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ASTM Additive Manufacturing Committee Holds Inaugural Meeting

Strong Turnout as Task Groups Are Formed

ASTM International Committee F42 on Additive Manufacturing Technologies held its first meeting at ASTM International headquarters in West Conshohocken, Pa., on May 27-28. According to Brent Stucker, chair of F42, the successful meeting gave the committee the opportunity to form a variety of new task groups within four of its subcommittees, as well as clarify task group activities for the fifth subcommittee.

“I think the meeting was very successful,” say Stucker, a professor at Utah State University. “It was well attended and people were very willing to volunteer. The meeting evidenced a great need for standards in the additive manufacturing area, based on how many people were willing to say they would take ownership of tasks.” Stucker says that participants traveled from several different countries to attend the meeting.

The purpose of Committee F42 is to promote knowledge of the additive manufacturing industry, help stimulate research and encourage the implementation of technology by developing a comprehensive set of standards. The committee was formed this year at the request of the Society of Manufacturing Engineers’ Rapid Technologies and Additive Manufacturing Steering Committee.

Additive manufacturing differs from many other kinds of production processes because, as the name implies, objects are created by adding material, rather than subtracting, until a desired part is formed.

According to Stucker, several task groups were formed under each of the following subcommittees:

Test Methods—Because the industry builds pieces layer-by-layer, properties of a material can be different in different directions. Task groups will be studying how standard test methods, such as for tensile testing, can be applied to additive manufacturing processes.

Processes—Task groups were formed for each of the main categories of technology represented at the meeting, for example, laser sintering for plastics, laser sintering for metals, stereolithography. Within each category, groups are working on parameter sets/performance metrics for that process type. “The physics involved with each technology is different so each process needs its own approach,” says Stucker, who also notes that a task group was organized to compare performance of one additive manufacturing technology with another.

Materials—How to qualify a material for a certain machine or technology is one issue that task groups under the materials subcommittee will be studying. Other task groups will look at how microstructures created by additive manufacturing, particularly of metals, should be described. Traceability of materials, shelf life, storage and degradation of materials is the subject of a materials task group. Also, two task



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groups will work toward creating standards on laser sintering for nylon polyamide and for titanium 6-4, two of the most popular plastic and metal materials used in additive manufacturing.

Terminology—Task groups will be taking commonly used terms to develop standard definitions for the industry.

Design—The concept of what is good design for additive manufacturing machines will be investigated. In addition, design task groups will work toward bridging the gap between software capability and additive manufacturing machinery.

Committee F42 welcomes participation from anyone in the additive manufacturing industry who has expertise and/or desire to see standards made in any area of additive manufacturing. “Our scope is very broad and encompasses the additive manufacturing arena. We have room for everybody, says Stucker.”

A short video on Committee F42 can be viewed at www.astm.org/VIDEO/f42.swf.

For technical information, contact Brent Stucker, Utah State University, Logan, Utah (phone: 435-797-8173; brent.stucker@usu.edu). ASTM Committee F42 meets Nov. 9-10 at ASTM International Headquarters in West Conshohocken, Pa.

ASTM International welcomes and encourages participation in the development of its standards. ASTM’s open consensus process, using advanced Internet-based standards development tools, ensures worldwide access for all interested individuals. For more information on becoming an ASTM member, please contact Pat Picariello, ASTM International (phone: 610-832-9720; ppicarie@astm.org).

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