



INTERNSHIP OFFER

Ref. No. CH-2024-000029

Internship Host Information

Internship Host: Paul Scherrer Institut

Website: www.psi.ch

Forschungsstrasse 111

Location of placement: 5232 Villigen

5232 Villigen PSI
Switzerland

Nearest airport: Zurich

Working hours per week: 41.0

Working hours per day: 8.2

Number of employees: 2200

Business or products: Research

Student Required

General Discipline: ENGINEERING, Other;PHYSICS

Completed years of study: 2

Field of Study: .Engineering Physics/Applied Physics.;Physics,
General.

Student status requirements: Enrolled during internship; with EU/EFTA
passport also possible between BSc and MSc

Language required: English Good (B1, B2)

Required Qualifications and Skills:

Other requirements:

Student in Physics or Applied Physics/Particle Physics/Accelerator Physics

Programming: C++ and/or MATLAB and/or PYTHON and/or ROOT

Knowledge of basic statistical tools used for data analysis

Internship Offered

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 2200 people.

Project: Commissioning of new Sub-micrometer and minimal invasive Wire Scanners for on-line beam monitoring at SwissFEL

Characterizing and monitoring low and ultralow-emittance and sub-micrometer transverse size electron beams is highly demanded by Free Electron Laser (FEL) developments and advanced acceleration concepts under study in several facilities.

In this view, the electron-beam diagnostic group of SwissFEL and the Laboratory of Nano and Quantum technologies (LNQ) at the Paul Scherrer Institut are pursuing the development of an innovative nano-fabricated and sub-micrometer spatial resolution Wire Scanner (WS). At SwissFEL, its minimal invasive design will open the possibility of monitoring transverse profile and emittance of the linac beam during standard lasing operation. Few prototypes of nano-fabricated WSs are already installed in the SwissFEL linac and a new generation of nano-WS will be installed in the next months.

You will take part in the on-beam commissioning of the new prototypes during dedicated machine time.

The primary goal of the traineeship will be the analysis of the experimental data aiming to assess the WSs spatial resolution performance and invasiveness.

In particular, you will focus on the SwissFEL WS stations devoted to the emittance measurement. In this framework, you will help designing and implementing the preliminary analysis tool needed to measure the emittance from the beam transverse profiles acquired using these WSs.

Number of weeks offered: 12 - 13

Working environment: Research and development

Within the months: 01-SEP-2024 - 20-DEC-2024

Gross pay: 2100 CHF / Month

Or within: -

Deduction to be expected: approx. 10 % Social security AHV/IV

Company closed within: -

*Payment method / time of first /
payment:*

Latest possible start date:

Accommodation

Canteen at work: Yes

Expected type of accommodation: Guest house

Estimated cost of lodging: 900 CHF / Month

Accommodation will be arranged by: Employer

Estimated cost of living incl. lodging: 1750 CHF / Month

Additional Information

Students with any NON-EU/EFTA nationality need for the visa and work permit an official letter from their university, confirming that the internship is compulsory (IAESTE Switzerland will apply for them).

Nomination Information

Deadline for nomination: 05-MAY-2024

Date: 18-APR-2024

On behalf of receiving country:

IAESTE Switzerland