

The first steps to EURISOL

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Following the results and recommendations of the EURISOL RTD conceptual design study performed within FP5, the EURISOL Design Study [1] aims to carry out detailed engineering-oriented studies and technical prototyping work for the next-generation ISOL Radioactive Ion Beam (RIB) facility in Europe. Such a world-class facility, complementary to the “in-flight” FAIR facility being constructed at GSI, is expected to come into operation in the next decade. It would provide unique world-class research opportunities in nuclear physics, nuclear astrophysics and other applications of radioactive beam science. The Design Study addresses the major technological problems which are expected to arise in the creation of a facility able to provide exotic ions in quantities which are orders of magnitude higher than those currently available anywhere else in the world. A feasibility study into the use of the EURISOL facility for the production of pure electron-neutrinos is an integral part of the design study, the so-called “beta-beam” proposal. Synergies which exist between the proposed infrastructure and other European ISOL developments - MAFF, HIE-ISOLDE, SPES, and SPIRAL2 - will be exploited to mutual advantage. Twenty institutes within Europe take part in the design study as full participants, with an additional 20 in Europe, North America and Asia collaborating in the project. In this Design Study the members of the collaboration provide specific technological expertise on superconducting linear accelerators, high-power targetry, RIB production, ion sources and beam manipulation, radiation safety and nuclear instrumentation.

This talk will describe the design of the EURISOL facility and its expected performances. The place of EURISOL in the general scheme of nuclear physics facilities in Europe in the next two decades will also be discussed, in particular in relation to the “intermediate generation” ISOL facilities currently planned or under construction.

[1] see <http://www.eurisol.org>

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