



**ICT2013**  
International Conference on Thermoelectrics

**The 32nd International Conference on Thermoelectrics (ICT2013)  
(The 23rd Iketani Conference 2013)**

# **Conference Prospectus**

**Dates: June 30 (Sun) - July 4 (Thu), 2013**

**Venue: Kobe International Conference Center**



<http://www.ict2013.its.org/>

## 1. Conference Outline

### 1) Conference Name

The 32nd International Conference on Thermoelectrics (ICT2013)  
(The 23rd Iketani Conference 2013)

### 2) Conference Dates

June 30 (Sun) - July 4 (Thu), 2013

### 3) Venue

Kobe International Conference Center  
6-9-1 Minatojima-Nakamachi, Chuo-ku, Kobe 650-0046  
TEL: +81-78-302-5200 FAX: +81-78-302-6485

### 4) Organizer / Coorganizer

(1) Organizer ICT2013 Organizing Committee

(2) Coorganizer Iketani Science and Technology Foundation  
National Institute for Materials Science  
Thermoelectrics Society of Japan  
National Institute of Advanced Industrial Science and  
Technology

(3) Sponsorship (anticipated) Japan Society of Applied Physics, Japan Institute of  
Metals, Materials Research Society, and others.

### 5) Chair

Ryoji Funahashi

(Senior researcher, Research Institute for Ubiquitous Energy  
Devices, National Institute of Advanced Industrial Science and  
Technology)

### 6) Conference Secretariat

Research Institute for Ubiquitous Energy Devices, National Institute of Advanced  
Industrial Science and Technology  
1-8-31 Midorigaoka, Ikeda City, Osaka 563-8577

### 7) Steering Committee Secretariat

Inter Group Corporation Person in charge: Yusuke Hachino  
Inter Group Building, 3-20-1 Toyosaki, Kita-ku, Osaka 531-0072  
TEL: +81-6-6372-3053 FAX: +81-6-6376-2362

### 8) Participant Countries (anticipated)

(Asia/Oceania) Japan, South Korea, China, Taiwan, Hong Kong, Singapore,  
Thailand, Indonesia, Australia, and others.

(Europe) UK, France, Austria, Italy, Israel, Germany, Switzerland, Russia, Poland,  
Spain, Denmark, Finland, and others.

(North and South America) USA and others.

### 9) Number of Participants (anticipated)

Approx. 500 persons (approx. 300 from Japan and 200 from abroad)

**10) Official Language**

English

**11) Conference Purpose**

Since the Great East Japan Earthquake in March 2011, it has been more and more important to use natural energy sources such as solar and geothermal heat as well as undeveloped energy sources including waste heat from industrial plants. In thermoelectric conversion, energy conversion devices are highly expected to coexist with humans in harmony with the environment. In this field, thermoelectric conversion technologies that directly convert heat into electricity offer enormous promise because they can be used at temperatures below the lower limit required for conventional heat engines.

The International Conference on Thermoelectrics (ICT) is the only international conference specific to the science and engineering of thermoelectric conversion at which there are oral exchanges of scientific and technological information on thermoelectric conversion. Accounting for 30% of all participants, Japan has long played a leading role at conferences devoted to the science and engineering of thermoelectric conversion. In thermoelectric conversion, which does not involve traditional machine motion, more emphasis is placed on materials development to improve conversion efficiency. "Physics of Low-Temperature Transmitting Materials and Guidelines for Materials Development", which was recently published in Japan, will attract tremendous interest at the ICT. Moreover, the ICT has also discussed regarding the field of engineering, in particular, how newly developed materials can be incorporated into practical machines.

Due to the importance of thermoelectric conversion technologies and science, research in this field has increasingly gained recognition year by year, with the number of researchers in Japan growing three-fold to approximately 450 from nearly 150 ten years ago. However, the ICT has not been held in Japan for a long time since it was held in Nagoya in 1998. Through ICT2013, we aim to disseminate Japan's scientific and industrial technologies to the world, as well as show the wisdom of humans by holding the conference in Kobe, a city that has been completely restored from the damage of the 1995 Great Hanshin Earthquake. Furthermore, we seek to enhance the development of thermoelectric conversion technologies in Japan and the world by inviting many young researchers from neighboring Asian countries and regions. During ICT2013, we also plan to hold an exhibition for domestic material manufacturers, electrical component manufacturers, machine processing companies and measuring equipment companies, all of which are involved in thermoelectric conversion, in order to provide an opportunity for exchange between industry and academia.

