



# Status of the ENSAR2 JRA2 - PSeGe and concluding remarks to the 2<sup>nd</sup> PSeGe Workshop

A.Gadea (IFIC-Valencia) for the PSeGe Collaboration

2<sup>nd</sup> PSeGe Workshop, University of Milan 11<sup>th</sup>-12<sup>th</sup> September 2017



## Tasks

- **Task 1: New technologies on passivation and segmentation (INFN-LNL)**
- **Task 2: R&D on novel Ge-detector geometries for ultimate position resolution and efficiency (Coordination GSI)**
- **Task 3: R&D on segmented p-type coaxial detectors (Coordination CSIC)**
- **Task 4: Network activity: Demonstration of imaging applications and associated detector technologies (Uni. Liverpool)**

# Milestones



## •Milestones (2016)

- Web page of the Work Package has been created:  
<http://psege.lnl.infn.it>
- MS10.1: Kick-off R&D Meeting: Completed in Q2 2016,  
Reported Feb. 2017
- MS10.2: 1<sup>st</sup> Detector R&D Application / associated  
technologies workshop:  
Completed in Q4 2016, Reported in Feb. 2017

## •Milestones (2017)

- MS10.3: 2<sup>nd</sup> Detector R&D Application / associated  
technologies workshop: 11<sup>th</sup>-12th September 2017

# Status



- **Task 1: New technologies on passivation and segmentation**
  - Contract assigned to INFN ongoing (Walter Rainiero) since 3/11/2016
  - Done the first test of implantation of Boron in planar detectors to produce new contact technologies
  - Now working in the preparation of a coaxial detector from a raw Ge-HP crystal in order to check the new contact technology in quasi-coaxial detectors.
  - The contract for a post doc position in IKP-Cologne is assigned (Herbert Hess) starting from 1.12.2016. Funds will be used until 31.8.2018
  - Development new encapsulation techniques ongoing at IKP-Cologne.
  - Cryostat development is ongoing for new detector prototypes in collaboration between IKP-Cologne and INFN.

# Status



- **Task 2: R&D on novel Ge-detector geometries for ultimate position resolution and efficiency**
  - Contract on-going (Tugba Arici)
  - Proceeding with the prototype of quasiplanar geometry for position sensitive Ge detectors. First prototype is now been characterized.
- **Task 3: R&D on segmented p-type coaxial detectors**
  - Under consideration the use of Phosphorous for dopant diffusion and activation for the junction formation. (Now also Sb!)
  - Collaboration established with the Micro electronics group of the University of Padova, Italy
  - Ongoing the formalities of the contract for a pre-doctoral o post-doctoral collaborator.

# Status



- **Task 4: Demonstration of imaging applications and associated detector technologies**
  - Ongoing the 2<sup>nd</sup> workshop on Detector R&D, Applications and associated technologies.
  - Collaboration on-going on Position Sensitive Ge Detector Imaging applications.
  - IKP-Cologne is contributing to the developments with the work of a master student (Rouven Hirsch) working on gamma ray imaging with two different position sensitive HPGe detectors: a cylindrical coaxial detector, and tapered AGATA detector both 36 fold segmented. This work performed in collaboration with University of Liverpool.

# Deliverables

(24 Months: Early 2018)



Deliverable Number <sup>14</sup>	Deliverable Title	Type <sup>15</sup>	Dissemination level <sup>16</sup>	Due Date (in months) <sup>17</sup>
D10.1	Results of the JRA2 kick-off meeting	Report	Public	12
D10.2	Advancement report for the Segmentation and Geometry tasks	Report	Public	30
D10.3	Advancement report for the p-type task	Report	Public	30
D10.4	Advancement report for the Imaging task	Report	Public	30
D10.5	Final report for the Segmentation and Geometry tasks	Report	Public	48
D10.6	Final report for the p-type task	Report	Public	48
D10.7	Final report for the Imaging task	Report	Public	48

All

Task 1 & 2

Task 3

Task 4

Task 1 & 2

Task 3

Task 4

## Remarks:

- In March the mid-term project report will be delivered. It is being prepared already.
- Progress in several tasks of the project shown in the JRA collaborators contributions
- Synergy expected to grow, specially with industrial partners.





**Thank's to all the people contributing  
in particular our guest from other  
collaborations and companies  
Thanks' to all you for participating**

