



Upgraded Facility for Development of Silicon and Diamond Particle Detector Systems (Particle Detectors)

Final Steering Committee Meeting and Dissemination Workshop Zagreb, 9-10 December 2013

Background Information

Particle Detectors project was approved by EC in 2010 and started with implementation on August 1st 2010. It was initially approved for 3 years duration and then extended for another six months, ending with 31st January 2014.

The aim of the project is to reinforce the scientific and technological potential of three laboratories within the Ruđer Bošković Institute Division of Experimental Physics for designing, building and testing specific instrumentation needed in their core activities within experimental nuclear and particle physics, interdisciplinary research and applications. These three laboratories are: (i) Laboratory for High Energy Physics, (ii) Laboratory for Nuclear Physics, and (iii) Laboratory for Ion Beam Interactions.

Specifically, the scientific and technical objectives of the proposed project are:

1. To reinforce the potential and capability for the development of state-of-the-art silicon detector systems for charged particles detection.
2. To reinforce the potential and capability for the development of state of-the-art diamond detectors for charged particles detection.
3. To reinforce the potential and capability for the testing of state-of-the-art silicon and diamond detector systems for charged particles detection.
4. To strengthen the capabilities for development and testing of detector data acquisition and process control systems used in nuclear and particle physics experiments.
5. To strengthen the organization of the upgraded detector development facility, to mobilize human resources, to strengthen synergy between activities of the participating laboratories, and to increase the visibility inside and outside RBI (at national and international levels).

The foreseen activities within the project included: acquisition of novel detectors and instrumentation; strengthened partnerships with seven European institutions that possess exceptional know-how including the exchange of knowledge and experience with them through exchange of visits, organization of thematic workshops, hiring of qualified scientists that will enhance the research capacity at RBI, and dissemination activities.

As soon as the project implementation started, the Project Management Board (PMB) and Project Steering Committee (PSC) have been appointed. PSC members have been appointed from the seven respective partnering institutions from Europe.

Three PMB-PSC meetings have been planned:

- The first project kick-off meeting was held 6th November 2010.
- The second mid-term meeting was held jointly with the Diamond Detectors Workshop at the Plitvice Lakes between 7-10 May 2012.
- It has been planned to hold the third final PMB-PSC meeting in December 2013. Following the success of the previous joint meeting/workshop held at Plitvice Lakes, we decided to join this PMB-PSC meeting with the Workshop for potential international scientific collaborators, planned within the Work-package on dissemination of project results. Such joint meeting would create the opportunity to exchange the knowledge and experiences between the local participants, PCS members and other researchers invited to the workshop, for the increased benefit for all and increasing the project impact. Finally it was agreed to organize this joint meeting/workshop in Zagreb between 9-10 December 2013.

The Meeting/Workshop objectives

The purpose of the combined meeting/workshop is to:

- present the project achievements to all the meeting participants, including the PSC members and other participants,
- review the project achievements and discuss the obtained results and impact,
- exchange the knowledge between local and international participants on their research activities through presentations and discussions,
- discuss about possibilities for future collaborations.

AGENDA

Monday, 9 December 2013

- 9:00 – 9:30 Opening
General *RBI Presentation*, Tome Antičić (RBI Director)
- 9:30 – 9:50 *PD project overall presentation*, Stjepko Fazinić
- 9:50 – 10:05 *Silicon detectors Part I*, Neven Soić
- 10:05 – 10:20 *Silicon detectors Part II and laser testing*, Vuko Brigljević
- 10:20 – 10:40 Break
- 10:40 – 11:10 *Diamond detectors, micro-beam testing and DAQ-Control systems*, Milko Jakšić
- 11:10 – 11:25 *New vacuum chamber testing end-station*, Suzana Szilner
- 11:25 – 11:40 Discussion
- 11:40 – 12:40 Accelerator facility tour
- 12:40 – 14:10 Lunch
- 14:10 – 14:40 *Towards ideal detector for event-by-event fluctuation measurements*, Marek Gazdzicki
- 14:40 – 15:10 *Detector Development in Bristol*, Joel Goldstein
- 15:10 – 15:40 *Status of 3D Diamond*, Alexander Oh
- 15:40 – 16:00 Break
- 16:00 – 16:30 *Micrometric diamond detectors for ion-beam therapy: achievements and future challenges of MedAustron research*, Giulio Magrin
- 16:30 – 17:00 *An overview of CCFE activities and analysis tools in support of ITER*, Lee Packer

Tuesday, 10 December 2013

- 9:00 – 9:30 *Nuclear astrophysics with coincidence arrays*, Christian Aaen Diget
- 9:30 – 10:00 *Broad resonances in light nuclei*, Hans Otto Uldall Fynbo
- 10:00 – 10:30 *Effective nucleus-nucleus potential from reaction studies*, Krzysztof Michal Rusek
- 10:30 – 10:50 Break
- 10:50 – 11:20 *Direct measurements of reactions involving ^{12}C : $^{12}\text{C}(\alpha,\gamma)^{16}\text{O}$ and $^{12}\text{C}+^{12}\text{C}$* , Frank Strieder
- 11:20 – 11:50 *Detector developments and first results on isospin sensitive observables within the FAZIA collaboration*, Giovanni Casini
- 11:50 – 12:20 *Presentation Title: to be announced*, Ismael Martel
- 12:20 – 13:50 Lunch
- 13:50 – 14:20 *Super-thin scCVD membrane PIM device*, Michal Pomorski
- 14:20 – 14:50 *Development of Evaluation Techniques of Defects in Semiconductors using Heavy Ion Microbeams*, Takeshi Ohshima
- 14:50 – 15:10 Break
- 15:10 – 15:40 *CCE degradation in silicon diodes induced by ion beam irradiation*, Ettore Vittone
- 15:40 – 16:10 *Study and development of Particle Detectors at the National Accelerator Center of Sevilla*, Javier Garcia
- 16:10 – 16:45 Final discussions
- 16:45 – 17:00 Closing
Final remarks, Ralitsa Atanasova, EC Research Programme Officer

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