

Join Grid2050 – Develop Measurement Pipeline for Live Grid Infrastructure

Research Assistant (flexible, 50-100 %) | School of Engineering and Environment, FHNW

About the project

As part of Grid2050 initiative of the NCCR Automation initiative, we are deploying a research-grade data logging infrastructure on the large-scale batteries in Walenstadt. The goal is to capture high-frequency, multi-point electrical measurements that today's installed devices simply cannot provide, and use them to build a high-fidelity digital twin of the grid. The work is carried out in close collaboration with METAS, Switzerland's national metrology institute, and industry partners operating the Walenstadt battery systems.



Grid-scale batteries in Walenstadt. Picture credit: 49komma8 AG

Position Overview

We are looking for a full-time Research Assistant (MSc level) to develop this infrastructure end-to-end from requirements to field deployment. You will design, procure, install, and validate hardware and software at a live medium-voltage grid node.

System Architecture & Procurement: Define measurement points, sensor specifications (voltage dividers, current probes, waveform recorders), sampling rates, and synchronization methods.

Field Deployment & Integration: Assemble and install data acquisition systems on-site. Implement industrial communication protocols (IEC 61850, Modbus, custom APIs) and validate data integrity, synchronization accuracy, and temporal alignment.

Signal Processing & Data Pipeline: Develop offline processing workflows for current and voltage waveforms. Integrate high-resolution measurements into the existing Grid2050 database.

Digital Twin Calibration: Use the acquired data to improve parameter tuning and calibration of the Grid2050 Walenstadt simulation environment, advancing it toward a high-fidelity digital twin suitable for controller design and validation.

What's in it for you?

A rare opportunity to work at the intersection of power systems, embedded instrumentation, and data engineering on real critical infrastructure. You will collaborate with the Grid2050 team, metrology

experts at METAS, and industry partners on a project that forms the measurement backbone for future research in system identification, data-driven control, and predictive maintenance. Employment with FHNW, competitive remuneration, and flexible working conditions.

We are looking for?

A recent MSc graduate in electrical engineering, automation systems, or a related field, with:

- Hands-on experience with data acquisition hardware, embedded signal processing, or industrial communication protocols
- Familiarity with power systems or grid infrastructure (a strong advantage)
- Comfort working independently in field environments and across academic–industry boundaries
- Strong documentation and communication skills
- Fluency in both German and English

Duration: July 2026 – December 2026 (6 months), with possible extension to a second phase.

Apply by May 31, 2026: send your CV and short motivation to Prof. Dr. Silvia Mastellone at silvia.mastellone@fhnw.ch

Key Contacts

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