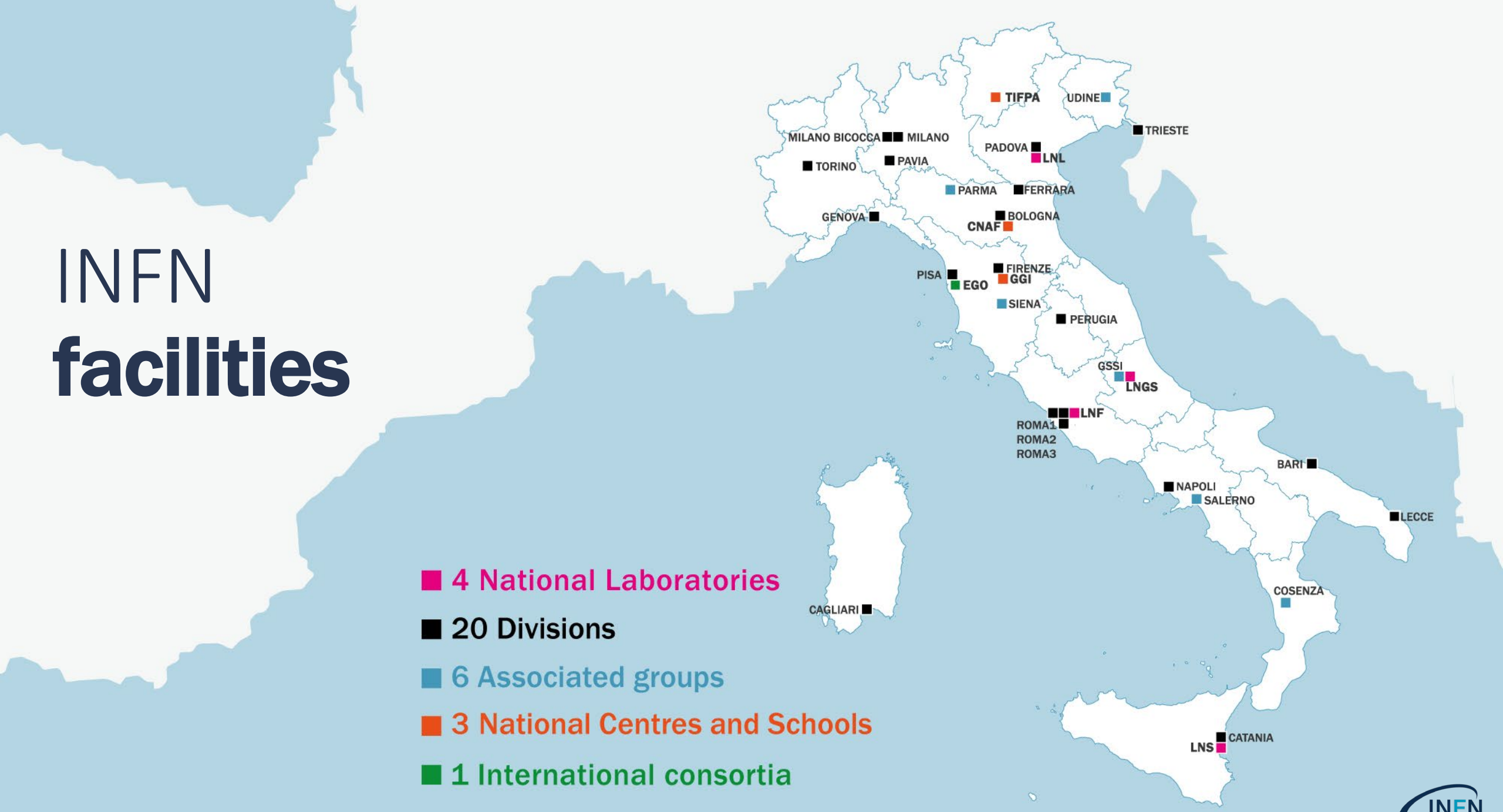
