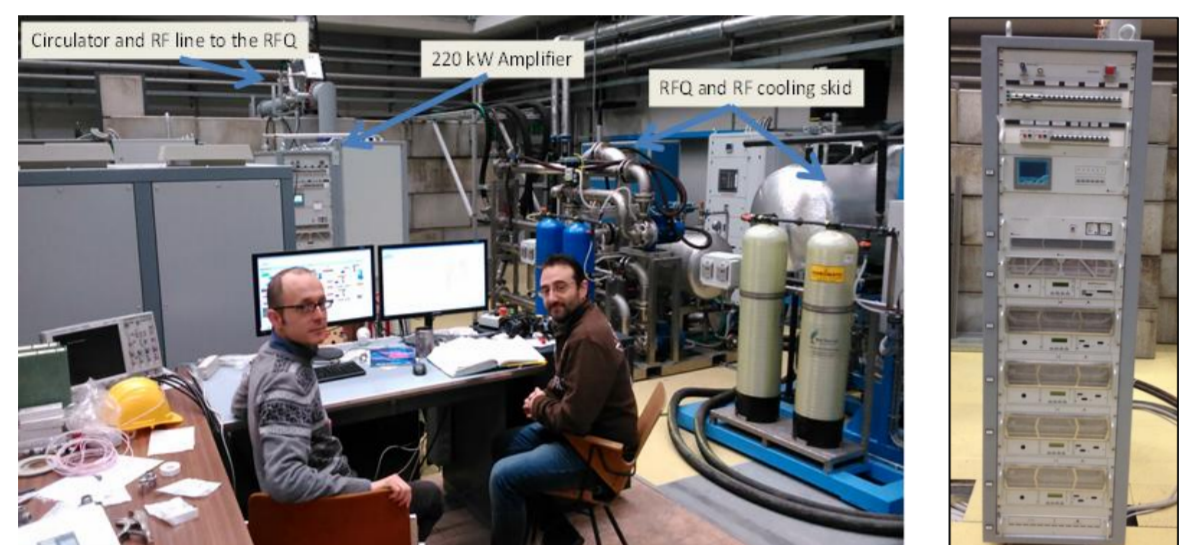


The National Institute for Nuclear Physics (INFN) is the Italian research agency dedicated to the study of the fundamental constituents of matter and the laws that govern them. The INFN carries out research activities at two complementary types of facilities: twenty divisions and four national laboratories. The technological infrastructures dedicated to accelerators and superconducting magnets follow the geographical distribution of the facilities and are linked each other depending on the field of applications. Three major distributed infrastructures are operating with their dedicated facilities.