**12) Main Theme (anticipated)**

1. Research on thermoelectric conversion materials used for mutual conversion between heat and electricity
2. Physics and chemistry in thermoelectric conversion materials
3. Technologies for manufacturing, processing and modularizing thermoelectric conversion materials
4. Electron cooling and power generation technologies using thermoelectric conversion materials
5. Other new technologies and phenomena relating to thermoelectric conversion

13) Past Venues (last five years)

Year	Conference name	Host country	Host city
2008	ICT2008	USA	Corvallis (Oregon)
2009	ICT2009	Germany	Freiburg
2010	ICT2010	China	Shanghai
2011	ICT2011	USA	Traverse City (Michigan)
2012	ICT2012	Denmark	Aalborg

14) Venue Overview

(1) Kobe International Conference Center



(2) Interior of Venues (anticipated)



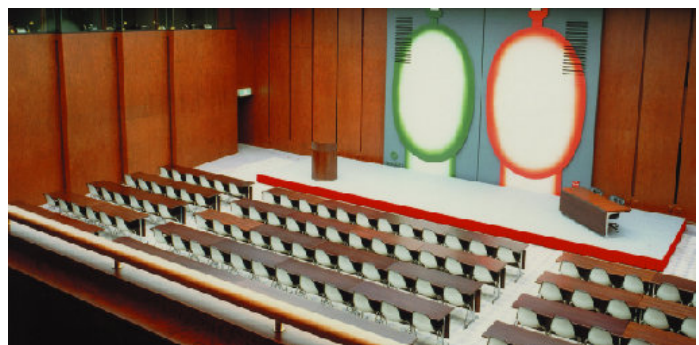
Main venue (Main Hall)



Exhibition venue (Reception Hall)



Second venue (501)



Poster Session venue (International Conference Room 301)

(3) Access



15) Outline of Conference Plan

- [Program (anticipated)]
- Plenary Lecture
- Invited Lecture
- Oral Session
- Poster Session, etc.

[Schedule (anticipated)]

Day	June 30th	July 1st (Mon.)			July 2nd (Tues.)			July 3rd (Wed.)			July 4th (Thurs.)		
Room		1F	4F	5F	1F	4F	5F	1F	4F	5F	1F	4F	5F
7:30		Main Conference Hall	Meeting Room 401,402	Meeting Room 501	Meeting Room 502	Main Conference Hall	Meeting Room 401,402	Meeting Room 501	Meeting Room 502	Main Conference Hall	Meeting Room 401,402	Meeting Room 501	Meeting Room 502
8:00		8:00- Registration				8:30-10:00 Iketani Session 2 (Main Hall)							
8:30		8:30-8:40 Opening Ceremony (Main Hall)				8:30-9:15 Plenary III			8:30-10:00 Oral Sessions (85-90)	8:30-10:00 Oral Sessions (91-96)	8:30-10:00 Oral Sessions (97-102)	8:30-10:00 Oral Sessions (103-108)	8:30-10:00 Oral Sessions (109-114)
8:40		8:40-10:10 Iketani Session 1 (Main Hall)				8:15-10:00 Plenary IV						8:30-10:00 Oral Sessions (115-120)	8:30-10:00 Oral Sessions (121-126)
8:40-9:25		Plenary I										8:30-10:00 Oral Sessions (127-132)	8:30-10:00 Oral Sessions (133-138)
9:25-10:10		Plenary II										10:00-10:30 Coffee Break	10:00-10:30 Coffee Break
10:00		10:10-10:30 Coffee Break				10:00-10:30 Coffee Break						10:00-10:30 Coffee Break	10:00-10:30 Coffee Break
10:30		10:30-12:00 Oral Sessions (1-6)	10:30-12:00 Oral Sessions (7-12)	10:30-12:00 Oral Sessions (13-18)		10:30-12:00 Oral Sessions (55-60)	10:30-12:00 Oral Sessions (61-66)	10:30-12:00 Oral Sessions (67-72)		10:30-12:00 Oral Sessions (103-108)	10:30-12:00 Oral Sessions (109-114)	10:30-12:00 Oral Sessions (115-120)	
11:00													
12:00		12:00-13:30 Lunch				12:00-13:30 Lunch				12:00-13:30 Lunch			
13:00													
13:30		13:30-15:00 Oral Sessions (19-24)	13:30-15:00 Oral Sessions (25-30)	13:30-15:00 Oral Sessions (31-36)		13:30-14:30 Oral Sessions (73-76)	13:30-14:30 Oral Sessions (77-80)	13:30-14:30 Oral Sessions (81-84)		13:30-15:00 Oral Sessions (121-126)	13:30-15:00 Oral Sessions (127-132)	13:30-15:00 Oral Sessions (133-138)	
14:00						14:30-15:00 Short Presentations							
15:00	13:00-17:30 Registration		15:00-15:15 Coffee Break			15:00-15:30 Coffee Break				15:00-15:30 Coffee Break		15:00-15:30 Award Presentation (Main Hall)	
15:15		15:15-16:45 Oral Sessions (37-42)	15:15-16:45 Oral Sessions (43-48)	15:15-16:45 Oral Sessions (49-54)						15:30-17:00 Oral Sessions (139-144)	15:30-17:00 Oral Sessions (145-150)	15:30-17:00 Oral Sessions (151-156)	
16:00					15:30-17:30 Poster Sessions (even numbers)								15:30-16:00 Closing Remarks (Main Hall)
16:45		16:45-17:00 Coffee Break											
17:00			17:00-17:30 Short Presentations										
17:30		17:30-19:30 Poster Sessions (odd numbers)											
18:00						18:00-21:30 Excursion							
19:00													
19:00-21:00	19:00-21:00 Welcome Reception												
20:00													
21:00													



