CEA
18. University of Oxford
19. University of Genova and INFN Genova
20. FBK
21. IHEP-CAS-FPMT
22. INFN Ferrara
23. INFN Padova B2
24. University of Sci/Tech of China
25. FH Aachen
26. INFN Trieste
27. Monash University
28. Erlangen
29. INFN Padova
30. INFN Perugia
31. Queen Mary University of London
32. IP2I Lyon
33. Iowa
34. INFN Pavia, Trento, Milano, Padova
35. Nagoya university
36. CERN-EP
37. ALICE CERN
38. Photonis Technologies
39. INFN - Sezione di Bologna
40. CERN SY-BI
41. Istanbul University-PARDET
42. University of Edinburgh

WGI Topics

1. The resistivity of photon detectors to irradiation,
2. Long-term operation of photon detectors and mitigation measures to prolong their lifetime, e.g., low gain operation and annealing of SiPMs,
3. Operation of photon detectors in other extreme conditions, including cryogenic and high magnetic field operations.
4. Development of large-area fast SiPMs
5. Studies of large-area vacuum photo sensors, e.g., LAPPDs
6. Development of fine granularity detectors for future high-rate experiments.
7. Development of new technologies and their feasibility studies: CMOS-SPAD-based sensors, SiPMs with different internal structures, back-side illuminated SiPMs, etc.
8. Studies of new blue sky technologies for photon detection, e.g., Ge-on-Si APDs
9. Studies of hybrid photon sensors, e.g., Timepix-HPDs and MCP-HPDs
10. Studies and development of read-out electronics suitable for extreme environments (high- radiation, high magnetic field, low temperature)
11. Development of interconnection techniques for optimal integration of sensors and readout electronics.
12. Simulations of photodetector response

Open to accommodate new topics related to Photo detectors, not mentioned above!