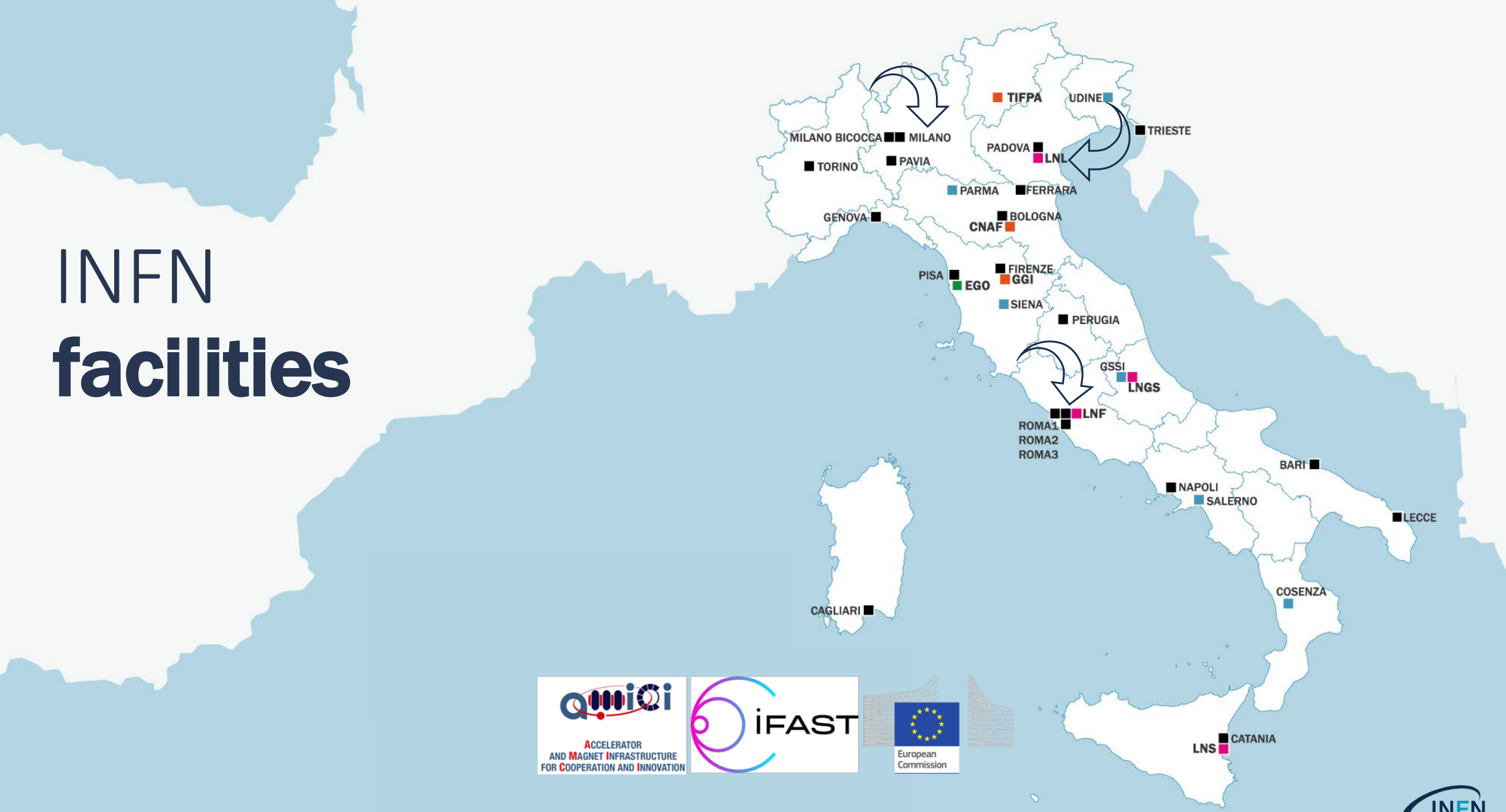
INFN **facilities**



