

At the end of my work for fulfilling the PhD, 1995-1998, I wrote my PhD thesis:

"Neutron pre-emission investigation for ^{11}Li halo nuclei and Si fusion"

Under coordination of:

Coordinator Professor: Marius Petrascu.

All my activity during this period of time (exams, reports, defending the PhD thesis) was performed at the Bucharest University, Physics College, Magurele.

My PhD work started in 1995 and ended in June 1998, when I defended my PhD thesis.

PhD Diploma in Nuclear Physics was released in December 1998.

My PhD thesis contribution was in analyzing and interpreting the experimental results from a radioactive beam experiment $^{11}\text{Li} + \text{Si}$ held in RIKEN, Japan. This experiment, proposed by Professor Marius Petrascu, was searching for a novel behaviour of the so called halo nuclei, which was on the top of interest of these types of weakly bound nuclei, immediately after they were discovered by Professor Isao Tanihata.

While working for my PhD thesis at Section III (1995-2000), I collaborated to the bellow projects:

1. M. Petrascu, C.Bordeanu, A.Isbasescu, H.Petrascu, F.Negoita, L. Marinescu
Energetic calibration for the TANDEM accelerator (1999) using analog izomer isobar resonance in ^{13}N , 14.214 MeV, by elastic scattering on carbon –
4940/18.11.1999 SUMM : 164.7125.267 lei
2. M.Petrascu, H.Petrascu, A.Isbasescu, C.Bordeanu
Extension '0' alignment for the TANDEM accelerator (1999)
3. M. Petrascu, C.Bordeanu, A.Isbasescu, H.Petrascu, R.Dima, L. Marinescu
Gas purity from inside the TANDEM accelerator measurements(2000)
4. M. Petrascu, C.Bordeanu, A.Isbasescu, R.Ruscu
Neutron Scintillation probes characterization using a $^{241}\text{AmBe}$ neutron source (1999)
5. M. Petrascu, C.Bordeanu, A.Isbasescu, R.Ruscu
Neutron Scintillation probes characterization using deuteron beams from the TANDEM accelerator (d+Au) (1999)
6. M. Petrascu, C.Bordeanu, A.Isbasescu, H.Petrascu
Biological probes characterization using ERDA method (bones, brain tissue) (1998-2000)
7. M. Petrascu, D.Pantelica, C.Bordeanu, A.Isbasescu, H.Petrascu
Thin sample profiling using nuclear methods (1998-2000)
8. C. Bordeanu
Programs for experimental data analysis in beam by recoil atoms element analysis (1999)
9. M. Petrascu, C.Bordeanu, A.Isbasescu, I.David
Characterization of material impurities by atoms recoil method (1997) $^{16}\text{O}+^{27}\text{Al}$
10. A.Fomicev, M.Petrascu, C.Bordeanu
Energy calibration and efficiency curves for thick Si detectors for Dubna
11. C.Bordeanu
Programs for determining the pre-emission probability for the halo neutrons for the fusion of ^{11}Be with light and heavy targets (1998)
12. C.Bordeanu
Programs for determining the pre-emission probability for the halo neutrons for the fusion of ^{11}Be with light and heavy targets (1999)

Grants

1. M.Petrascu, A.Isbasescu, H.Petrascu, C.Bordeanu, I.Cruceru, M.Giurgiu, I.Tanihata

Experimental measurements and theoretical calculations for the neutron pre-emission when halo nuclei interact with light targets

SCIENCE ACADEMY GRANT 79/1999 (January)

Summ: 17 million lei

2. M.Petrascu, A.Isbasescu, H.Petrascu, C.Bordeanu, I.Cruceru, M.Giurgiu, I.Tanihata

Halo ^{11}Li nuclei fusion investigation to Si light targets in energy range 15-25 AMeV

GRANT ANSTI 5194/1999 (3 years)

For 1999 year, summ: 25 million lei

Unique product used abroad

1. M Petrascu, C.Bordeanu, I.Cruceru, A.Isbasescu, D.Mangeac, R.Ruscu, H.Petrascu, C.H.Giolu

Array neutron detector: design and construction, delivered to RIKEN-Japon (I.F.I.N. 1997-2000)

International experimental arrangement

1. M.Petrascu, C.Bordeanu, I.Cruceru, A.Isbasescu, R.Ruscu, H.Petrascu, M.Giurgiu, I.Tanihata,

A.Ozawa, K.Morimoto

International experimental arrangement for the halo ^{11}Li nuclei fusion investigation to light targets

– accomplished at RIKEN-Japon in 2000

Member of a research team responsible for the development of an international project

1. Collaboration to Institute of Physical and Chemical Research RIKEN-Japon (1997-2000)