



Superconductivity for
Sustainable Energy Systems
and Particle Accelerators



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IRIS & THOR: Salerno INFN infrastructures for superconducting applications

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The capability of managing superconducting devices for research large applications as well as for societal applications is tightly connected to the availability of cryogenic infrastructures and competencies. In this framework in 2015 we realized the NAFASSY program for infrastructural strengthening, which then gave rise in 2019 to the THOR cooperation with GSI/FAIR. Although we are at the very beginning, we demonstrated the ability to set and run a test facility for performing SAT of the SIS100 quadrupole modules. The test facility is now setting up a second test line to improve performances.

More recently, the Innovative Research Infrastructure on applied Superconductivity (IRIS) program set here a strong empowering on superconductive applications for societal applications. Within IRIS the University of Salerno, INFN, and CNR-SPIN take the responsibility to install a new test facility able to check performances of a superconducting high voltage DC power transmission line (up to 1 GW), and in general to become part of the distributed national network in the field of superconducting magnets. The new infrastructure, hosted in the University of Salerno campus, will be close to the THOR laboratory to efficiently share resources. In fact, this activity will enforce the existing laboratory with new dedicated facility, falling in the new “green” line energy, one of the most promising societal applications of superconductivity. Obviously, the whole area could also become a cryogenic reference facility in the south of Italy.

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