

ARDENT goals and partners

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ARDENT

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Advanced Radiation Dosimetry European Network Training initiative

Marie Curie Initial Training Network under EU FP7 – 4 M€
7 Full Partners and 5 Associate Partners

Coordinator: CERN, Scientist-in-Charge: Dr. M. Silari

CERN (coordinator), Switzerland
AIT Vienna, Austria
CTU- IAEP Prague, Czech Republic
IBA Dosimetry, Schwarzenbruck, Germany
Jablotron, Prague, Czech Republic
MI.AM, Milano, Italy
Politecnico, of Milano, Italy

ST Microelectronics, Italy
University of Erlangen, Germany
University of Houston, USA
University of Ontario, Canada
University of Wollongong, Australia



Development of advanced instrumentation for radiation monitoring

Three main technologies

- gas detectors [e.g., gas electron multipliers (GEM), tissue equivalent proportional counters (TEPC)]
- solid state detectors [e.g., Medipix, silicon micro-dosimeters]
- track detector techniques [e.g., CR-39, nano-dosimeters]

We can still add detectors / technologies we think are worth investigating!



Objectives & Applications

- **Main objectives**
 - Radiation dosimetry
 - Micro- and nano-dosimetry
 - Photon and neutron spectrometry
- **Applications**
 - Characterization of radiation fields at particle accelerators (research, industry, medical)
 - Characterization of radiation fields on-board aircrafts and in space
 - Assessment of secondary dose to RT patient
 - Measurement of properties of clinical hadron beams

And anything else that comes to our minds!



Researcher Recruitment

- 15 Early Stage Researchers (ESR) to be recruited
 - 4 at CERN, Geneva
 - 2 at AIT, Vienna
 - 3 at CTU, Prague
 - 2 at IBA Dosimetry, Schwarzenbruck
 - 1 at Jablotron, Prague
 - 1 at MI.AM, Milano
 - 2 at the Politecnico, Milano
- Up to *(non necessarily!)* 1/3 of time can be spent on secondments
- Work performed within the project to be used for **PhD**
- Generous training allowance for researchers



Work Packages

- Seven Work Packages
 - WP1: gas detectors (*Sofia Rollet*)
 - WP2: solid state detectors (*Zdenek Vykydal*)
 - WP3: track detectors (*Marco Caresana*)
 - WP4: instrument inter-comparison (*Matteo Magistris*)
 - WP5: training
 - ❖ Individual training programs
 - ❖ Network-wide training
 - WP6: dissemination and outreach
 - WP7: ITN management