CEOCFO Magazine

ceocfointerviews.com

Issue: July 3, 2017

FABRISONIC

3D Metal Printing - Changing How the World Manufactures

Mark Norfolk
President & Chief Executive Officer

Fabrisonic LLC
www.fabrisonic.com

Contact:
Mark Norfolk
614-688-5000
mnorfolk@fabrisonic.com

Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine

"Ultrasonic additive manufacturing is allowing for the impossible to become possible."- Mark Norfolk

CEOCFO: ***Mr. Norfolk, what is Fabrisonic and sound 3D printing?***
Mr. Norfolk: Fabrisonic is a tech startup building metal 3D printers. We build machines that we sell to customers and use our own technology to 3D print metal parts. A great deal of our parts are for the aerospace industry. The reason we have a tagline of sound 3D printing is that our welding process for doing the 3D printing is based on ultrasound. We are using sound waves to weld layers of metal, one layer at a time, building a 3D shape.

CEOCFO: ***Has sound 3D printing been tried in the past?***
Mr. Norfolk: The idea of using ultrasound to weld metals has been around since the 1960s, in fact, pretty much any electronic part that you touch in your day to day life like cell phone, has ultrasonic welds in it. In the chip industry, they call that a wire bond, but it is an ultrasonic weld. We take that base called ultrasonic metal welding and scale it way up (increase power) in order to weld with 3D printing.

CEOCFO: ***How did you know it would work?***
Mr. Norfolk: Fabrisonic is kind of unique in that we are a spin out as a for-profit subsidiary of a non-profit called EWI (www.ewi.org) EWI, a non-profit research organization headquarter in Columbus, Ohio, has a whole department devoted to the use of ultrasound for different manufacturing technologies. There was quite a depth of knowledge already in the group when we started developing this technology. The technology, ultrasonic additive manufacturing or UAM, was developed in house at this nonprofit. After using the duct tape and bubblegum version of things, we proved that it worked, that the physics work, and then we started building true machines.

CEOCFO: ***3D printing is accepted but not everyone is using it yet. How do people make the leap to the ultrasonic?***
Mr. Norfolk: Ultrasonic additive manufacturing is a subset of what we call 3D printing. And 3D printing is a very hot industry right now with tremendous investment and technology group across a variety of materials in both plastic and metal. If you look at all the different metal 3D printing technologies, they are all different tools in the toolbox and these tools do not overlap that widely. The part you would make with ultrasonic additive manufacturing you would never be able to make with a powder bed fusion process. It is about leveraging the right tool for the right job.

CEOCFO: ***What might be a good fit for your technology?***
Mr. Norfolk: Our process is using sound and as it does that, we are doing the welding at very low temperature. The max temperature you see in our welding device is probably 200-250 degrees F. The very lowest setting on your oven at home is as hot as we get and we are truly welding metal to metal at that temperature. There are three distinct advantages with the low temperature process. The first is we can weld dissimilar metals. If you were to take aluminum, titanium and copper