

ERDIT

European Radiation Detection and Imaging Technologies

Cinzia Da Vià
The University of Manchester, UK

Christer Froidh
MIUN, Sundsvall, S

Val O'Shea,
Glasgow University, UK

Outline

- ERDIT
- Motivation for this meeting
- Expected outcomes of this meeting
- Goals
- Proposed Activities
- Summary

The background of ERDIT

- The demand for advanced radiation detectors will increase dramatically in the next few years. A number of large experiments at research institutes including CERN, GSI, ESRF, XFEL, ITER, JET, ESS and others are either being built or are planning for substantial upgrades before or just after 2020
- In addition the concept of "quantum imaging" is used for material testing in industry and has gained interest from the medical imaging industry with an expected annual market exceeding 10 billion euros

Motivation for this meeting

- There is a common understanding that the development of radiation detectors is lagging behind and that the lack of high performance detectors is the limiting factor in many applications
- A possible explanation is that the research is truly multidisciplinary (sensors, front end electronics etc..) and that it does not fit into any of the major research programs
- In Funding Bodies (like EU Frameworks) there are only few cross program calls where this type of research is possible
- We therefore thought it was the right time to consider whether the various communities would be interested in joining forces to establish a Radiation Detection Technology Network at European level to address the above
- This would (must) be done together with industries (how to be decided together) to raise the awareness of common needs and to promote a detector roadmap for future research and innovation in the future Frameworks like HORIZON2020

Expected outcomes of this meeting

- Collection of information on important challenges for the development of high performance radiation detectors in various areas
- Collection of information on the shortcomings of the current detectors as seen by the applications
- Agreement that there is a strong enough common ground to form a European Network

The GOALS of ERDIT

- **create** a research laboratories-academy-industry platform to address the key scientific challenges for development of high-performance radiation detectors in Europe
- **coordinate** the research on radiation detectors with competitive edge at European level
- **promote** a strong interaction between leading scientists in academy, research laboratories, industry and end-users
- **remove overlaps** in research topics
- **increase** piloting of new ideas
- **facilitate** access to national and international R&D funding

Proposed Activities to reach the goals

- Identify common strategies for research and development in radiation detection and imaging technologies in Europe
- Decide on how to address the development of technology roadmaps for radiation detector and imaging technologies
- Agree on how to raise the awareness of the needs for radiation detectors and their impact on societal challenges
- Agree on how to promote the field of research, education, innovation and knowledge transfer at national and European level
- Agree on the terms for industrial involvement
- Agree on the relationships with existing networks and political bodies (i.e. EIROFORUM , national funding bodies etc.)

Summary

Today we will hear on the current status and challenges in 11th fields and applications which use Radiation Detectors and Imaging Technologies

- 14:00 - 14:10 Welcome10'
- 14:10 - 14:30 ERDIT20'
- 14:30 - 14:50 Status and Challenges for Detectors in High Energy Physics20'
- 14:50 - 15:10 Status and main challenges for detectors in Synchrotron Applications20'
- 15:10 - 15:30 Status and challenges for detectors in Nuclear Physics20'
- 15:30 - 15:50 Status and challenges for neutron detectors20'
- 15:50 - 16:20 Coffee
- 16:20 - 16:40 Status and main challenges for detectors at fusion facilities20'
- 16:40 - 17:00 Status and main challenges for detectors in Hadron Therapy20'
- 17:00 - 17:20 Status and main challenges for medical imaging detectors20'
- 17:20 - 17:40 Detectors for pre-clinical imaging20'
- 17:40 - 18:00 Status and main challenges for detectors in Electron Microscopy20'
- 18:00 - 18:20 Status and main challenges for detectors in Astronomy and Astrophysics20'
- 18:20 - 18:40 HighZ Materials20'
- 18:40 - 19:00 Summary of the day20'

Tomorrow we will have the opportunity to exchange views on possible synergies and see if and how we could act together for a stronger impact.

Thank you for coming to the
meeting and thanks to
CERN for kindly hosting it