JRA6 EURISOL
WP14

WP leader: Yorick Blumenfeld (IN2P3-IPNO)

Deputy WP leader: Fredrik Wenander (CERN)

OUTLINE

- General News and CRIBE Task

Manssour Fadil (GANIL)

- Innovative Charge Breeding Task (ICBT)

Pedrag Ujic (GANIL)

- BeamLab Task

Maher Cheikh Mhamed (CNRS-IPNO)

Participants and Management

- **Participants: CERN, GANIL, HIL Warsaw, IFJ Krakow, IN2P3 – IPNO, INFN – LNL.**
- **Steering committee: WP leader + 1 representative per participant**
  - **Alberto Andrighetto (INFN – LNL Legnaro)**
  - **Piotr Bednarczyk (IFJ Krakow)**
  - **Yorick Blumenfeld (IN2P3-IPNO, WP leader)**
  - **Manssour Fadil (GANIL)**
  - **Przemysław Gmaj (HIL Warsaw)**
  - **Maher Cheikh Mhamed (IN2P3-IPNO)**
  - **Fredrik Wenander (CERN, deputy WP leader)**
- **Total EC budget: 640 K€**

Objectives and Structure

- **EURISOL concept defined during EURISOL DS (2005-2009) : NuPECC LRP priority**
- **JRA includes R&D**
  - **Necessary for future EURISOL**
  - **which will enhance output of ENSAR2 ISOL facilities, in particular SPIRAL & SPIRAL2, HIE-ISOLDE, SPES and ALTO.**
- **Includes 3 tasks:**
  - **ICBT: Innovative Charge Breeding Techniques**
  - **Beamlab: Development of chemically reactive nuclear beams**
  - **CRIBE: Chart of Radioactive Ion Beams in Europe**

Deliverables and Milestones

- **Milestones**
  - **MS14.1: Experiments to find the optimal breeder configuration (ICBT; Month 24) Submitted**
  - **MS14.2: Nuclear data of produced beams (CRIBE; Month 36)**
- **Deliverables**
  - **D14.1: Report on performances of the EBIS debuncher (ICBT; Month 24) Submitted**
  - **D 14.2: Report on R&D on radioactive plasma ion sources (Beamlab; Month 36)**
  - **D14.3: Conceptual design report of a new generation charge breeder (ICBT; Month 36) delayed to month 44**
  - **D14.4: New targets, ion sources and beams (Beamlab; Month 48)**
  - **D14.5: Chart of Beams (CRIBE; Month 48)**

Meetings and Publications

- June 17 2016 Orsay: Kickoff meeting; 10 participants
- October 19 2016 Leuven : CRIBE meeting; 8 participants
- March 20 2017 Legnaro : Beamlab meeting; 11 participants
- March 30 2017 CERN : ICBT meeting ; 8 participants
- March 6 2018 GANIL: ICBT meeting; 5 participants
- April 3 2018 CERN : BeamLab meeting 10 participants
- Publications
  - "The TwinEBIS setup: Machine description", M. Breitenfeldt, R. Mertzig, J. Pitters, A. Shornikov, F. Wenander, Nucl Instrum Meth A, Volume 856, 1 June 2017, Pages 139-146
  - MEDeGUN Commissioning Results, M. Breitenfeldt, F. di Lorenzo, A. Pikin, J. Pitters, and F. Wenander, accepted for publication in Proceedings of ICIS 2017

- Conferences
  - "EURISOL in ENSAR2" presented by Yorick Blumenfeld at the EPS Divisional Conference: Towards EURISOL Distributed Facility, Leuven, Belgium, 18-21 Oct. 2016
  - "Charge breeding techniques for European RIB facilities" presented by Pierre Delahaye at the ARIS Conference in Colorado, USA 27 May – 2 June 2017

CRIBE
(Chart of Radioactive Ion Beams in Europe)

JRA EURISOL
WP14

Task leader: M. Fadil (GANIL) (partner : IFJ-PAN/Krakow)

**GANIL team: M. Fadil, L. Fortin, M. Lewitowicz, N. Ménard,
with the contribution of M. Celary (IFJ-PAN/Krakow)**

Participants: GANIL, ISOLDE, SPES, JYFL, *ALTO (?)*

ENSAR2 Town Meeting – Groningen - April 17th, 2018

CRIBE : Objectives

Two objectives of this task :

1. **Collection of available nuclear Data about RIBs in european nuclear facilities**

All partners

2. Development of a chart of beams concerning all RIBs produced in european nuclear facilities

GANIL & IFJ Krakow

CRIBE : Deliverables and Milestones

- **Milestone**
  - **MS14.2: Nuclear data of produced beams (CRIBE; Month 36)**
- **Deliverable**
  - **D14.5: Chart of Beams (CRIBE; Month 48)**
- **EC budget (incl. Overheads): 32 K€**

CRIBE : the involved facilities

List of facilities :

- **S3-GANIL (France)**
- **SPIRAL1-GANIL (France)**
- **ISOLDE-CERN**
- **SPES-LNL (Italy)**
- **JYFL (Finland)**
- ***Alto, IPN/Orsay (France)***

