

DRD Round-Table

July 13, 2026



DRD collaborations: a brief overview

- DRD1: Gaseous Detectors
- DRD2: Liquid Detectors
- DRD3: Solid-State Detectors
- DRD4: Photosensors and PID
- DRD5: Quantum Sensors
- DRD6: Calorimetry
- DRD7: Electronics
- DRD8: Mechanics and Integration

The Eight DRD Collaborations

Different histories, different backgrounds

- Based on previous R&D collaborations:
 - **DRD1: Gaseous detectors** (based on RD51): *161 institutes, 700++ people*
 - **DRD3: Semiconductor Detectors** (previously RD42, RD50): *145 institutions / 700++ people*
 - **DRD6: Calorimetry** (CALICE, other proto-experiment collabs.): *135 institutes*
- Completely new: (community building, building trust, and finding benefit of being “CERN hosted”)
 - **DRD2: Liquid Detectors:** *86 institutes, 205 members*
 - **DRD4: Photodetectors & PID:** *74 institutes*
 - **DRD5: Quantum Sensors and emerging technologies:** *112 involved groups*
- Transversal activities: no service provider, but with genuine R&D interest (TF9 → ECFA Training Panel)
 - **DRD7: Electronics:** *67 Institutes*
 - **DRD8: Mechanics & Integration:** *38 institutes*

The DRD Programme ([link](#)), Oct. 2025, F. Sefkow

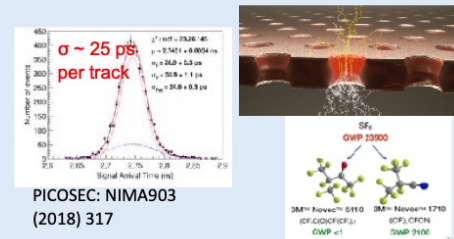
DRD collaborations: a brief overview

The Eight DRD Collaborations - Filled With Life

Teaser

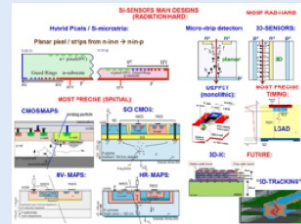
DRD1: Gaseous Detectors

Large · Fast · eco-friendly gases ·
MPGD, e.g. GEMs



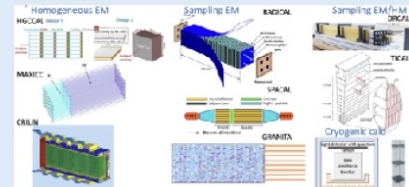
DRD3: Semiconductor Det.

Monolithic CMOS · LGADs ·
radiation hardness · interconns.



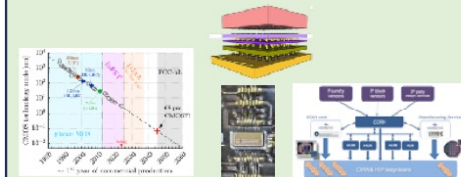
DRD6: Calorimetry

Energy resolution · High granularity ·
dual readout · particle flow ·
sandwich · optical



DRD7: Electronics

ADC/TDC IP Blocks · Opto-electronics ·
packaging · power · extreme
environments · COTS · intelligence on
detector · foundry access



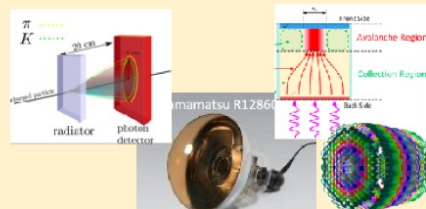
DRD2: Liquid Detectors

for Neutrinos · Dark Matter ·
Ovbb

Noble Elements	Liquid Scintillators	Water Cherenkov
- Argon & Xenon - Ionisation charge & transport - VUV Scintillation, light propagation & detection	- Visible Scintillation, light propagation - Scintillator properties - Isotope loading	- Cherenkov light, light propagation - Doping for n-capture

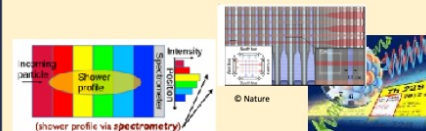
DRD4: Photon detectors

vacuum, solid-state (SiPM), hybrid
single-photon and SciFi detectors ·
applications in PID, RICH, tracking



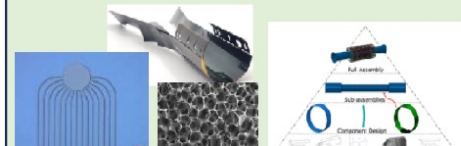
DRD5: Quantum Sensors

Quantum dots · superconduct.
nanowires · bolometers · TES · MMC ·
nuclear clocks
Applications in LEPP, first projects in
HEPP happening



DRD8: Mechanics

Ultra-thin beam pipes · CF foam and new
materials · curved, retractable sensors ·
air & micro-channel cooling · eco-friendly
cooling fluids · robots · augmented reality



DRD Round-Table

- Focus on Chinese institutions involved with activities in DRD collaborations
 - And also new ones that would be interested in joining DRD
- Online Meeting
 - Link: <https://meeting.tencent.com/dm/QE5t2nMgDpra>
 - Tencent Meeting ID: 775-133-843
 - Meeting Passcode: 260713



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 - Meeting Passcode: 260713
- A survey has been created. Please scan the QR code for details
- Prior to general discussion, representatives of each institution are invited to share their input



DRD Round-Table: selected topics

- Focus on Chinese institutions involved with activities in DRD collaborations
 - And also new ones that would be interested in joining DRD
- How to promote closer and deeper collaboration?
- Encounter any problems or difficulties?
- Intellectual Properties (IPs)/Patents
- Possible funding support?
 - Sustainable for developing state-of-art instrumentation technologies, exchange of talents, ...
- Communications
 - E.g. mailing list(s), for organising future round-tables and (topical) workshops