



CaRAM, Inc. Newsletter

May 2010

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Staying in touch with customers

CaRAM has created a newsletter to help keep our customers informed about improvements in additive manufacturing technology, its benefits, and how it can help your existing and future product lines. The focus of the newsletter is to help keep our customers updated on electron beam melting manufacturing and other activities going on at CaRAM. The newsletter is intentionally meant to be brief. Please contact the undersigned if you would like more information.

EBM Improvements

CaRAM has recently upgraded its EBM machines with the "MultiBeam" for surface improvement. This technology developed by Arcam AB results in a much improved surface finish. The photograph below shows the appearance of several beams simultaneously melting the contour of the build layer. This provides a narrower melt pool which produces the smoother as-deposited surface. In reality, there is still only a single beam, but it is moving so fast that it gives the appearance of several beams. Please let us know if you'd like to receive a sample with a surface produced with the MultiBeam process for your evaluation.



R&D Programs

CalRAM recently received notice from the NAVSEA SBIR program office it would be requested to provide a Phase II proposal for Lattice Block Structures. The focus of this effort will be to build Lattice Block Structures for missile applications made from titanium alloys.

CalRAM was notified by the Missile Defense Agency of a Phase I SBIR award for Propulsion Systems Manufacturing. The focus of this effort is to demonstrate how the EBM process can be used to manufacture complex parts to achieve part count reduction and reduce the cost of the finished product. This project commenced in May.

Finally, CalRAM supported the University of California at Irvine on a bid for a DARPA-funded program for developing a low-cost gamma TiAl. The Kickoff Meeting for this program was held at ONR in early May.



CalRAM's Two EBM Machines in Environmentally Controlled Environment

New Materials

CalRAM is frequently being asked "what about different materials?" As a result, CalRAM has scheduled materials development training in August for processing nickel-base superalloys. We will start with Inconel 625.

AS9100 Certification

CalRAM recently went through its AS9100 annual audit and was recertified with nearly a perfect score.

Design Guidelines

Many customers want to know how thin a part can be made, what type of tolerances can be produced, what is the as-deposited surface finish, etc., that can be produced by EBM manufacturing. Towards that end, CalRAM has developed a set of design guidelines. This information is being updated and can be made available upon request. Please contact the undersigned to obtain an updated design guideline.

Contact Information

The following contact information is provided if you would like more information about CalRAM or metals additive manufacturing technology.

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For additional information on EBM technology, Arcam's website may be of use:

www.arcam.com