FALL–WINTER 2026–2027

STUDENT PROJECT PROPOSALS

HARDWARE DESIGN PROJECTS

VERSATILE SMART GATE DRIVER CIRCUIT FOR HIGH-POWER SIC SEMICONDUCTORS

Motivations: We would like to develop and qualify a versatile gate driver circuit for high-power semiconductor modules.

Objectives: Design a complete gate driver, including the power supply circuit, for a 3.3kV/700A SiC power module using NXP's GD3160 chip. Implement a full double-pulse test campaign to validate the driver's operation as well as its smart protection and device monitoring features.

Skills: Prior experience with PCB design is desired. Some knowledge in semiconductor physics is also recommended.

HIGH-BANDWIDTH HIGH-CURRENT HYBRID SENSOR

Motivations: Depending on the underlying technology, current sensors perform differently with respect to bandwidth, common-mode rejection, and measuring range (ratings). Roughly speaking, no technology can simultaneously support high currents (typ. > 200A) while offering high bandwidth (typ. >2MHz).

Objectives: Develop a high-current, high-bandwidth hybrid current sensor combining two technologies (e.g Hall-effect, plus a suitable HF circuit) supporting high-current applications (typ. > 500A). Test and validate in real-world applications.

Skills: Prior experience in both power electronics and PCB design is highly desired.

YOUR PROFILE

An internship with us will suit you if:

- You are a PhD, MSc, or BSc student.
- You are looking for a 3-to-9 months on-site internship in Sion, Switzerland.
- You are seeking to work in a dynamic, fast-paced environment.
- You are self-motivated and capable of working both individually and as part of a team.
- You expect attentive supervision of your work from highly qualified engineers.
- You are looking for a position that values and makes room for your initiatives.
- You appreciate a young and friendly environment that is also serious and professional.

If you are interested in doing an internship with us, please send your CV along with a cover letter explaining your motivations and what you would bring to the team. Email correspondence should be addressed to jobs@imperix.ch. We reserve the right to maintain correspondence only with profiles that reasonably match the position requirements.

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ABOUT US

Imperix is a leading global provider of high-performance control solutions and rapid prototyping hardware engineered specifically for power electronics. Founded in 2013 as a spin-off from the Swiss Federal Institute of Technology (EPFL), the company accelerates innovation by bridging the gap between numerical simulation and physical implementation.

At the core of the Imperix ecosystem is the flagship B-Box controller family, which unites robust digital processing, the intuitive Cockpit software, and automated code generation from Simulink and PLECS. These control development solutions are complemented by a comprehensive hardware portfolio encompassing modular power stages, high-fidelity sensors, fully integrated inverters, as well as hardware and software interfaces for real-time HIL/PHIL simulation. Together, these tools empower top-tier industrial and academic R&D teams to safely test advanced control algorithms on real hardware within minutes, drastically reducing time-to-market and time-to-publication.

Headquartered in Sion, Switzerland, Imperix serves a prestigious client base across more than 50 countries. By delivering specialized, modular tools for power conversion, smart grids, motor drives, electric mobility, and energy storage, Imperix stands at the forefront of the technology enabling the global energy transition.