SABRINA EPPENSTEINER



applied & computational physics · msc physics student, university of innsbruck

Computation and lab work in equal parts: **DFT and simulation on one side, circuit design, prototyping and measurement on the other** — with five years of formal training in technical drawing behind how I present results.

eppensteinersabrina@gmail.com · sabrinaeppensteiner.com · linkedin
innsbruck, austria · german native, english proficient

looking for	**Six-month R&D internship combined with a master's thesis** in medical technology
focus	Electrodes, transducers, measurement automation. Roughly half simulation, half lab
available	From February 2027, full-time, six months (or longer) - based in Innsbruck

PROJECTS

design · simulate · build · measure

Precision current driver for a 450 nm diode laser

personal project · 2025–2026 · ltspice · perfboard · lab measurement

- Designed a **constant current driver** for a laser diode whose resistance falls as it increases its temperature.
- Simulated the control loop in **LTspice** and checked turn on overshoot against the diode's tolerance before building.
- Hand-soldered the circuit on perfboard, heatsink mounted the diode, then **tuned and verified the output current in the lab.** Built and in use.

EXPERIENCE

jul – sep 2026

VDSP Summer Internship — Computational Electron Microscopy

University of Vienna

Contributed to **abTEM**, the opensource package for simulating electron microscopy images, implementing **VASP** as a source of electrostatic potentials. Benchmarked the pipeline on hBN, $SrTiO_3$ and MoS_2, chosen because they scatter very differently.

jul – sep 2024

Internship, Energy Solutions

Innio Jenbacher

Analysed and documented software processes across engineering and product development, and documented previously undocumented steps.

jul – aug 2023

Internship, Institute for Ion and Plasma Physics

University of Innsbruck

Hands-on work in an experimental group: Helping with measurement setups and data acquisition in an experimental group.

since jan 2020

Blood Donation Service

Austrian Red Cross

Maintaining donor databases and guiding first time donors: six years of keeping records exact in a medical setting and briefing first-time donors.

EDUCATION

since feb 2026

MSc Physics

University of Innsbruck

Focus on Ion and Applied Physics. Coursework in **automated measurement systems (LabVIEW)** and **physics of medical imaging (MRI/CT)**.

sep 2021 – feb 2026

BSc Physics

University of Innsbruck

> bachelor thesis · quantum chemistry
>
> **Catalytic mechanisms of indium-oxide clusters for methanol synthesis**
>
> DFT study of CO_2 and H_2 activation on In_2O_3 clusters: Calculated adsorption sites, reaction pathways and activation energy for each reaction step.

Alongside the degree: extracurricular courses in physical chemistry at the Institute of Chemistry.

sep 2016 – jun 2021

HTL Construction and Design

Focus: graphic design and communication

Five years of technical drawing and visual communication, completed with the Austrian Reife- und Diplomprüfung.

SKILLS

simulation	**VASP**, **Gaussian**, **LTspice**, abTEM, Chemcraft, Molden, VESTA · density functional theory, electronic structure, circuit simulation
lab & hardware	Circuit prototyping and soldering, measurement setup and calibration, laser diode handling and laser safety, heat management, composite fabrication
code & data	**Python** (data analysis, plotting, scripting), LabVIEW, MATLAB, Excel, HTML/CSS
documentation	Scientific writing (lab reports, thesis), process documentation, technical drawing, scientific figures and posters, Adobe Creative Suite
languages	**German** native · **English** proficient (working language)

VOLUNTARY WORK

2022 – 2024

Campus Tirol Motorsport

Formula Student team, Innsbruck

Built aerodynamic components for the team's car: Planning and building the carbon endplates for the Aeris car.

weekly

Fitness instructor for seniors

Strength classes

Planning and instructing weekly strength classes for a group with different fitness levels.