CHANDA

Monday, 23 November 2015 - Wednesday, 25 November 2015

Paul Scherrer Institute

Scientific Programme

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}Be(n,□) cross section with $LaBr_3$ detectors

(M. Weigand, Uni Frankfurt, Germany)

11:30 Measurements of the ^{7}Be (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 ^{7}Be and the primordial ^{7}Li 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}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}Kr(n, □)

(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 <span class="Apple-tab-span"

style="white-space:pre"> (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