EURISOL-NET

Task#1: Coordination and Dissemination of R&D for ISOL Facilities

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On behalf of Task#1
Coordinator: CERN
Associated Partners: GANIL, IN2P3, INFN & JYU

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Overview

1. Task#1 Partners
2. Task#1 Objectives
3. Working Groups
4. Outlook

Task # 1: Associated Partners

Milestone number	Milestone name	Work package(s) involved	List of Participants
M-NA03-1.1	Setting up of working groups for each subject	NA03	GANIL/SPIRAL2 — IN2P3/IPNO INFN — JYFL — CERN
		Neutron Converter Studies	GANIL/SPIRAL2: L. Tecchio IN2P3/IPNO INFN: P.F. Mastinu (LNL) JYFL CERN: Y. Kadi
		Target Material Studies (direct, fission)	GANIL/SPIRAL2: H. Franberg-Delahaye IN2P3/IPNO: C. Lau & E. Cottereau INFN: A. Andrighetto (LNL) JYFL CERN: T. Stora
		Ion sources R&D	GANIL/SPIRAL2: P. Jardin IN2P3/IPNO: C. Lau & M. Cheikh-Mhamed INFN: L. Celona (LNS) JYFL: H. Koivisto CERN: Pekka Suominen
		Beam Manipulation & Purification	GANIL/SPIRAL2: P. Delahaye IN2P3/IPNO INFN: G.L. Cosentino (LNS) JYFL: A. Jokinen CERN: F. Wenander
		SCRF Cavities R&D	GANIL/SPIRAL2: R. Ferdinand IN2P3/IPNO: S. Bousson INFN: A. Pisent (LNL) JYFL CERN: M. Pasini

WP1: Target & Ion Sources

- ***Neutron converters:*** Converters which produce neutrons from initial charged particle beams are an essential component of high power ISOL facilities. Solid converters are in use at ISOLDE and being developed at GANIL for SPIRAL2, while an innovative liquid Hg converter will be an essential component (developed at IPUL, ISOLDE and PSI) of the future EURISOL facility.

- ***Development of fission and other target materials; study of release properties:*** The improvement of radiation hardness and release properties of ISOL targets are essential to increase the beam intensities and scientific output of ISOL facilities. Vigorous related R&D, particularly concerning sub-micron structured target materials, will be performed at ALTO and ISOLDE, linked with JRA 02

- ***Improvement of Ion Source performances:*** Efficiency and selectivity are the essential parameters to be improved, as well as multi-charge capability for 1^+ to n^+ acceleration schemes. Cutting edge technologies for various types of ion sources are being developed, some of them within JRA01
    - Laser ion Sources (IN2P3-ALTO, ISOLDE)
    - ECR Sources (GANIL, INFN-LNS, JYFL)
    - EBIS Sources (ISOLDE)
    - Febiad source (IN2P3-ALTO)

WP2: Beam Preparation

- ***Beam manipulation and purification:*** Progress in this very challenging subject is essential for providing high quality beams to the users. Major progress is expected in Coolers and mass separators (INFN-LNS, ISOLDE) and Gas cells and traps (JYFL), in coordination with JRA03.

WP3: SCRF Cavities

- ***Superconducting Linear Accelerator Technology:*** Advances in RFQ systems and superconducting accelerator cavities are necessary for the realization of the HIE-ISOLDE and later for EURISOL. This work will be progressing at GANIL, INFN-LNL, IN2P3-IPNO and ISOLDE.

Milestones

1. ✔ Identify Contact Person from each Associated Partner
2. ✔ Organize the Working Groups
3. **1st WG meeting: Identify items of interests to EURISOL (month 12)**
4. 1st EURISOL Town Meeting (month 18)
5. Plan 2nd WG meeting: Monitor R&D progress (month 30)
6. 2nd EURISOL Town Meeting (month 40)