Contribution ID: **318** Contribution code: **THPB036** Type: **Poster Presentation**

Completion of Phase B+ beam commissioning of Linear IFMIF Prototype Accelerator (LIPAc)

Thursday 29 August 2024 16:00 (2 hours)

The Engineering Validation and Engineering Design Activities for the International Fusion Materials Irradiation Facility (IFMIF/EVEDA) are being pursued under the Broader Approach agreement between EURATOM and the Japanese government. The Linear IFMIF Prototype Accelerator (LIPAc) is under commissioning in Rokkasho, Japan to demonstrate the feasibility of the high duty (CW) and high current (125mA) deuteron beam operation. Currently, the LIPAc beamline is in its final configuration, except for the SRF linac currently replaced by a temporary beam transport line, and is undergoing a high duty cycle RFQ operation up to 5 MeV, which is called Phase B+ and is planned to be completed by the end of June 2024. The major goals of this phase are to validate the RFQ, MEBT and Beam Dump performances at high duty cycle and to characterize the beam properties in preparation to the final configuration with the SRF linac. As of the end of April 2024, a beam current of about 115 mA, a pulse length of up to 3 ms and duty cycle of up to about 4% have been successfully achieved. After the completion of the Phase B+, the SRF will be delivered to the accelerator room and installed in the beamline. This paper will present the results of the Phase B+.

Footnotes

Funding Agency

Primary author: AKAGI, Tomoya (National Institutes for Quantum Science and Technology)

Co-authors: BENEDETTI, Florian (IFMIF/EVEDA Project Team); CARIN, Yann (Fusion For Energy); CHAMBRILLON, Janic (Fusion for Energy); CISMONDI, Fabio (IFMIF/EVEDA Project Team); DE FRANCO, Andrea (National Institutes for Quantum Science and Technology); DZITKO, Hervé (Fusion For Energy); EBISAWA, Takashi (National Institutes for Quantum Science and Technology); GEX, Dominique (Fusion For Energy); HASEGAWA, Kazuo (National Institutes for Quantum Science and Technology); HIROSAWA, Kouki (National Institutes for Quantum Science and Technology); HYUN, Jibong (National Institutes for Quantum Science and Technology); ITAGAKI, Tomonobu (National Institutes for Quantum Science and Technology); JIMENEZ-REY, David (Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas); KANEKO, Naomi (National Institutes for Quantum Science and Technology); KASUGAI, Atsushi (National Institutes for Quantum Science and Technology); KONDO, Keitaro (National Institutes for Quantum Science and Technology); KUMAGAI, Kohki (National Institutes for Quantum Science and Technology); KWON, Saerom (National Institutes for Quantum Science and Technology); MASUDA, Kai (IFMIF/EVEDA Project Team); MIZUNO, Akihiko (Japan Synchrotron Radiation Research Institute); MOYA, Iván (Fusion For Energy); SCANTAMBURLO, Francesco (IFMIF/EVEDA Project Team); SUGIMOTO, Masayoshi (Nippon Advanced Technology Co., Ltd.)

Presenter: AKAGI, Tomoya (National Institutes for Quantum Science and Technology)

Session Classification: Thursday Poster Session

Track Classification: MC3: Proton and Ion Accelerators and Applications: MC3.2 Ion linac projects