

**ECET/CPET 491 Senior Design Project Phase II  
Fall 2017**

**Sample Abstracts**

**Solar Mini-Blind with DC-DC Converters for 5V Charging Applications**, By Joshua Stetzel, CPET 491 Senior Design Project II, May 5, 2017

**Abstract:** A solar power charging system consisting of solar cells mounted on a mini-blind with DC-to-DC converters and super capacitor storage with voltage regulation circuit was designed and tested for 5V charging applications such as smartphones or any USB powered devices.

**Oxygen Enrichment System for Copper Refining Process**, by Blake Herb, ECET 491 Senior Design Project II, May 5, 2017

**Abstract:** A PLC-based Oxygen enrichment system to improve process efficiency of a copper refining facility was designed and tested. Major components of the system include a PLC, and flowmeter, pressure transmitter, oxygen sensor, solenoid valves, and control valves.

**PLC-Based Automating Bracket Crimper and Resistance Tester for Gas Igniters**, by Daniel Howard, ECET 491 Senior Design Project II, May 5, 2017

**Abstract:** An operator-friendly machine for crimping brackets on the gas ignitor and performing resistance measurement is designed and tested. Major components include PLC, solenoids, pneumatic cylinders, FC-P3 (potentiometer input, analog output conditioner), and PLC software for automated sensing and sequence control functions.

**2.4GHz Wireless Transmitter/Receiver for Audio System**, by Clint Thompson, ECET 491 Senior Design Project II, May 5, 2017

**Abstract:** A 2.4 GHz Wireless Transmitter/Receiver for audio system application includes Arduino microcontrollers, wireless transceivers, low-pass filter, class D audio amplifier, and a speaker (less than 3 watts).

**Sample Executive Summaries**