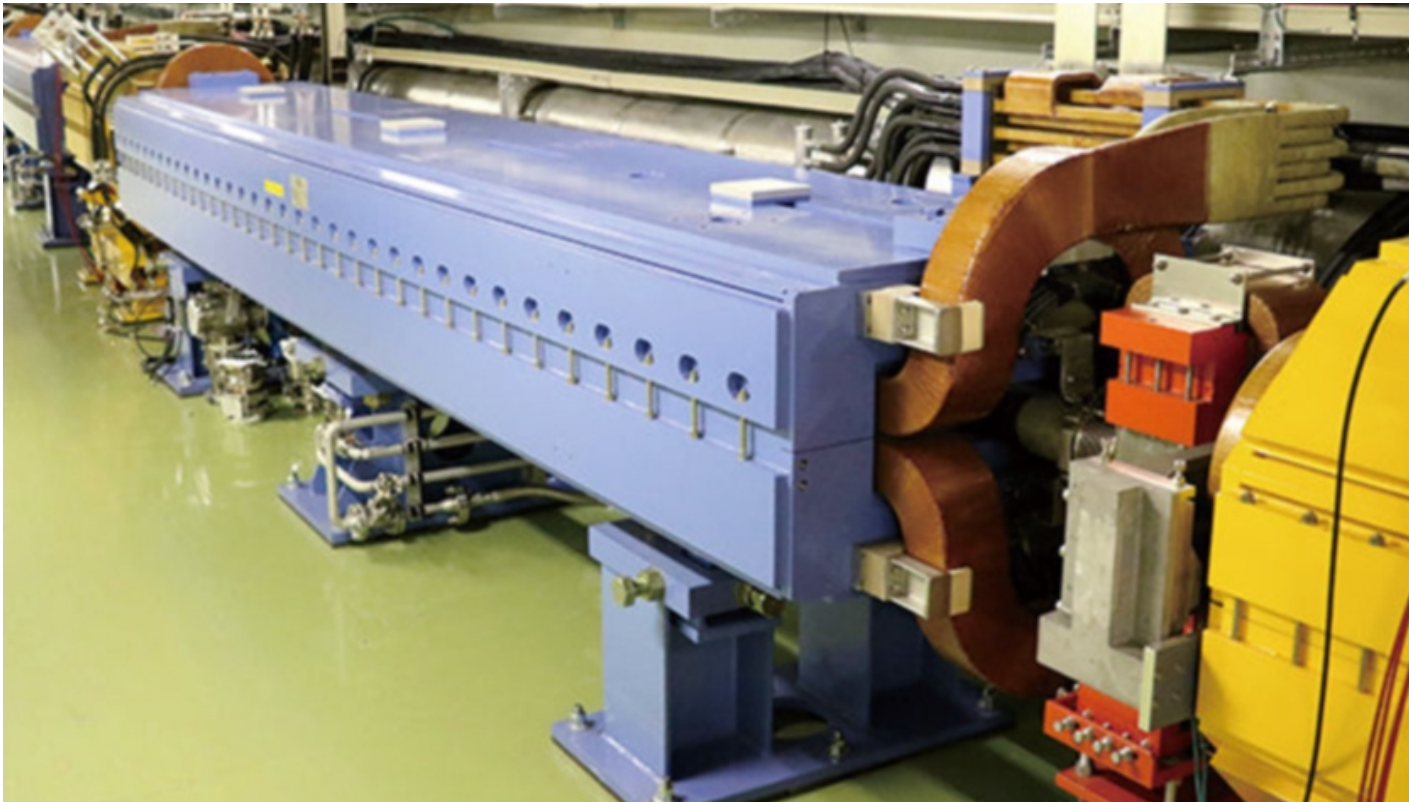


Research accelerators



Japan Proton Accelerator Research Complex (J-PARC) Accelerator MR (Synchrotron, 30 GeV)

Accelerator is a device that accelerates particles (electrons, protons, ions, etc.) to high energies and is used in a wide range of fields, including physics, materials science, medicine, and energy research.

In particular, various types of accelerators have been developed for research purposes. For example, there are high-energy accelerators that accelerate particles to nearly the speed of light and collide them to study elementary particles, the universe, and the origin of matter. At the European Organization for Nuclear Research (CERN) near Geneva, Switzerland, the Higgs boson was observed for the first time in the Large Hadron Collider (LHC), the world's largest and highest-energy particle accelerator with a circumference of 27 km.

The high-intensity beam accelerator is a device that directs a powerful proton beam at a target and uses the resulting secondary particle beams (neutrons, muons and neutrinos, etc.) for research. At the Japan Proton Accelerator Research Complex (J-PARC), the world's most powerful high-energy proton beams are produced, enabling a wide range of research from fundamental studies to industrial applications.

Related Link

[Efforts in the Research Accelerator Business](#) 