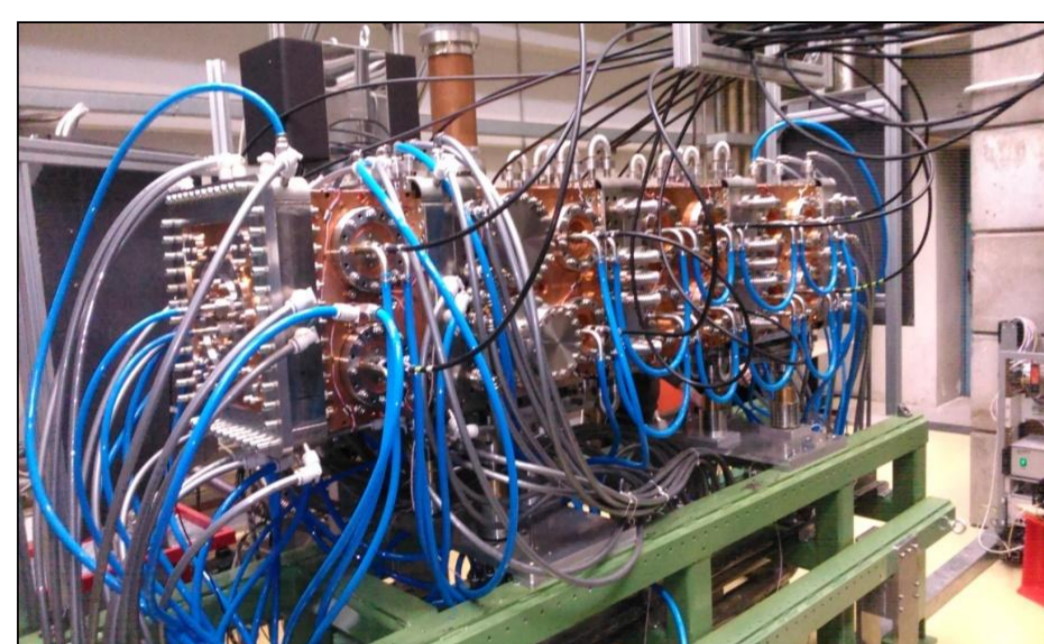
## Hadron accelerators

Distributed technical infrastructure for the development and tests of high power normal conducting structures for hadron acceleration and high power couplers. The infrastructure is distributed in one laboratory and four sections of INFN (Laboratori Nazionali di Legnaro-LNL, Padova, Torino, Bologna).



Facility at LNL for RF tests of resonators and high power couplers

*RF frequency range between 80 and 352 MHz and with an RF power up to 200 kW*



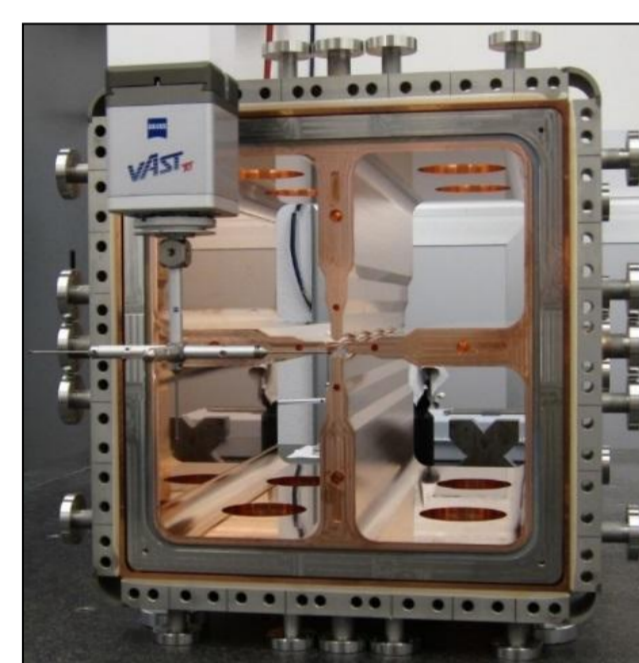
Facility LATA (Laboratorio Test Acceleratori).

*Facility, under completion, for testing accelerating cavities up to 5 MW.*



Brazing Oven

*Furnace in vacuum ( $P=10^{-6}$  mbar,  $T$  up to 1200 °C, for components up to 1 m diameter and 2 m high)*

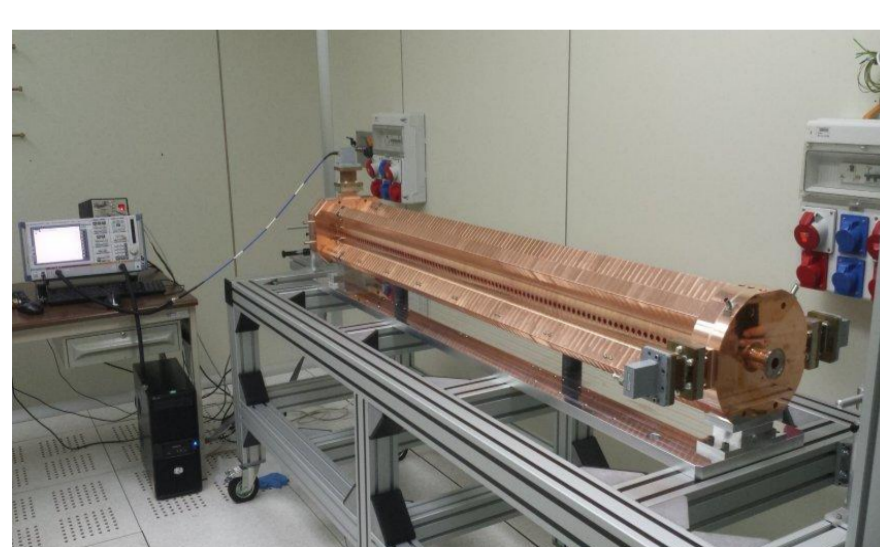


Mechanical Workshops

*(INFN-Padova and LNL) 5-axes CNC milling machine, Coordinate Measuring Machine (1,2x1,4x1,8m) - active scanning, WEDMs, etc.*

