


The Paul Scherrer Institute PSI is the largest research institute for natural and engineering sciences within Switzerland. We perform cutting-edge research in the fields of future technologies, energy and climate, health innovation and fundamentals of nature. By performing fundamental and applied research, we work on sustainable solutions for major challenges facing society, science and economy. PSI is committed to the training of future generations. Therefore, about one quarter of our staff are post-docs, post-graduates or apprentices. Altogether, PSI employs 2300 people.

For the PSI Center for Accelerator Science and Engineering we are looking for a

Trainee in transient effects on HTS magnets for energetically efficient accelerators

24.11.2025 • Internship • 8431-25690 • 100% 

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Your tasks

In the framework of the SMILE initiative (Superconducting Magnets to Improve Large Research Facilities Efficiency), which promotes the transition towards more sustainable and energy-efficient accelerators, low power consumption magnets are being developed. SMILE adopts a multidimensional approach, addressing not only the design and integration of High-Temperature Superconducting (HTS) magnets in PSI accelerators but also their energy efficiency, dynamic performance, and resilience to radiation.

One key focus of this R&D program is to improve our understanding of HTS conductors and coils operating under time-varying magnetic fields, particularly regarding radiation effects, transient phenomena, and cryocooler-based cooling techniques that enable cryogen-free operation.

The objective of this internship is to contribute to this effort by providing valuable insights into the transient behavior of a low-loss HTS cable. The work will include construction of a sub-scale demonstrator, its testing in the PSI Magnet Section's cryogenic facility, and the evaluation of AC losses when the system operates in non-DC modes.

Through these activities, you will experience all stages of an experimental project—from concept development and hardware preparation to data acquisition and analysis—while working in close collaboration with several interdisciplinary teams within PSI. This internship offers a unique opportunity to gain hands-on experience in applied superconductivity and contribute to the development of optimal HTS conductor architectures that meet the technical and sustainability challenges of future PSI research instrument.

Your profile

- You are a student in engineering or physics, and you are at least in your first year of the Master degree
- You have experience in matlab and data analysis
- You have an interest in practical laboratory work and instrumentation
- You have not yet completed your Master's thesis

We offer

Our institution is based on an interdisciplinary, innovative and dynamic collaboration.

The contract will be limited to 3 months, preferably starting in September 2026.

For further information, please contact Dr Rebecca Riccioli, phone +41 56 310 47 08.

Please submit your application **online** for the position as a trainee (index no. 8431-25690).

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