

Abstract Submittal Form

JANNAF

Liquid Propulsion Subcommittee and Advanced Materials Panel
Technical Interchange Meeting
3 – 5 September 2014

Abstract Due Date: Wednesday, June 4, 2013

Title: Additive Manufacturing Infrared Inspection

Session Area: 1 2 3 4 5 6 7 8 9

Sponsoring organization if SBIR-funded:

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Abstract Submittal Form

JANNAF

42nd SMBS / 38th PEDCS / 29th RNTS / 27th SEPS

Joint Subcommittee Meeting

9 – 12 December 2013

Abstract Due Date: Wednesday, June 4, 2013

Unclassified Abstract (250 – 300 words; do not include figures or tables)

Additive manufacturing is a rapid prototyping technology that allows parts to be built in a series of thin layers from plastic, ceramics, and metallics. Metallic additive manufacturing is an emerging form of rapid prototyping that allows complex structures to be built using various metallic powders. Significant time and cost savings have also been observed using the metallic additive manufacturing compared with traditional techniques.

Development of the metallic additive manufacturing technology has advanced significantly over the last decade, although many of the techniques to inspect parts made from these processes have not advanced significantly or have limitations. Several external geometry inspection techniques exist such as Coordinate Measurement Machines (CMM), Laser Scanners, Structured Light Scanning Systems, or even traditional calipers and gages. All of the aforementioned techniques are limited to external geometry and contours or must use a contact probe to inspect limited internal dimensions.

This presentation will document the development of a process for real-time dimensional inspection technique and digital quality record of the additive manufacturing process using Infrared camera imaging and processing techniques.

- By submitting an abstract, you agree to both complete a final paper for publication and to attend the meeting to present this information.
- Submit abstracts electronically; submittal instructions are found in the call for papers.
- Direct questions to Kathleen Biglari, by phone at 410.992.7300 x 208, or email to kbiglari@cpiac.jhu.edu.