CRIBE : the chart of beams

The format of the DATA as it was discussed and validated by the different partners

isotope	half-life	Pre-accelerated RIB		Post-accelerated RIB					Production		Beam Availability Year	Facility
		intensity	purity min %	intensity	purity min %	charge state	energy MeV/A min	energy MeV/A max	target material	primary beam		

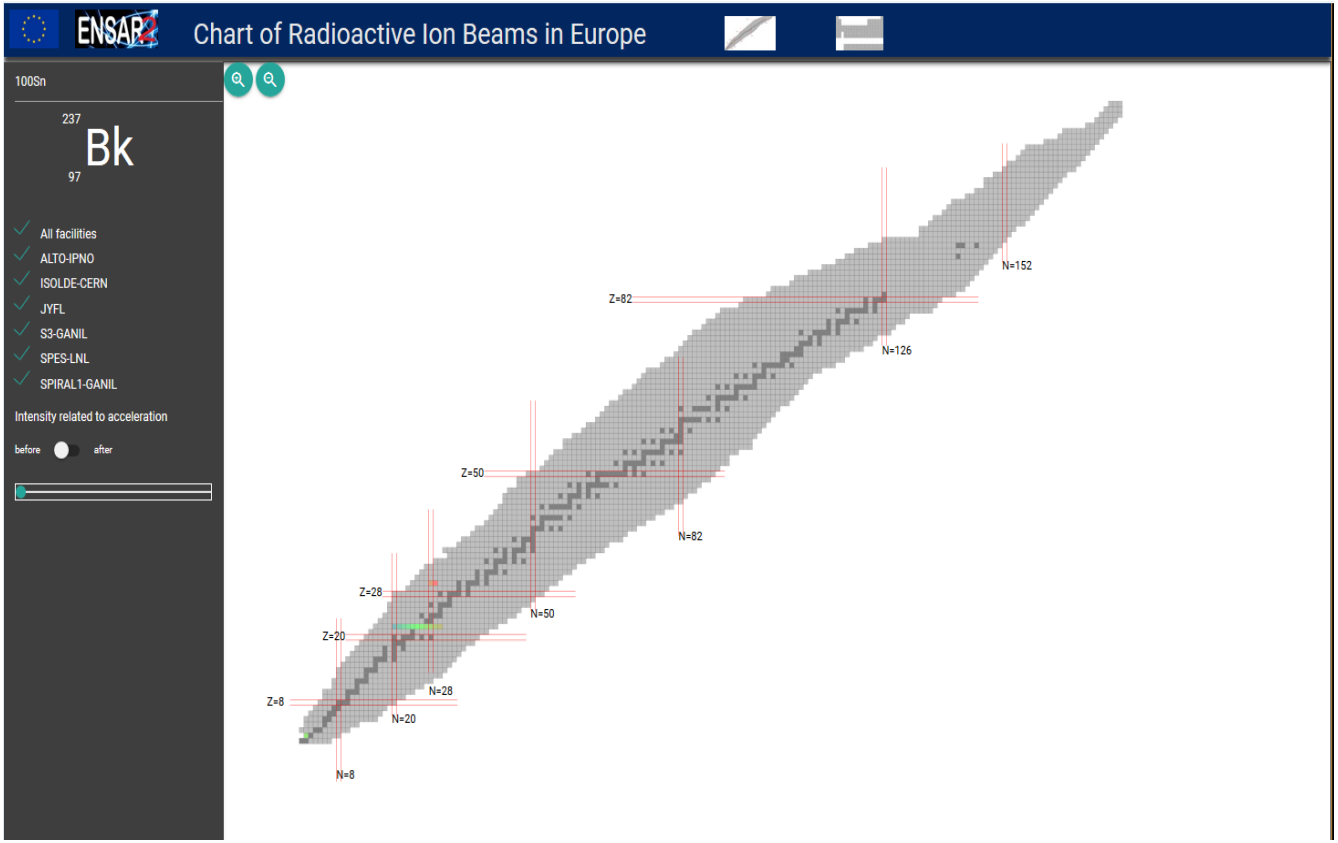
CLOSE

Beam list

Isotope	Facility	HalfLife	Intensity (pp	Purity	Charge	Energy Min(MeV/n)	Energy Max(MeV/n)	Target Materiel	Primary Beam	Availabity Year
58Zn	SPIRAL1-GANIL	84 ms	1.4			1.2	11.4	Carbon	78Kr	2018
58Zn	SPIRAL1-GANIL	82 ms	1.8e-1	0	12	1.2	11.4	Carbon	76Kr	2018
58Znm	S3-GANIL	86 ms	1.17e+2	0	12	1.2	11.4	Carbon	71Kr	
58Znm	SPES-LNL	25 ms	6e+2	0	12	1.2	11.4	Carbon	78Kr	

15 Measured value
15 Extraposation from preacc
15 Calculated Value

CRIBE : the chart of beams



Carried out by: APLICAEN (April 2018)

APLICAEN

CRIBE : what we still have to do

- **Beam data compilation: milestone given at the end of May 2018**
- **Improvement of the Chart of beams**
- **Connection of ISOLDE-database to CRIBE-database**
- **Upload of the data into CRIBE**

Innovative Charge Breeding Task (ICBT)

Pedrag Ujic (GANIL)

BeamLab Task

Maher Cheikh Mhamed (CNRS-IPNO)