Project Title: Plasma Plume Characterization and Process Monitoring

Project Reference Code: Renfro-PlasmaProcesses

Name of Project Leader: Michael Renfro

Host Facility: Plasma Processes

Internship Location: Plasma Processes

Host Facility Location: 4914 Moores Mill Rd. 35811, Huntsville, AL.

Project Description (roughly 300 words):
Plasma Processes is a leader in high-performing material solutions for products in extreme environments. Capture and interpret data from one of our advanced coating plasma spray processes with in-line monitor sensors to measure, the plasma plume temperature, velocity, dimension, orientation, intensity and stability. Characterization of the plume, and feedstock within to determine optimal parameters. Conduct mechanical testing and research thermal spray coatings. Complete metallurgy to relate plume characteristics to deposited plasma spray coating quality.

Importance:
Relevance and importance of the topic, global examples, local examples.

Requirements:

- Preferred Major
  - Any STEM major.
- Class work
  - N/A.
- Programming knowledge
  - N/A.
- Software knowledge
  - N/A.
- Other

Biography (roughly 100-150 words):
Mr. Renfro is a materials engineer for Plasma Processes LLC (2009). He has a Bachelor of Science degree in Materials Engineering from the University of Alabama at Birmingham (2006). His work experience includes failure analysis, experimental design, microstructural and powder characterization/analysis via advanced microscopy. His research efforts developed relationships among the different alloys, processing parameters, and physical and microstructural characteristics. He has helped to develop many analysis procedures and devised protocols to assess performance and characteristics of various metallic, ceramic, polymeric and composite materials.

Is U.S. citizenship required to participate in this project? Yes.

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