Feeback Controller for Plasma Transfer Arc Additive Manufacturing

PROJECT DESCRIPTION

"The project involves adapting a z-axis positioning system to a Plasma Transfer Arc Additive Manufacturing (PTA-AM) torch. Software integration must be implemented to add the new axis to a previously X & Y Axis controller. Mechanical setup for the new axis is required. Motor and slider mechanical characterization has to be implemented. Positioning controller is required.

Required skills/background:

The ideal student would have the following attributes:

- Background in Mechatronics, electronics, or computer engineering. Other disciplines may be considered based on the relevance of the experience.
- Mechanical Assembly Skills.
- Conversational skills for quoting parts.
- Programming skills: python, C++, LabVIEW.
- Engineering Control Skills.
- Real-Time Systems.

Expected student participation:

The student will work closely with the supervisor and a graduate student for developing the system described. The student will be supervised and assigned tasks related to computer aided design and development for the vision system. The major tasks include the hardware development and the software development. The hardware development will comprise, design of in house components for the z-axis controller system and their integration with commercial off the shelf parts for system integration. The software aspect will comprise the design and programming of algorithms for data acquisition from the hardware and analysis of the acquired data for process optimisation. "

FACULTY-DEPARTMENT

Engineering – Mechanical

Contact: Brendan Cavanagh, Internship Coordinator (Inbound)
University of Alberta International
intern@ualberta.ca

DESIRED FIELD OF (STUDENT) STUDY

Mechanical, Mechatronics or Electronics Engineering

INTERNSHIP LOCATION

University of Alberta Main Campus - Edmonton

NUMBER OF INTERNSHIP POSITIONS

1

INTERNSHIP START DATE

July 4, 2018

INTERNSHIP END DATE

3 months after start date

ARE THE DATES FLEXIBLE?

Yes, I am flexible regarding the internship dates. Selected students can contact me to request a date change.

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