Project Proposal: Self-powered Power Line Sensor

EE Faculty Advisor(s): Arash Nejadpak,
Partners: Electrical Engineering Department
Type of the project: New

Objectives:
• Design of battery charging system using residual flux and solar.
• Precise measurement of voltage and current amplitude,
• Wireless data transmission, (RF, TCP/IP)

Milestones and Timelines:
This project is divided into three sections which have to be focused in parallel:
1- Battery charging system,
2- Electronic and measurement circuit designs,
3- Data transmission,

Student Assignments: (max 3 EE and 3 non-EE):
1. EE Student, Residuals flux and battery charging system
2. EE Student, Measurement circuit design
3. EE Student, Data transmission

Background:
Requires knowledge about battery charging systems,
Electronic circuit design,
Magnetic sensors,

Methods and Materials:
Augments Smart Wire with additional sensors and a wireless sensor network. Transmit information about the line current and voltages and power factor,

Cost:
Cost of the project can be varied from 300 - 1500$ dependent on the complexity of the prototype.

Point of Contact:
Arash Nejadpak, Assistant Professor
University of North Dakota
Upson Hall 2 - Room 160, Email: arash.nejadpak@engr.und.edu