

FACULTY MENTOR

Hanh-Phuc Le

PROJECT TITLE

Power Delivery for Motor Drive

PROJECT DESCRIPTION

In this project, we will investigate an advanced converter architecture with hardware demonstration for a new motor drive. The converter will likely involve a hybrid architecture to deliver a 3-phase inverter drive for DC motors. The project will first target low-power (10s W) commercial motors, but it can also be expanded to consider high-power (kW) motors.

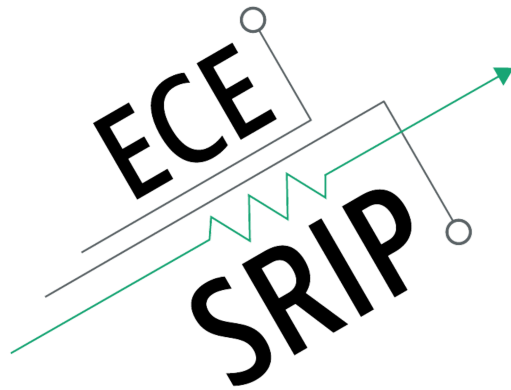
This project will be in person.

INTERNS NEEDED

1 Student

PREREQUISITES

- Power electronics class (ECE 125A) with a B+ grade
- Circuit class (ECE 102) with a B+ grade



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PROJECT TITLE

Stacked Transformer Power Converter for 48V POL Applications

PROJECT DESCRIPTION

This project investigates a new power converter architecture that can provide seamless control and regulation as well as isolation for 48V POL applications. The target output is 1-2 V with a current of up to 40A. In this project, the student is also expected to investigate and develop integrated planar transformers and inductors on PCB for the converter.

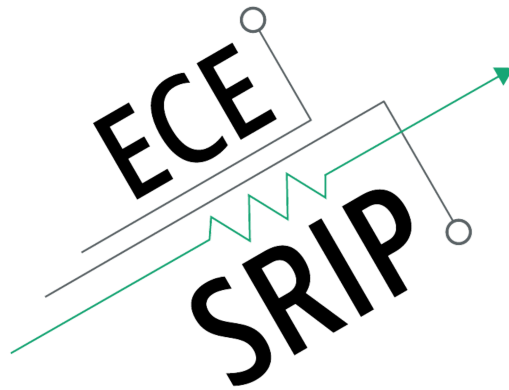
This project will be in person.

INTERNS NEEDED

1 Student

PREREQUISITES

- Power electronics class (ECE 125A) with a B+ grade
- Circuit class (ECE 102) with a B+ grade



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PROJECT TITLE

Integrated Wireless Power Transfer

PROJECT DESCRIPTION

This project targets a low-power implantable device that requires an efficient wireless power transfer. The wireless power transfer architecture will need to be designed in integrated circuits using Cadence Virtuoso, while the coupling mechanism can be discrete. The level of power is in the 1s-10s mW range.

This project will be in person.

INTERNS NEEDED

1 Student

PREREQUISITES

- Power Electronics class (ECE 125A) with a B+ grade
- Circuit class (ECE 102) with a B+ grade
- Analog Integrated Circuit Design class (ECE 164) with a B+ grade