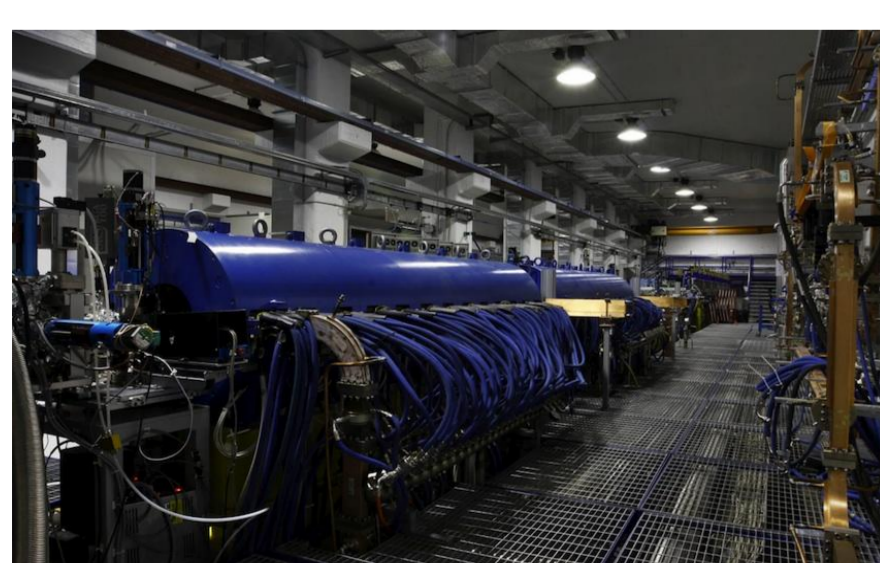
## Electron accelerators

Technical infrastructure for the development and tests of high power normal conducting structures for electron accelerators. The infrastructure is mainly centered in the National Laboratories of the INFN in Frascati (LNF).



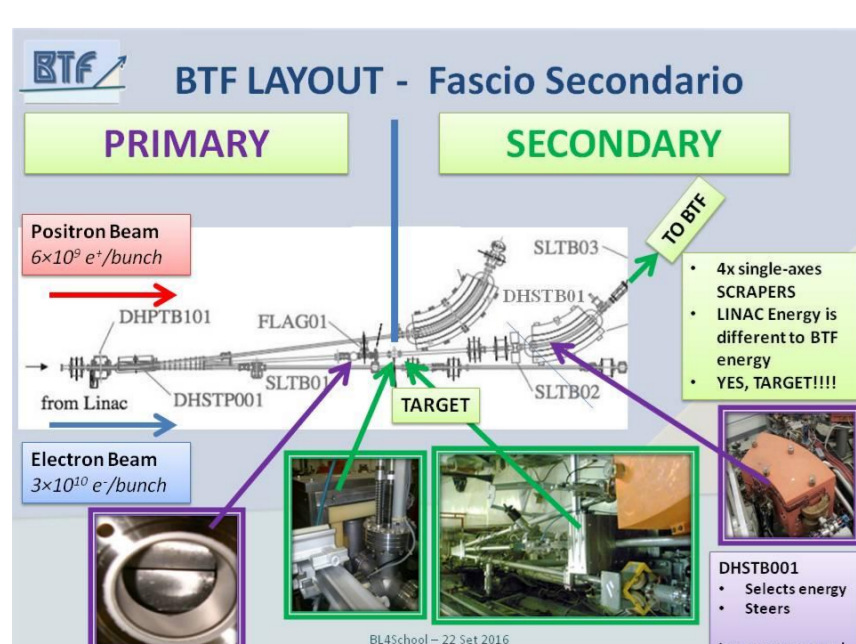
Test facility for low power RF tests

*Low power test of RF structures operating in the range 0.5-15 GHz can be performed in a clean room with Network Analyser and dedicated tools for the measurement of the electromagnetic field inside the cavity based on the bead pull technique.*



