

## » FOCUS ON



### **ESS, THE MOST POWERFUL NEUTRON SOURCE IN THE WORLD**

It will be a multi-disciplinary research centre based on the most powerful neutron source ever built in the world, approximately 30 times brighter than those currently available. It will enable new opportunities for researchers in the fields of fundamental physics, life sciences, energy, environmental technology and cultural heritage. It is called European Spallation Source (ESS) and is a European project costing 1.84 billion euros, which currently involves 17 countries, with Sweden and Denmark as host nations. ESS, included by the European Strategy Forum on Research Infrastructures (ESFRI) in the roadmap, as a strategic project, involves the construction of a new infrastructure for the neutron sector with advanced features, able to provide a world-class support and give a strong impetus to this important sector for Europe. The importance of this specific area of scientific research, which is aimed in particular at the use of neutron beams for the analysis of materials and biomaterials, lies in the fact that the neutron probe enables a number of studies impossible with other probes, such as photons or electrons. The infrastructure, which is now in the start-up phase and will last approximately ten years, will be built in Lund in Sweden, while the supercomputing centre that will manage the data will be based in Copenhagen, Denmark. Italy is participating with the Ministry of Education, University and Research (MIUR) and with INFN, the National Research Council (CNR) and Elettra Sincrotrone Trieste. Italy's contribution will amount to 6% of the total cost, of which 80% will be in-kind, i.e. through the provision of machine parts. The European Spallation Source will therefore represent an opportunity not only for the world of scientific research but also for high-tech industries. Italy's participation in a project as important as ESS is strategic: on the one hand, it will provide researchers with new opportunities in various fields of fundamental and applied research, while on the other it will be an opportunity for Italian high-tech industries to contribute to the construction of ESS. ■