

# Overview of the Validation Activities of IFMIF/EVEDA: LIPAc, the Linear IFMIF Prototype Accelerator and LiFus6, the Lithium Corrosion Induced Facility

Tuesday, October 23, 2018 9:20 AM (25 minutes)

In this report, the latest results of the validation activities of the IFMIF/EVEDA project under the Broader Approach agreement are overviewed. For the Linear IFMIF Prototype Accelerator (LIPAc) to demonstrate the 9MeV/125mA D<sup>+</sup> beam acceleration, the beam qualification study of the injector was completed with the emittance of 0.16 pi mm mrad smaller than required 0.3 pi mm mrad, and the maximum vane voltage in the RFQ cavity was achieved at 143kV exceeding the required 132kV. These components and other subsystems of LIPAc are ready to inject the beam to RFQ to provide the 5MeV D<sup>+</sup> beam. The Superconducting RF linac necessary for the 9MeV D<sup>+</sup> beam is close to the end of manufacturing phase to start its final assembly in Rokkasho. For the liquid lithium loop activities, 4,000 hours lithium corrosion test of the Reduced Activation Ferritic/Martensitic steels using the LiFus6 were completed and verified that the corrosion rate can be kept under control and well below the requirement of 1 micro-m/y, after achieving a good purity of lithium, < 30ppm N.

## Country or International Organization

Japan

## Paper Number

OV/3-3

**Primary author:** SUGIMOTO, Masayoshi (QST-Rokkasho)

**Co-authors:** Dr MARQUETA, Alvaro (F4E-Garching); Dr PISENT, Andrea (INFN-LNL); Dr AIELLO, Antonio (ENEA-Brasimone); Dr PALMIERI, Antonio (INFN-LNL); Dr JOKINEN, Antti (IFMIF/EVEDA ILIC Unit); Dr KASUGAI, Atsushi (QST-Rokkasho); Dr BOLZON, Benoit (CEA/Saclay); Dr RENARD, Bertrand (CEA/Saclay); Dr DE LA MORENO, Cuzzani (INFN-LNL); Dr BORTOLATO, Damiano (INFN-LNL); Dr JIMENEZ-REY, David (CIEMAT); Dr REGIDOR, David (CIEMAT); Dr GEX, Dominique (F4E-Garching); Dr FAGOTTI, Enrico (INFN-LNL); Dr GRESPAN, Francesco (INFN-LNL); Dr SCANTAMBURLO, Francesco (IFMIF/EVEDA ILIC Unit); Dr MICCICHE, Gioacchino (ENEA-Brasimone); PRUNERI, Guiseppe (IFMIF/EVEDA ILIC Unit); Dr PHILLIPS, Guy (F4E-Garching); Dr DZITKO, Hervé (F4E-Garching); Dr KIRPITCHEV, Igor (CIEMAT); Dr MOYA, Ivan (IFMIF/EVEDA ILIC Unit); Dr PODADERA, Ivan (CIEMAT); Dr MARRONCLE, Jacques (CEA/Saclay); Dr MOLLA, Joaquin (CIEMAT); Dr SAKAMOTO, Keishi (QST-Rokkasho); Dr KONDO, Keitaro (QST-Rokkasho); Dr ANTONIAZZI, Loris (INFN-LNL); Dr BELLAN, Luca (INFN-LNL); Dr MONTIS, Maurizio (INFN-LNL); Dr COMUNIAN, Michele (INFN-LNL); Dr WEBER, Moises (IFMIF/EVEDA ILIC Unit); Dr BAZIN, Nicolas (CEA/Saclay); Dr CHAUVIN, Nicolas (CEA/Saclay); Dr FAVUZZA, Paolo (ENEA-Brasimone); Dr ABBON, Philippe (CEA/Saclay); Mr CARA, Philippe (F4E-Garching); Dr BEAUVAIS, Pierre-Yves (F4E-Garching); Dr MENDEZ, Purificacion (CIEMAT); Dr GOBIN, Rapahel (CEA/Saclay); Dr HEIDINGER, Roland (F4E-Garching); Dr ICHIMIYA, Ryo (QST-Rokkasho); Dr CHEL, Stephane (CEA/Saclay); Dr MAEBARA, Sunao (QST-Rokkasho); Dr SHINYA, Takahiro (QST-Rokkasho); EBISAWA, Takashi (QST-Rokkasho); Dr AKAGI, Tomoya (QST-Rokkasho); Dr HIRATA, Yosuke (QST-Rokkasho); Dr KNASTER, Juan (IFMIF/EVEDA ILIC Unit)

**Presenter:** SUGIMOTO, Masayoshi (QST-Rokkasho)

**Session Classification:** OV/3 Overview Magnetic Fusion