INFN **facilities**




INFN
LASA
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SCHIO ITALIA
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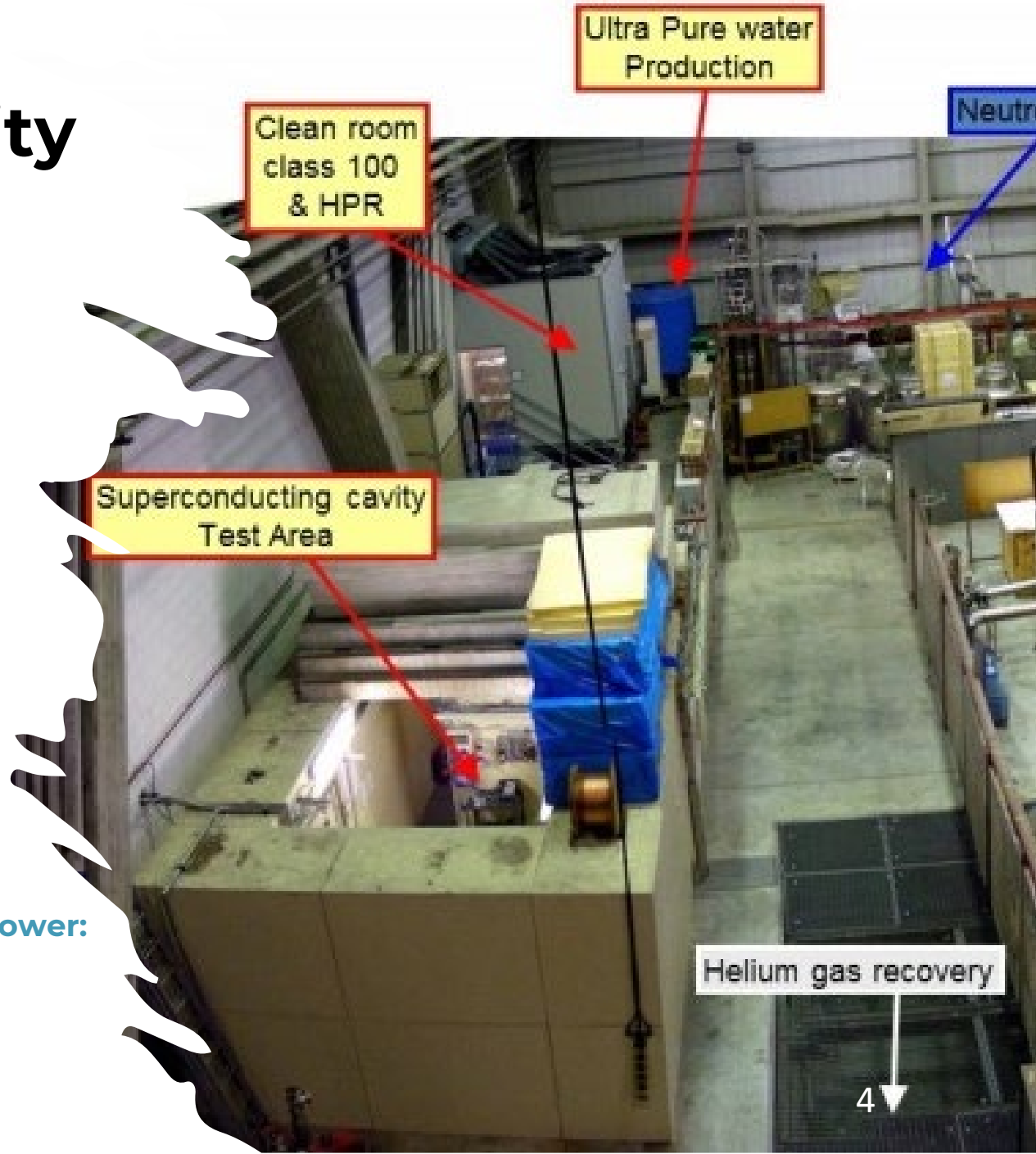
Chemical Treatments Facility

1. Clean Room ISO4 Class (standard ISO-16644-1)
2. Surface available: 9 m^2
3. Ultra-pure water Rinsing (18 MΩ cm, filtered at 20 nm, at 100 bar pressure)



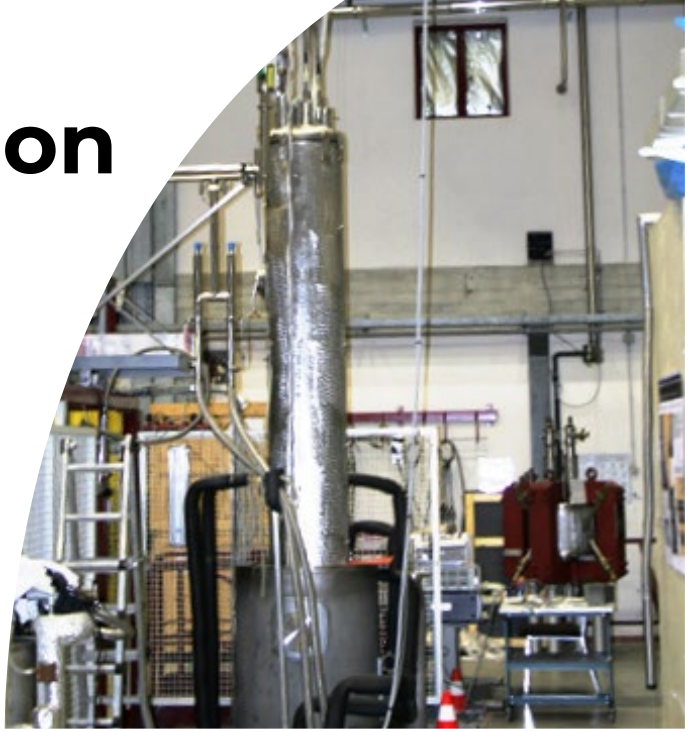
RF measurement Facility

RF cavities test bench with amplifiers frequency ranges and power:

1. 500-800 MHz (650 W)
2. 3 GHz (100W)
3. 9 GHz (200 W)

