**IFMIF/EVEDA – Engineering and validation of equipment in progress**

[](https://f4e.europa.eu/Downloads/News/01_LIPAC-wide-view_web_11022019-110220191200-Large.jpg)

Wide angle of the LIPAc prototype accelerator, Rokkasho, Japan

The International Fusion Materials Irradiation Facility (IFMIF)/ Engineering Validation and Engineering Design Activities (EVEDA) is one of the Broader Approach (BA) projects financed by Europe and Japan to perform research and to develop equipment in support of fusion. With the help of LIPAc, a prototype accelerator, scientists will validate the design of a neutron source which will be used to qualify materials for DEMO, the fusion machine after ITER. QST (Japan) working together with F4E, coordinating the European contributions of INFN (Italy), CIEMAT (Spain), CEA Saclay (France) and SCK-CEN (Belgium), have set up this experimental facility with the world's longest Radio Frequency Quadrupole (RFQ) accelerator, measuring 9.8 m, and its eight radio frequency lines supplying a total of 1.6 MW.

The first [beam operations](https://f4e.europa.eu/mediacorner/newsview.aspx?content=1252) campaign was successfully completed. The first particles (protons) reached 2.5 MeV using 50 keV as energy to kick start the operation. The results obtained during the various tests indicate that the LIPAC design is robust enough to operate at a low current. The first beam campaign was successfully completed in August signaling real progress in the validation of the design. In parallel, the Diagnostics components have been installed and are being tested.

"This first important milestone is of significant importance for those who have been involved since 2014 in the installation and the commissioning of LIPAc. Obviously, we have still a lot to do and deal with several challenges until we reach the final goal. The facility up and running and we are working together to build an attractive device. I think we can all be proud of this collaboration between Europe and Japan particularly when one looks back on what we have jointly developed since 2007 together with esteemed colleagues like P. Garin, H. Matsumoto and J. Knaster" said Philippe Cara, IFMIF/EVEDA Project Leader.

Roland Heidinger, F4E European Project Manager for IFMIF/EVEDA, highlights how this achievement is closely linked to the fusion energy roadmap. "The performance of LIPAc is key to the development and operation of the fusion neutron source— the test facility for materials to be used in fusion devices. In this respect, the LIPAc team has taken a major step ahead."

Additional components like the high energy beam transport line and the high energy beam dump, manufactured by CIEMAT, are in the process of being installed. Along with the October meeting of the IFMIF/EVEDA Project Committee, the transfer of ownership of the equipment from Europe (F4E) to Japan (QST) was signed between the two Parties.