SPARC\_LAB Laboratory

*A facility based on the unique combination of high brightness electron beams with high intensity ultra-short laser pulses such to allow the investigation of all the different configurations of plasma accelerator and the development of a wide spectrum inter-disciplinary leading-edge research activity.*



BTF (Beam Test Facility)

*The DAFNE Beam-Test Facility (BTF) is a beam transfer line designed for the optimized, stochastic production of single electrons/positrons for detector calibration purposes, or the extraction of the DAFNE LINAC electron/positron beam (electron energy up to 700 MeV).*

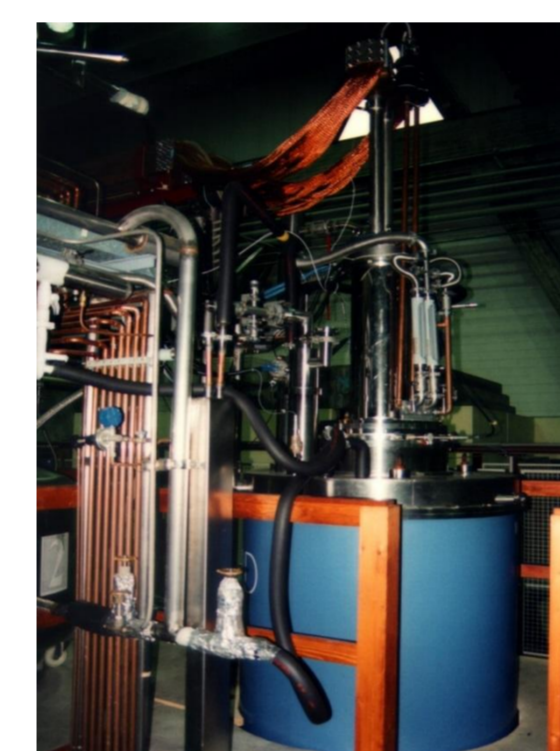
## Applied Superconductivity

Distributed large technical infrastructure for applied superconductivity dedicated to developments and tests of superconducting magnets for accelerators and accelerating superconducting cavities. The infrastructure is located in four different sections and laboratories (Genova, Laboratori di Legnaro, Milano-LASA and Napoli-Salerno).



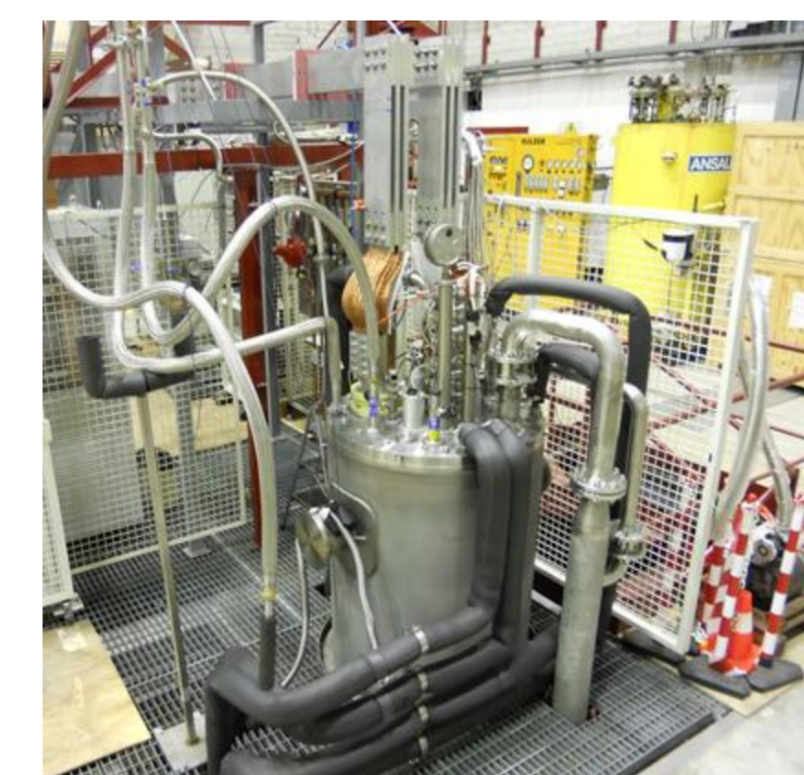
LASA- Milano Laboratory for Applied Superconductivity

