**Heat Exchanger Design Software CoilDesigner® Now Encompasses Variations in Inside-Tube Surface Enhancements, Says the International Copper Association**

**New York, New York (March 25, 2015)** – The International Copper Association announced today that simulations of the inner-grooves of MicroGrooveTM copper tubes can now be accomplished using CoilDesigner®, a proprietary heat exchanger simulation and design optimization tool developed by the University of Maryland. Thanks to new developments by the ICA and Burr Oak Tool, Inc. (BOTI), and implemented by Optimized Thermal Systems, Inc. (OTS) into the CoilDesigner® software, the effects of specific types of surface enhancements now can be simulated.

The collaboration with BOTI addresses manufacturing challenges relating to the internal surfaces of the copper tubes, including MicroGroove tubes. Specifically, BOTI is developing non-mechanical expansion technology to expand MicroGroove tubes without deforming internal tube enhancements. This new expansion technology offers the opportunity to create complex and relatively fragile geometries. With this new software methodology in place, the effects of enhancements can be explored, to identify new geometries that increase heat transfer performance.

According to recent studies by ICA, OTS and BOTI, microfins could increase refrigerant-side heat transfer coefficients as much as 300 percent, depending on the tube diameter. For a heat exchanger made with 5-mm MicroGroove tubes, the use of a microfin tubes rather than a smooth tubes could increase the heat capacity by more than 20 percent; alternatively, it could reduce fin material mass and tube material mass up to 10 percent and up to 17 percent, respectively. Additional work is ongoing to further investigate MicroGroove behavior and potential.

The Copper Alliance recently sponsored a webinar presented by Brian McConnell, President of BOTI, in which the manufacturing technology to produce heat exchanger coils from MicroGroove Copper Tubes was described. According to experts at BOTI, the equipment to build small diameter tubes into all sizes of coils is already available, and manufacturing processes are familiar, economical and reliable. “We, at Burr Oak Tool, have focused our efforts on understanding and addressing our customers’ perceived challenges of, and timeline for, transitioning to smaller diameter tube coil production” says Jason Halling, Manager of Business Development & Marketing at Burr Oak Tool.

For more information, visit [www.microgroove.net](http://www.microgroove.net). Join the MicroGroove Group on LinkedIn to share your ideas about research directions and product development. [www.linkedin.com/groups/Microgroove-4498690](http://www.linkedin.com/groups/Microgroove-4498690). Jason Halling can be contacted at [jhalling@burroak.com](mailto:jhalling@burroak.com), Phone: +1 (269) 651-9393 ext. 280

**About ICA**

The International Copper Association, Ltd. (ICA) is the leading organization for promoting the use of copper worldwide. ICA’s mission is to promote the use of copper by communicating the unique attributes that make this sustainable element an essential contributor to the formation of life, to advances in science and technology, and to a higher standard of living worldwide. Visit [www.copperinfo.com](http://www.copperinfo.com) for more information about ICA.

**About OTS**

Optimized Thermal Systems, Inc. offers customized software and services for the design and optimization of thermal systems. The OTS mission is to free engineers to do what they do best: create and innovate! It is accomplished by providing advanced software solutions, consulting services, and physical performance measurement and validation for a variety of HVAC&R components, systems and technologies. Visit [www.optimizedthermalsystems.com](http://www.optimizedthermalsystems.com) for additional information.

**About BOTI**

Burr Oak Tool Inc. (BOTI) is a global leader in production machinery for the heat transfer and tube processing industries. For over 70 years Burr Oak Tool has designed, manufactured and installed customized machinery to the HVAC industry in over 70 countries. Providing quality machines, service and parts to customers worldwide reinforces Burr Oak’s slogan, “Global Experience...Local Solutions.” For more information contact Burr Oak Tool Inc., 405 West South Street, Sturgis, MI 49091. Telephone: 269-651-9393, Website: www.burroak.com.

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