

EUROPEAN SPALLATION SOURCE: NEW STEP TOWARDS THE MOST POWERFUL NEUTRON SOURCE IN THE WORLD



In Sweden, at the European Spallation Source (ESS) research centre, which will host the most powerful neutron source in the world in Lund, the installation of the first part of the linear accelerator was completed in October. The accelerator, the normal-conductive linac called the DTL (Drift Tube Linac), will be the beating heart of the facility. The ESS Drift Tube Linac in fact consists of five cavities for a total of approximately 40 metres, which accelerate the

protons from 3.6 to 90 MeV, the energy at which the protons travel at approximately half the speed of light. The ESS Drift Tube Linac will be the most powerful in the world and was designed by INFN researchers and technologists, in particular of the INFN Legnaro National Laboratories (LNL) and the Turin Division, which also coordinated all the stages relating to the production, assembly, testing, and installation of the DTL. ESS is, in fact, a large European project, the product of a huge international collaboration, in which Italy and INFN play a central role. When it starts operating in 2025, ESS will provide unique research opportunities for thousands of scientists in a wide range of sectors, from materials science to energy, from life sciences to cultural heritage applications.