

## MicroGroove Technology Motivates Research on Multi-Unit Air-Conditioning Systems, Says the International Copper Association

*Model Based on Graph Theory Presented at IIR International Congresses of Refrigeration (ICR2015) in Yokohama, Japan*

**New York, New York (August 17, 2015)** – MicroGroove Technology is on display once again at the IIR International Congresses of Refrigeration. The quadrennial Congresses will be held this year in Yokohama, Japan, August 16-22. As a sponsor, the Copper Alliance will exhibit examples of MicroGroove tubes and coils on behalf of its members, including tube supplier members of the International Copper Association (ICA) as well as the Japan Copper Development Association (JCDA). [See [www.copperalliance.org](http://www.copperalliance.org) and <http://jcda.or.jp/> for more about ICA and JCDA, respectively.]

In the past four years, MicroGroove has become widely recognized in the ACR industry. Scores of technical papers have been published on its advantages. MicroGroove tubes offer higher heat transfer coefficients and support higher pressures compared to conventional copper tubes.

Advances have been made in the development of CoilDesigner® software to allow for the simulation of copper tube behavior and to optimize round tube plate fin (RTPF) heat exchanger coils, using smaller diameter, inner-grooved tubes. Most designs of coils made from smaller diameter copper tubes can now be simulated and development is ongoing for a variety of inner-fin geometries.

MicroGroove is proving especially advantageous in reducing refrigerant volumes, paving the way for the use of refrigerants with low Global Warming Potential (GWP) and ultra-low GPW. The advantages of new copper tube technologies were recently outlined in a two-part paper presented by Yoram Shabtay of Heat Transfer Technologies at the Sixth IIR International Conference on CO<sub>2</sub> and Ammonia Refrigeration Technologies, Ohrid, Republic of Macedonia. A presentation on MicroGroove was also well received at the 2015 ATMOSphere America conference in Atlanta.

For ICR 2015 in Yokohama, a technical paper titled “A GENERAL STEADY STATE MATHEMATICAL MODEL FOR MULTI-UNIT AIR CONDITIONER SYSTEM BASED ON GRAPH THEORY” will be presented. In this paper, the authors describe a technique for modeling airflow heat exchangers in multi-zone applications. This technique is especially useful when applied to MicroGroove heat-exchanger coils in multi-unit systems. MicroGroove technology has been successfully used in the manufacture of residential air-conditioners for the global market as well as for light-commercial refrigeration systems and large condensers and gas coolers.

“The key benefits of MicroGroove are higher efficiency and less materials usage,” says Masahiko Wada of the Japan Copper Development Association. “We enjoy will enjoy sharing

the latest technologies with researchers from around the world in Yokohama and look forward to continuing to share the latest developments in MicroGroove Technology.”

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).

#### **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.

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