



AIDA²⁰²⁰

Advanced European Infrastructures
for Detectors at Accelerators

AIDA-2020

WP2: Innovation & Outreach

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AIDA-2020 Final Meeting, 29th April 2020

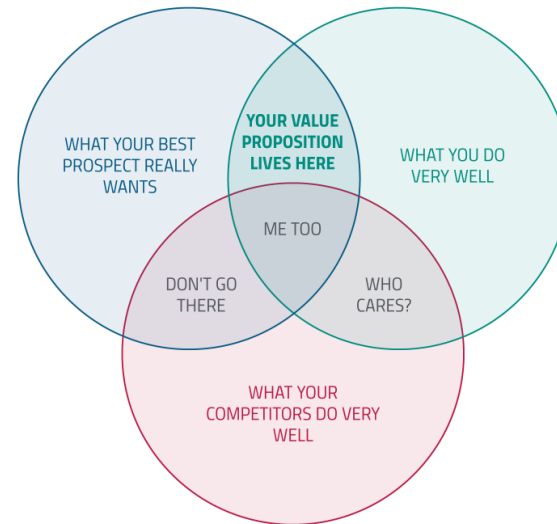


This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654168.

- Scientific Coordination
- Communication, dissemination and outreach
- Industrial relations and technology transfer
- Management of the Proof-of-Concept (PoC) fund
- Pre-industrialisation of large area silicon detectors



- How to improve the KT/TT from AIDA2020 to Industry?
 - Prepare a value proposition of what is unique in each WP:
 - 1slide to explain what is done or what is the specific know-how developed in AIDA2020, what is in it for Industry and the type of industry that might be interested



- The summarizing document will be uploaded on AIDA2020 website



- Objectives of PoC:
 - General field of detector development
 - Collaborative project industry oriented
 - Bringing technologies closer to the market
- Impact beyond high energy physics

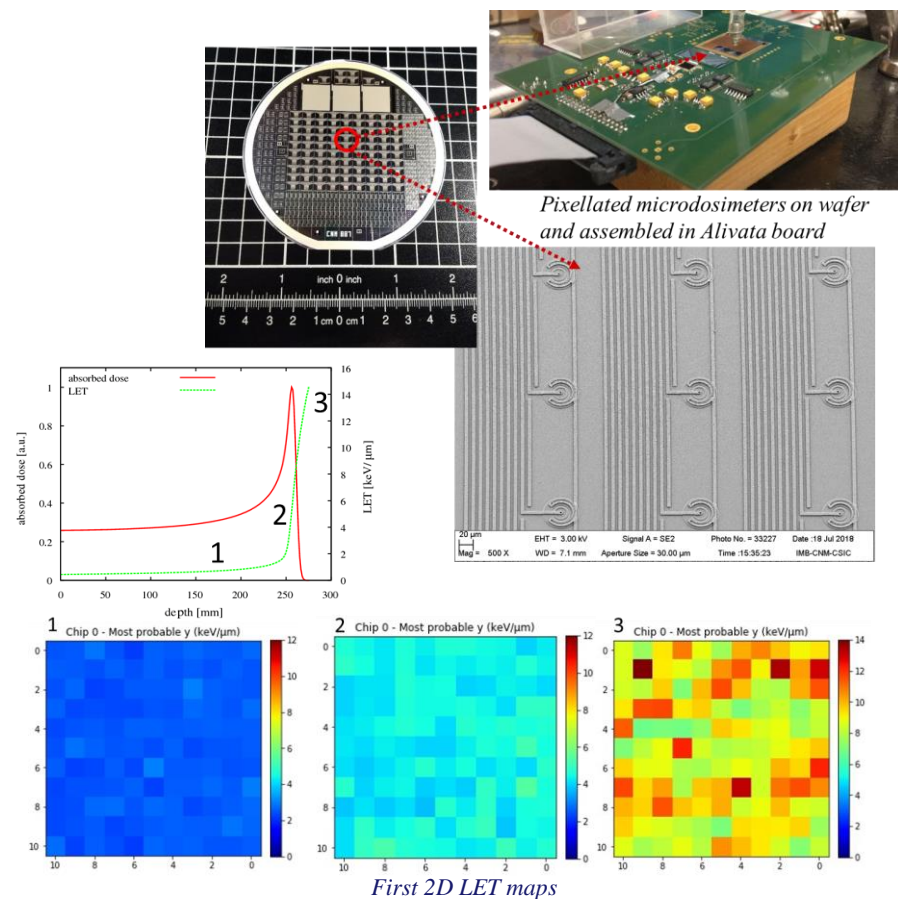


- 3 projects funded:

Budget €	Title	Lead Institute	Partners
45,600 €	Silicon-based Microdosimetry System for Advanced Radiation Therapies	Instituto de Microelectronica de Barcelona	
74,825 €	Advanced Through Silicon Vias for Pixel Detectors	University of Bonn	Fraunhofer IZM
66,641 €	RaDoM	CERN	Politecnico di Milano, Mi.am

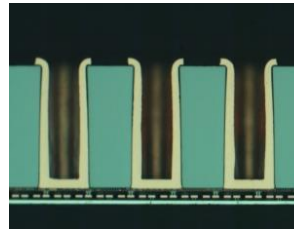
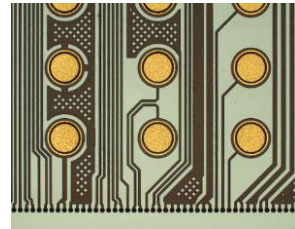
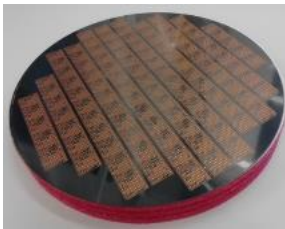


- Sensor design assisted by experts on hadrontherapy for cancer and dosimetry (CNRS, University of Santiago de Compostela)
- 8 × 4" silicon wafers produced
- Sensors produced for two different readout electronics
 - Timepix
 - Alivata (Alibaba Systems, based on VATA chip)
- **First 2-D LET maps obtained** at the Curie Proton therapy center @ clinical fluence rate (1E8 p/cm²s)
- Microdosimetry line of high interest for IMB-CNM - future studies and optimization of the system will continue
- **The SMART project has successfully achieved its goals**





- Development of a process by IZM for Uni Bonn
- Successful development and good performances
- IZM acquired several new projects/customers thanks to these developments



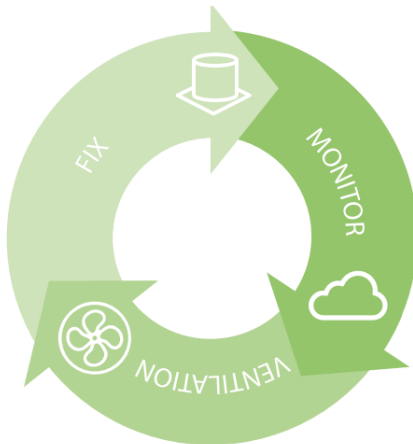


CONNECT DEVICES

Connect sensors and existing HCVA system control units to our cloud. Install IoT minimally invasive air purifiers, if needed

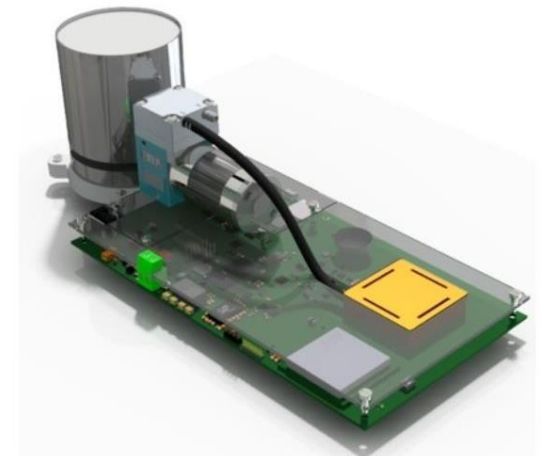


- Incorporation done in Switzerland
- And Italy (Trentino) in a later stage
- Licence agreement signed with CERN



MONITOR THE AIR QUALITY AND DRIVE SYSTEMS

Continuously monitor radon and optimize already installed HCVA systems to solve the radon and air quality problems. Sensors, purifiers and HCVA system are driven through our cloud





- European vendor Infineon was interested in HEP detectors
 - Prototype sensors for CMS tracker, HGCal and ATLAS Itk produced through year-long collaboration
 - Infineon stopped further that project in summer 2018 because of economic reasons
 - Project was very visible within local funding agencies and academic environment
 - Very educative collaboration
 - We learned a lot about commercial production of silicon devices
 - Infineon gained insights in HEP community, device irradiations and received highly trained manpower
- **All sensors have been ordered from HPK**



- Deliverables since last annual meeting:
 - D2.4: PoC projects assessment: final review and perspective of PoC supported projects-M60
 - D2.5: Use of AIDA-2020 results-M60