

CHANDA – workshop on target preparation – the needs and the possibilities

23.-25.11.2015

at PAUL SCHERRER INSTITUTE Villigen
Room OSGA/EG06

Programme

Monday, 23.11.2015

- 8:00 Registration
- 8:30 Welcome (D. Schumann, PSI Villigen, Switzerland – E. Gonzalez, CIEMAT Madrid, Spain)

Session 1: The impact of nuclear data in basic and applied natural science (chair: A. Plompen)

- 9:00 Nuclear data for nuclear energy (S. Leray CEA Saclay, France) invited
- 9:30 Nuclear Data – the key to understand cosmogenic nuclides in extraterrestrial matter (R. Michel; ZSR Hannover, Germany) invited
- 10:00 Nuclear data for Medical Applications (S. Qaim, FZ Jülich, Germany) invited
- 10:30-11:00 Coffee break*
- 11:00 Nuclear Data in Geoscience (T. Dunai, Uni Köln, Germany) invited
- 11:30 The crucial role of nuclear data in superheavy element research (A. Tuerler, PSI Villigen, Switzerland) invited
- 12:00 Nuclear data and related uncertainties in nuclear astrophysics (R. Reifarth, Uni Frankfurt, Germany) invited

12:30 -14:00 Lunch

Session 2: Isotope production (chair: S. Qaim)

- 14:00 Isotope production at PSI (E. Maugeri, PSI Villigen, Switzerland)
- 14:30 Isotope production at ILL (U. Köster, ILL Grenoble, France)
- 15:00 Production of the medical isotopes with P/D medical and heavy ion cyclotrons (A. Stolarz, Uni Warsaw, Poland)
- 15:30 Targets for the production of new radioactive ion beams at CERN-ISOLDE (J. Ballof, CERN Genf, Switzerland)

16–16:30 Coffee break

Session 3: Target manufacturing and characterisation (I) (chair: T. Dunai)

- 16:30 Target manufacturing at PSI (St. Heinitz, PSI Villigen, Switzerland)
- 17:00 Techniques applied at JRC-IRMM for the preparation and characterization of active and stable nuclide targets (G. Sibbens, IRMM Gel, Belgium)
- 17:30 Target characterization at PSI using ICP-MS (N. Kivel, PSI Villigen, Switzerland)
- 18:00 Chemical Purification of Pu and Preparation of Pu-242 Targets by Molecular Plating (K. Eberhardt, Uni Mainz, Germany)
- 19:00 Panel discussion about the cross cutting in Nuclear Data Research (with the invited speakers, chair S. Leray)

Tuesday, 24.11.2015

Session 4: Target manufacturing and characterisation (II) (chair: R. Michel)

- 8:30 Natural U and Th targets for IGISOL (H. Pentillä, IGISOL Jyväskylä, Finland)
- 9:00 Sample requirements for neutron induced reaction cross section measurements (J. Heyse, JRC-IRMM Geel, Belgium)
- 9:30 Target fabrication at the target laboratory at GSI (B. Lommel, GSI Darmstadt, Germany)
- 10:00 workshop photo
- 10:30 *Coffee break*

Session 5: Results of experiments I (chair: R. Reifarth)

- 11:00 Measurement of the $^{10}\text{Be}(n,\gamma)$ cross section with LABR₃ detectors (M. Weigand, Uni Frankfurt, Germany)
- 11:30 Measurements of the ^7Be (n,cp) reactions: a big challenge for sample preparation and experimental setups (M. Barbagallo, INFN Bari, Italy)
- 12:00 Measurement of the ^{242}Pu neutron induced fission cross section at nELBE (A. Junghans, HZDR Dresden, Germany)
- 12:30 Production (at ILL and PSI) and use (at n_TOF) of radioactive targets for nuclear astrophysics (C. Guerrero, Uni Sevilla, Spain)

13:00 -14:30 *Lunch*

Session 6: Results of experiments II (chair: A. Türler)

- 14:30 ^{44}Ti : Status, progress and hopes (A. Murphy, Uni Edinburgh, UK)
- 15:00 Characterization of the spatial distribution of high radioactive targets for capture cross section measurements of s-process branching nuclei at CERN n_TOF (A. Tarifeno-Saldivia, UPC, Spain)
- 15:30 Toward measurements of neutron interactions with ^7Be and the primordial ^7Li problem (E.E. Kading, UConn, USA)
- 16:00 New capture cross section of ^{242}Pu for MoX fuel reactors (C. Guerrero, Uni Sevilla, Spain)

16:30 *Coffee break*

Session 7: Future plans I (chair: G. Sibbens)

- 17:00 Target needs at SPIRAL2 phase 1 (C. Stodel, GANIL Caen, France)
- 17:30 Need in radioactive targets for CHANDA-sponsored projects at Uppsala University (A. Prokofiev, Uni Uppsala, Sweden)
- 18:00 Nuclear astrophysics experiments with a high-intensity liquid-lithium $^7\text{Li}(p,n)$ neutron source and the Soreq Applied Research Accelerator Facility (M. Paul, Uni Jerusalem, Israel)

19:00 *workshop dinner*

Wednesday, 25.11.2015

Session 8: Future plans II (chair: U. Köster)

- 8:30 Radiative capture cross section of ^{13}C (T. Wright, Uni Manchester, UK)
- 9:00 Slightly neutron-rich Si isotopes - an interesting region to be studied (Ch. Langer, Uni Frankfurt, Germany)
- 9:30 Production of a ^{91}Nb -Target (B. Thomas, Uni Frankfurt, Germany)
- 10:00 Neutron capture reactions for the nucleosynthesis of the Light p-nuclei (K. Göbel, Uni Frankfurt, Germany)

10:30-11:00 Coffee break

Session 9: Future plans III (chair: D. Schumann)

- 11:00 Target production for the time of flight experiment $^{85}\text{Kr}(n, \gamma)$ (S. Fiebiger, Uni Frankfurt, Germany)
- 11:30 How radioactive targets can help us gain further insights into the properties and structure of light nuclei (O. Kirsebom, Uni Aarhus, Denmark)
- 12:00 Precise and accurate measurements - standards in accelerator mass spectrometry (A. Wallner, ANU Canberra, Australia)
- 12:30 ^{53}Mn – the aims, the needs and the problems (R. Dressler, PSI Villigen, Switzerland)

13:00 -14:30 Lunch

14:30 End of workshop, departure

- 14:30 Internal CHANDA meeting WP3 (completing the CHANDA target list)
- 15:30 Internal CHANDA meeting WP3 (funding distribution)

Thursday, 26.11.2015

- 9:00 CHANDA Excom meeting