## 2. Conference Organization

### Conference Chair

Ryoji FUNAHASHI  
National Institute of Advanced Industrial Science and Technology

### Special Adviser

Takenobu KAJIKAWA      President of the Thermoelectrics Society of Japan (TSJ)  
Kunihito KOUMOTO      Nagoya University

### Chair of International Advisory Board

Masanari IKETANI      Iketani Science and Technology Foundation

### International Advisory Board

Harald BOTTNER (Germany)	Lev BULAT (Russia)
Thierry CAILLAT (USA)	Gang CHEN (USA)
Lidong CHEN (China)	Mikhail FEDOROV (Russia)
Yuri GRIN (Germany)	Mercouri KANATZIDIS (USA)
Hee-Woong LEE (South Korea)	Jinfeng LI (China)
Qiang LI (USA)	Antoine MAIGNAN (France)
Kakuei MATSUBARA (Japan)	Don MORELLI (USA)
George NOLAS (USA)	Peter ROGL (Austria)
Makoto SAKATA (Japan)	Hubert SCHERRER (France)
Won Seon SEO (South Korea)	Xinfeng TANG (China)
Jean-Claude TEDENAC (France)	Ichiro TERASAKI (Japan)
Janusz TOBOLA (Poland)	Terry TRITT (USA)
Ctirad UHER (USA)	Anke WEIDENKAFF (Switzerland)
Shinsuke YAMANAKA (Japan)	Jihui YANG (USA)

### Organizing Committee

#### *Financial*

Ryosuke O. SUZUKI      Hokkaido University  
Eiji OHTA      Keio University

#### *Scientific Program*

Yuzuru MIYAZAKI      Tohoku University  
Hiroaki ANNO      Tokyo University of Science, Yamaguchi  
Kei HAYASHI      Tohoku University  
Takao MORI      National Institute for Materials Science  
Atsushi YAMAMOTO      National Institute of Advanced Industrial Science and Technology

#### *Publication*

Shigeru KATSUYAMA      Osaka University  
Mikio ITO      Osaka University  
Takashi ITOH      Nagoya University  
Atsuko KOSUGA      Osaka Prefecture University

#### *Program Management*

Ken KUROSAKI      Osaka University  
Masashi MIKAMI      National Institute of Advanced Industrial Science and Technology  
Hiroaki MUTA      Osaka University  
Yuji OHISHI      Osaka University  
Michihiro OHTA      National Institute of Advanced Industrial Science and Technology

#### *Proceedings*

Tsunehiro TAKEUCHI      Nagoya University  
Wataru KOBAYASHI      University of Tsukuba

## Organizer:



Organizing Committee, the 32nd International  
Conference on Thermoelectrics (ICT2013)

## Coorganizer:



Iketani Science and  
Technology Foundation



National Institute for  
Materials Science



Thermoelectrics  
Society of Japan



National Institute of Advanced Industrial  
Science and Technology