

Master's thesis positions (paid) – UPS with hydrogen fuel cells as a power source



Traditionally UPS units have a battery energy storage suitable for 10-30 minutes of runtime for critical load. Longer interruptions are supported by diesel generators. We are now investigating if hydrogen fuel cells can be used as a replacement for diesel generators to enable transition away from fossil fuels.

Eaton is offering two paid MSc thesis positions to further study this subject:

1. System integration & electrical design of fuel cell powered UPS
 - Analysis of changes required to the hardware design of an UPS to enable the use of fuel cells as a backup source
 - Prototyping & lab testing of these changes
2. Control design & embedded software of fuel cell powered UPS
 - Analysis of changes required to the digital controls of an UPS firmware to enable the use of fuel cells as a backup source
 - Simulation & hardware-in-the-loop testing of these changes

What we are looking for:

- Students with focus on control systems or power electronics
- Interest in simulations and modelling of electrical systems
- Experience in programming is valued

What we are offering:

- 6-8 month paid thesis worker positions. Positions are full-time with possibility to flex around university obligations.
- Possibility to work remotely for at least some of the time. Our office and R&D laboratory are both based in Espoo (Koskelontie 13)
- Possibility to work on concrete solutions to real-world problems as part of an international R&D organization.

Carrying out your thesis work at Eaton will give you the opportunity to experience research, development and product design as part of a large international organization. Working in Eaton's R&D team, you will collaborate with and learn from Finland's leading UPS experts.

The thesis work will start as soon as a suitable thesis worker is found.

Please apply for this position in Eaton Jobs:

<https://jobs.eaton.com/jobs/139014>

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