Magnets Vertical Test Station

1. Can accommodate magnets up to 700 mm dia x 6500 mm in length maximum weight 10 ton (Soon will be integrated by a 515 mm dia x 3300 mm vertical cryostat for medium-size magnets/samples)
2. Max operating pressure 4.5 bar Thermal shield cooled by LN or evaporated GHe
3. Variable temperature for High Temperature Superconducting magnets tests is foreseen



LASA Contact Person:
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Outgassing
Characterization Facility

1. High Out. Chamber 200mm x 200mm (ϕxH)
2. Low Out. Chamber 250mm x 500mm (ϕxH)
3. RGA 200 amu
4. Based on Throughput Method
5. Remotely Controlled

HIGH Vacuum Furnace

1. Ultimate Pressure <10-6 mbar
2. Operating Pressure 10-1/10-4 mbar
3. Temperature Max 1230 ° C
4. Operative Temperature 1200 ° C
5. Chamber ϕ 400 mm
6. Chamber H 1300 mm

LNF Contact Person: andrea.liedl@lnf.infn.it


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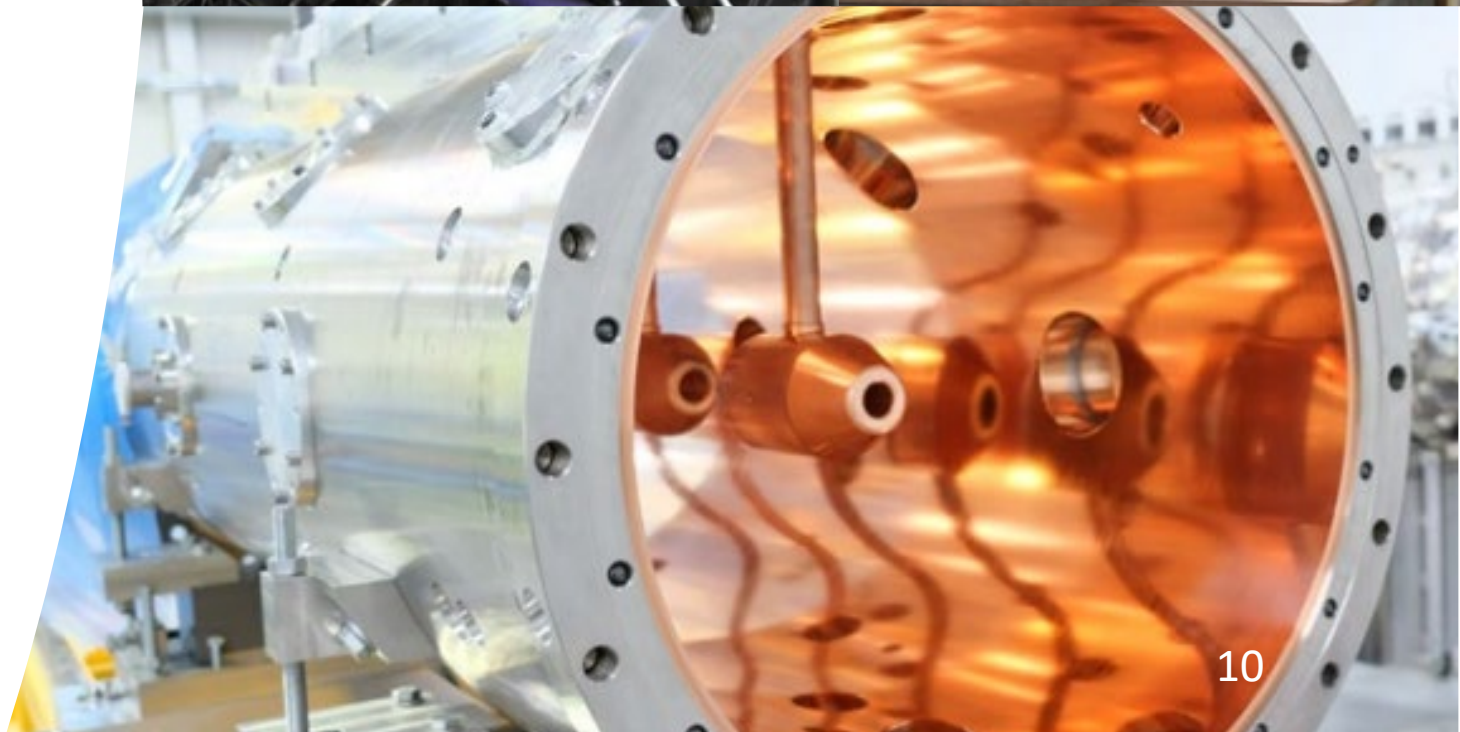
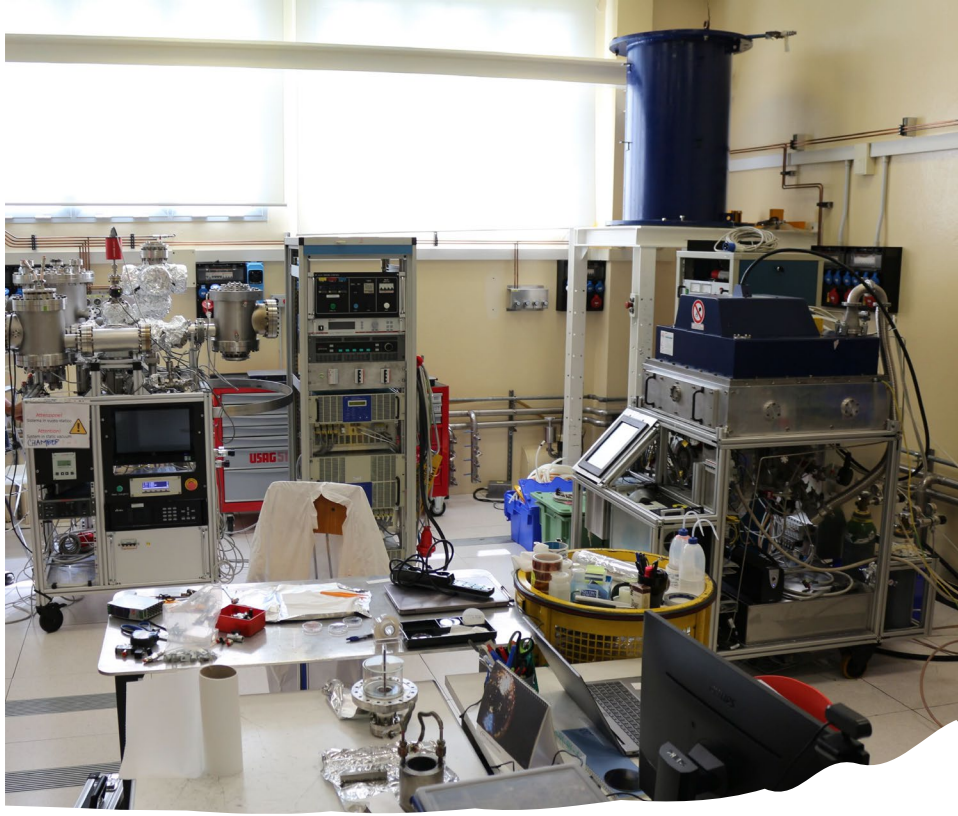
HIGH Vacuum Furnace