*Facility equipped with a Helium Liquifier Linde TCF20, serving magnet and rf cavity test stations*



LASA- SOLEMI

*Facility with a large bore (535 mm) for testing superconducting cables and small magnets in a background magnetic field up to 13.5T*



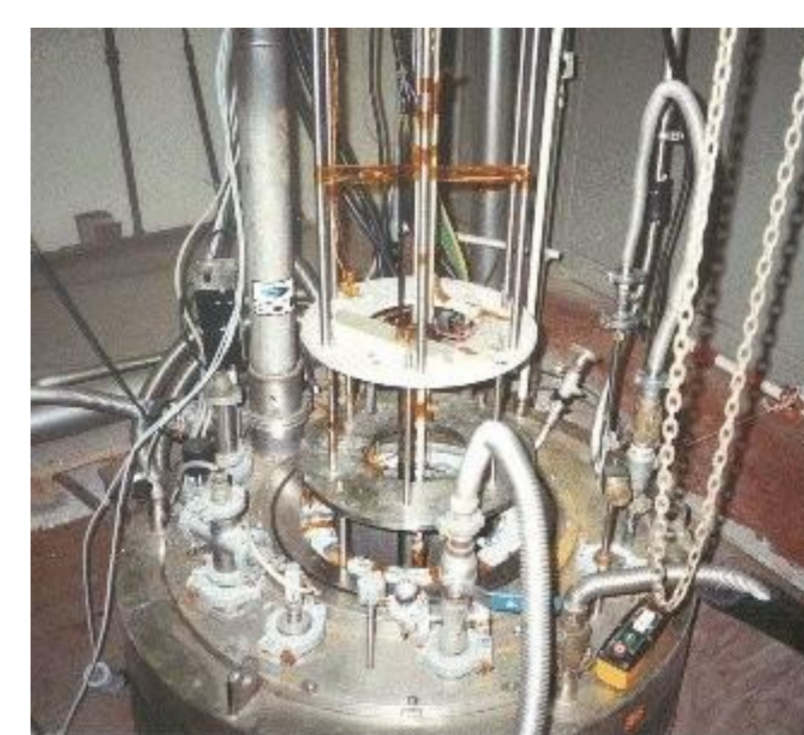
LASA- Magnet Test Station

*Vertical cryostat 690 mm diameter and 6500 mm height. Power supply up to 10kA. Magnet protection ancillaries (breaker, resistors and power circuit for 10 KA magnets)*



LASA- RF SC cavities Test Station and associated infrastructures

*Vertical cryostat 700 mm diameter and 5500 mm height. Test frequencies 700 MHz, 1.3 GHz and 3.9 GHz.*



Genova- Ma.Ri.Sa.

*Facility for testing superconducting cable up to 8T in a bore up to 440 mm and current up to 100 kA with a transformer method. The facility is equipped with a Helium Liquifier TCF20*



Salerno- Magnet Test facility

*Facility for testing superconducting magnets in horizontal cryostats (up to 8 m length) with supercritical helium. The facility is equipped with a Helium Refrigerator Linde LR280 and a Power Converter for 20 kA.*



Laboratori di Legnaro - Large cryogenic facility

*Mainly used for cooling the LNL superconducting accelerator, the facility includes two refrigerators (1100 W and 450 W at 4.5 K) and a Linde TCF 20 Liquifier allowing testing of superconducting rf cavities.*