

Dear conference participants,

When writing my introductory remarks in early March 2011, I couldn't know that all our planning for the 10th International Heat Pump Conference would have to be changed. The tragic earthquake and the tsunami of March 11 affected and saddened all of us. Uncertainty about the possible effects on our conference site and the risk of further earthquakes forced both organizing committees, the National Organizing Committee of Japan and the International Organizing Committee, to cancel the meetings in Tokyo and to hold a virtual conference instead.

I wish to express my deepest sympathy to all those who suffer from this catastrophe and I wish the Japanese people strength and courage to deal with the results of the disaster.

Although the conference will not take place physically, the primary aim of the IEA Heat Pump Conferences remains. It is to help reduce energy consumption and CO₂-emissions for heating, cooling and air-conditioning. Since 1824, when Sadi Carnot discovered the dependence between 'heat' and 'work', it has been known that 'heat' or 'coldness' can be optimally produced by heat pumping technologies. This principle has been constantly improved ever since and because Carnot efficiency is still around 50%, there is a huge potential for new ideas and methods. The IEA Heat Pump Conferences have made a remarkable contribution towards global sustainability and towards a Low-Carbon world.

Thus, on behalf of the International Organizing Committee (IOC), I have the pleasure to welcome you all to this virtual conference. It is the 10th in a series of triennial conferences on heat pumping technologies staged by IEA's Heat Pump Programme (HPP). Previous conferences were held in Graz, Austria (1984), Orlando, Florida, USA (1987), Tokyo, Japan (1990), Maastricht, Netherlands (1993), Toronto, Canada (1996), Berlin, Germany (1999), Beijing, China (2002), Las Vegas, Nevada, USA (2005) and Zürich, Switzerland (2008).

There are two primary objectives with these conferences. The first is to give the audience an overview of international developments within the field of heat pumping technologies. The second is to offer a meeting place for exchanging new thoughts and ideas for international cooperation and more widespread deployment of heat pumps. While the IEA Heat Pump Program focuses on issues spanning from research and development to market deployment and practical use, the conference aims at bringing benefits from the entire heat pumping technologies value chain. We hope and believe that although participants will not be able to meet each other, we will still be able to fertilize thoughts and inspire new progress.

The conference program in this version consists of full paper presentations and some recorded speeches and messages on the conference website. More than 300 abstracts were submitted from all over the world. The IOC and the Regional Coordinators tried to form a well-balanced and interesting conference program.

The IOC wishes to express its gratitude to all who have contributed to this conference. A great thank you to the conference supporters METI (Ministry of Economy, Trade and Industry) and NEDO (New Energy and Industrial Technology Development Organization) and the conference partners AHRI, ASHRAE, CCHVAC, EHPA, FEPC, HPTCJ, JFCC, JGA, JRAIA, JSRAE and SHASE and all the country sponsors. In particular, the IOC appreciates and acknowledges the enormous effort of the National Organizing Committee of Japan, which, under the leadership of Mr Momoki Katakura, has done a tremendous job.

The IOC welcomes you to this virtual conference and hopes that you can still profit from all the interesting contributions. I sincerely hope that the next International Heat Pump Conference can be held again in the usual way with physical meetings and will be surrounded by social events and personal discussions.

Prof. Dr. Thomas Kopp
Chairman, International Organizing Committee