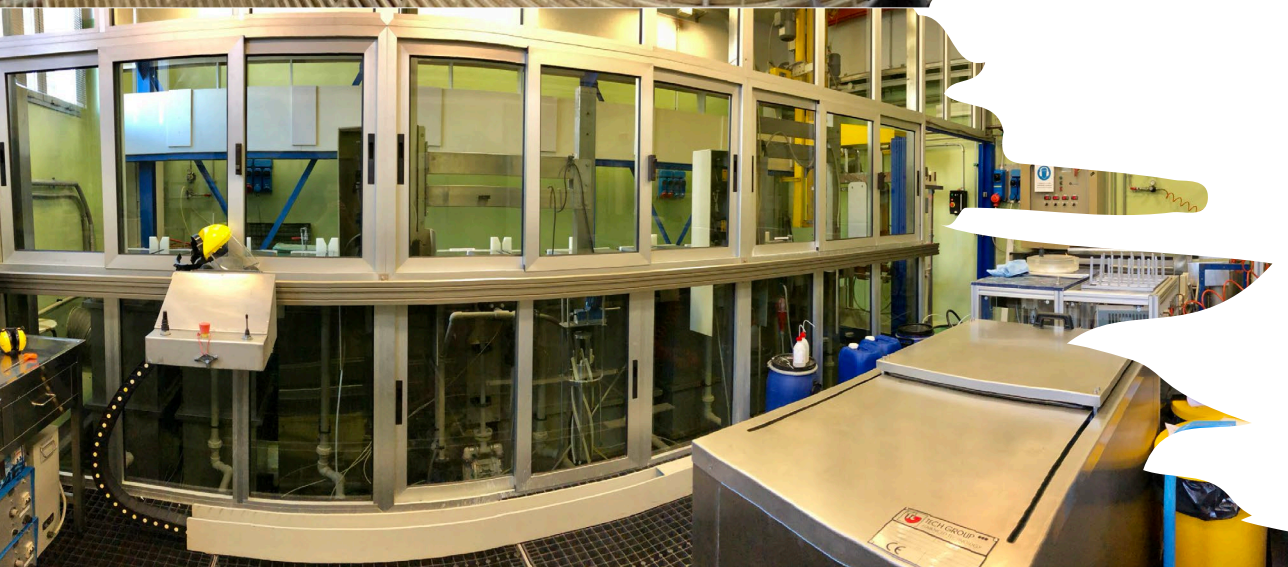
1.	Ultimate Pressure	<10-7 mbar
2.	Operating Pressure	5×10-5÷1×10-6 mbar
3.	Temperature Max	1300 ° C
4.	Operative Temperature	1200 ° C
5.	Chamber ϕ	1300 mm
6.	Chamber H	2100 mm (with extension)
7.	Maximum mass	1000 kg

