

Minutes of the Seventh Meeting of the Physics & Instrumentation Task of the EURISOL Design Study

Université Libre de Bruxelles, 18th May 2007

T10-07, Brussels, 180507

Present: C. Angulo, Y. Blumenfeld, P.A. Butler, B. Fernandez Dominguez, S. Franchoo, M. Labiche, R.D. Page, C. Petrache, B. Roeder, N. Severijns, K. Subotic, P.M. Walker

1. **Minutes of previous meeting and matters arising:** It was suggested that some illustrations could be included in the report describing the specimen experiments and that an executive summary be included in the report on the apparatus selected for further study, specifying the 10 selected experiments. [Action: RDP]

Questions were raised about the beam analysis spectrometer and whether this was part of Task 6 or Task 10.

[Action: Y. Blumenfeld and P.A. Butler to clarify this at the Joint Task Meeting on 11th June]

2. **Update on specimen experiments and instrumentation, including progress on cost estimates:**

RDP reported that the next [milestone](#) was to produce preliminary cost estimates for all apparatus by June 2007, with final revised estimates by June 2008. It was pointed out that a floor plan of the experimental areas would have to be produced as part of this Task in order to achieve this. The management representatives advised that it was better to get realistic estimates slightly later than incorrect ones on time. The other milestone was to produce a report on experiments that provided in-beam validation of the design concepts and sub-task leaders were urged to monitor experiments that could be included in this report.

a) [Neutron detection schemes for \$\beta\$ -decay studies](#) B. Roeder presented the latest developments in this project and a summary of a meeting in Caen in February to consider a new β -delayed neutron detector array for SPIRAL II. He is initially concentrating on fast neutron detection, since many of the problems are the same as those for slow neutrons. It was noted that a deuterated scintillator for neutron detection has recently been funded in Canada.

b) **Sweeper magnet, ancillary detectors and the Transfer Reaction Array** No progress was reported on this aspect.

c) [Integrated charged particle and \$\gamma\$ -ray detector system](#) B. Fernandez Dominguez presented simulations for an integrated charged particle and γ -ray detection system. It was agreed that the effect of the size of the beam spot should be studied to see whether this provided constraints on the accelerator or whether it would be necessary (or possible) to track the ions, which would be novel at these energies. It was suggested that a realistic case with known energy levels should be simulated. It was noted that a meeting involving B. Fernandez Dominguez, M. Labiche, N.A. Orr and B. Roeder had taken place in Surrey to discuss the simulations. It was agreed that a meeting of experts in this field should be arranged around the time of the TIARA-MUST campaign at SPIRAL during Autumn 2007.

d) **Cryogenic and polarized targets** It was agreed that F. Marechal should be contacted regarding the latest developments. [Action: Y. Blumenfeld]

e) [Recoil separator](#) R.D. Page presented possible solutions to the problems posed by the intense beams of radioactive ions and the background arising from Rutherford scattering of the beam. It was noted that a test using VAMOS was planned for July, which could serve as an in-beam validation of some of the proposed ideas.

f) **Any other proposals** No further proposals were advanced.

3. Other news of progress from sub-tasks:

b) **Ground state properties** P.M. Walker reported that the TITAN Penning trap at TRIUMF was close to operating with highly charged ions.

f) **Astrophysics** C. Angulo reported that there had been a CARINA meeting early in 2007, but it was proving difficult to formulate specimen experiments. It was suggested that key instruments for astrophysical measurements with EURISOL should be identified and examples of experiments using these could be given. It was understood that these examples would change with time as the field advanced.

h) **Fundamental interactions** N. Severijns presented a summary of the latest developments in this field and how they might influence the experimental programme at EURISOL. From some of the examples it became clear that part of the EURISOL experimental area might require a higher ceiling for some of the apparatus.

4. **Reports on PDRA activities:** It was pointed out that R. Lazauskas should prepare a report on his work since he is to finish shortly. **[Action: R.D. Page]**

5. **EURISOL Parameter Database:** It was pointed out that the parameters required from Task 10 had largely already been defined in the report on the post-accelerator properties by N.A. Orr. Each sub-task leader should identify their most exacting requirements in terms of the energy range, time structure, energy resolution, energy precision, beam spot size and emittance. The species and intensity should also be given. **[Action: RDP to initiate process]**

6. **EURISOL User Group:** P.A. Butler explained the context and development of the User Group. Angela Bonaccorso had agreed to be the coordinator at the CERN Town Meeting. Anyone interested should register at the web site, which is available via <http://www.eurisol.org>. It was reported that the User Group would organize a workshop jointly with Task 10 for early 2008. It was agreed that a proportion of at least 50% of female speakers was a reasonable aim, in line with the Design Study's policy on gender issues. A committee would be set up at the next Town Meeting to run the User Group.

7. **“EURISOL Network” in the next EURONS in FP7?** Y. Blumenfeld explained the ideas to carry forward the EURISOL project through EU instruments in FP7. A Letter of Intent was being prepared, in which the work packages currently envisaged would be to update the physics case for EURISOL, establish a network of laboratories that were possible sites and to establish an ISOL technique exchange network.

8. **Programme for EURISOL Town Meeting:** Y. Blumenfeld gave an outline of the programme for the Joint EURISOL-EURONS Town Meeting, which will be held in Helsinki on 17th – 21st September 2007. Ideas for speakers were discussed. It was noted that Task meetings would take place on the morning of Thursday 20th September.

9. **Issues for EURISOL DS Management:** None.

10. **Any Other Business:** Y. Blumenfeld gave feedback on the mid-term review. It was not yet clear when the next allocation of money would arrive. It was reported that Alan Shotter had agreed to chair the EURISOL Site Study Committee.

11. **Date & venue of next meeting:** During the Joint EURISOL-EURONS Town Meeting in Helsinki, on the morning of Thursday 20th September 2007.