HIGH Vacuum Furnace

1. ESS Drift tube
2. IFMIF accelerator



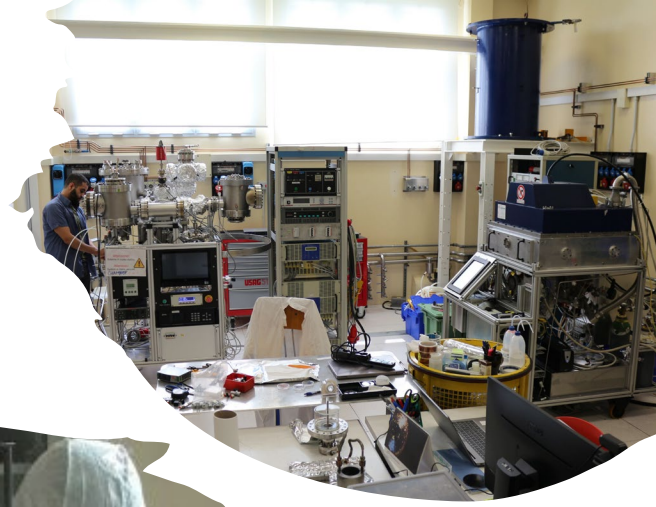




Surface Treatments
Facilities

Chemical Treatments Facility

1. The main activities that can be performed are: preparation of surfaces for UHV systems assembly (ultrasonic degreasing, deoxidation, drying with solvents);
2. surface preparation of components for subsequent braze welding in a high vacuum furnace;
3. chemical and electrochemical polishing of the surface of copper and niobium components (resonant cavities, cryostats, detectors);
4. treatments of low-melting alloys;
5. studies of alternative chemical treatments;
6. supply of ultrapure deionized water, ultra-cleaning of copper components from radioactive contaminants.
7. The LNL chemistry laboratory is equipped with a semi-automatic facility, to perform different processes as washing, degreasing, chemical and electrochemical treatments and passivation, necessary for the surface finishing of QWR before the thin film coating.

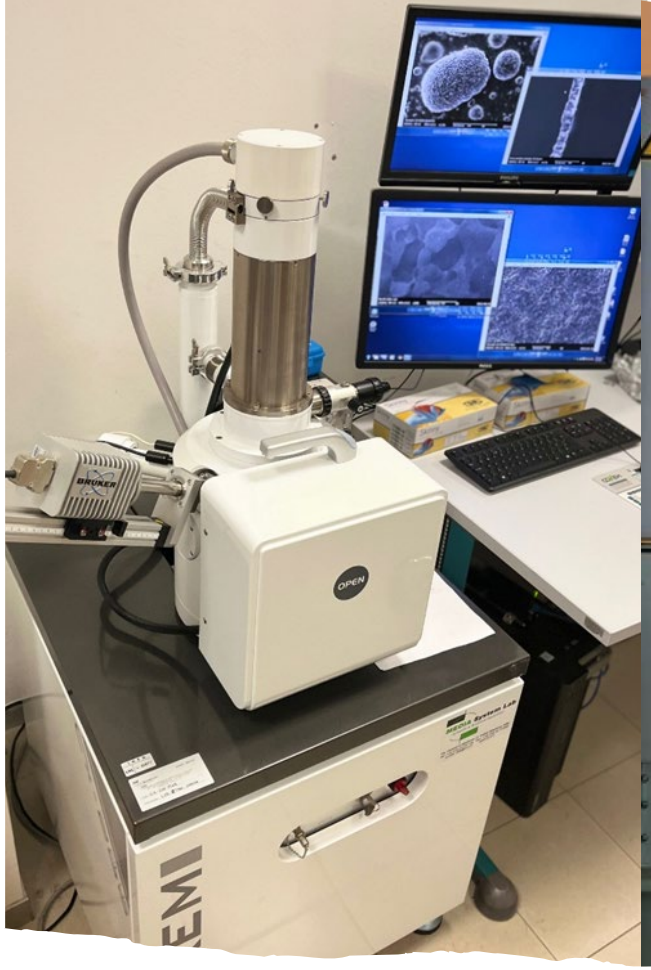


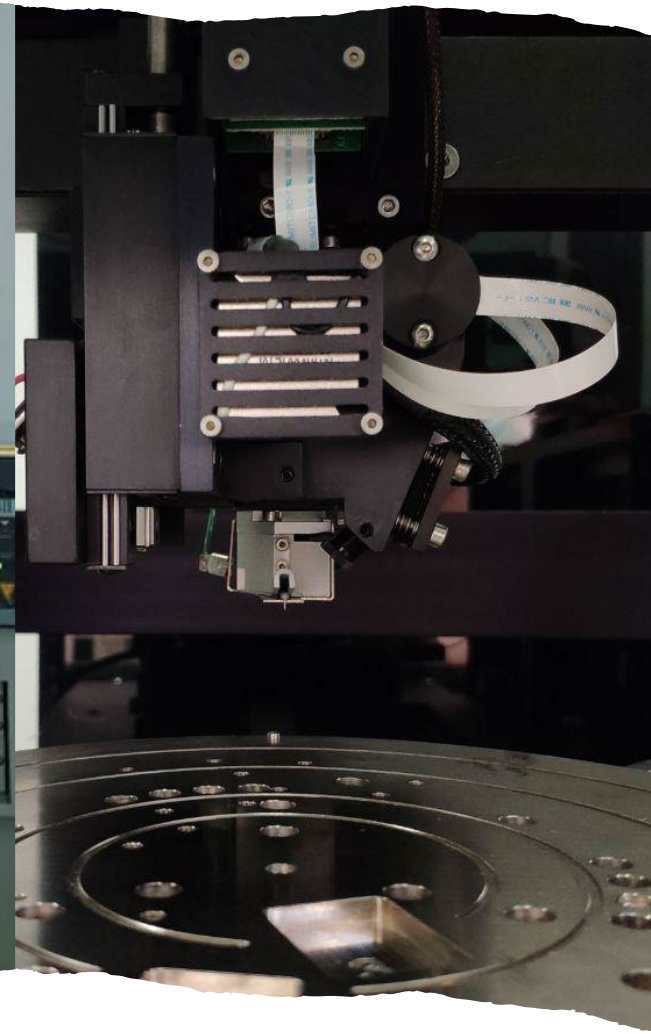
Chemical Treatments Facility

1. ISO 5 class clean room is available for cavity assembly or small components packaging

Thin film Coatings Facility

1. ISO 4 class clean room is available for PVD and PECVD small components deposition

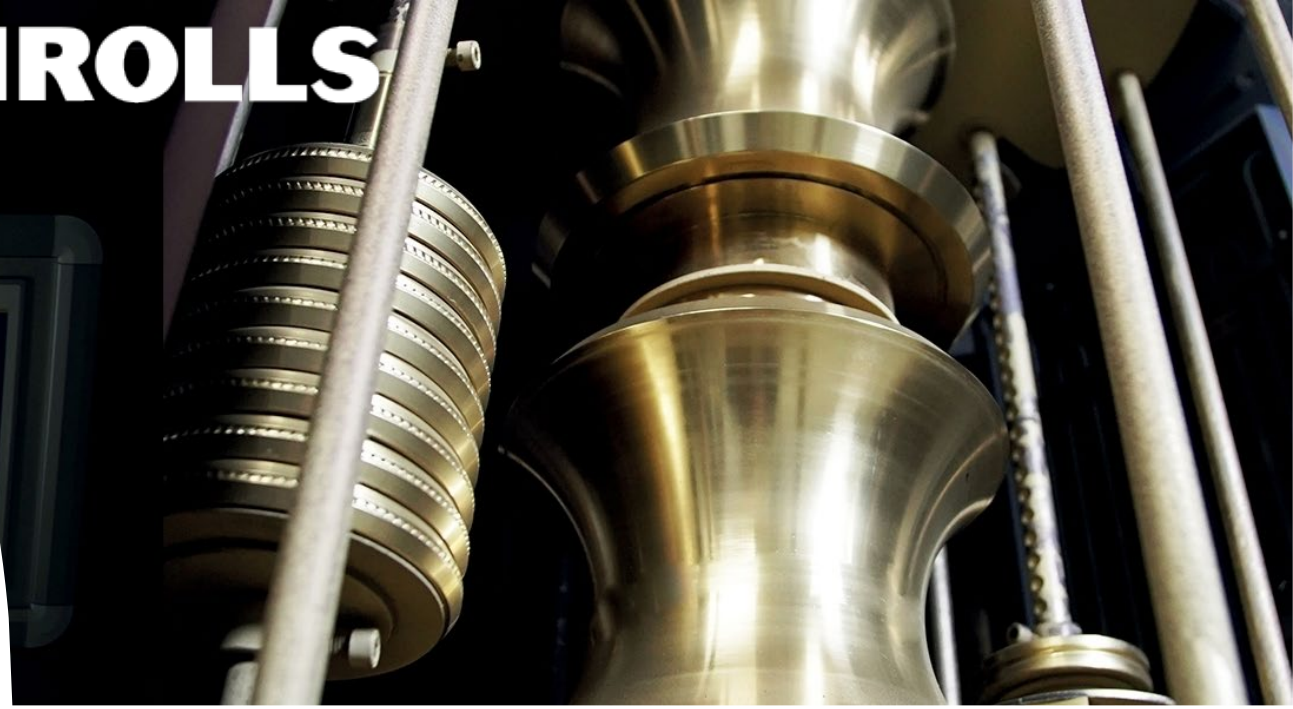




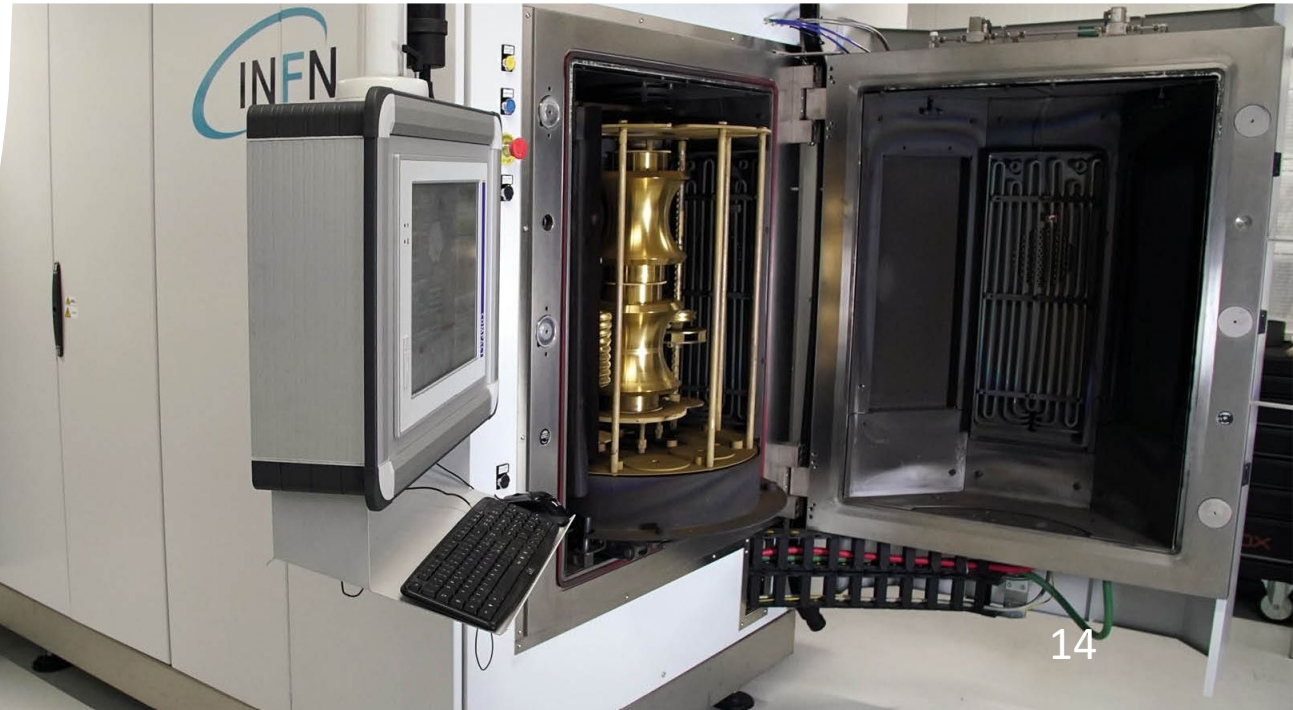
Characterization Facility

1. Diffractometer for powder analysis, thin film analysis and equipped with Eulerian cradle.
2. Profilometer for surface topography analysis and roughness quantification.
3. Optical microscope
4. Scanning Electron Microscope (SEM) and Energy-dispersive X-ray spectroscopy (EDX)

Technology Transfer



1. Through the collaboration with INFN, Eurolls gained access to the expertise and the PVD lab at INFN-LNL premises.
2. This techniques is suitable to coat the Wire and Tube Rolls and can provide a wide range of different hard coatings.
3. INFN provides to Eurolls a PVD coating prototype and a study on hard coatings to apply on the Wire and Tube Rolls improving their lifetime.
4. INFN acquired the know how on hard coatings deposited via PVD techniques.



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Thank you for the Attention