The 35TH INTERNATIONAL CONFERENCE &
The 1ST ASIAN CONFERENCE ON THERMOELECTRICS

(ICT /ACT 2016)

第35届国际热电大会暨第一届亚洲热电会议

MAY 29–JUNE 2, 2016 WUHAN, CHINA

CONFERENCE PROGRAM

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Contents

Conference Information

The 35th International Conference on Thermoelectrics & The 1st Asian Conference on Thermoelectrics (ICT/ACT 2016)

Date	May 29 (Sunday) to June 2 (Thursday), 2016
Venue	Wanda Reign Hotel Wuhan & Wanda Realm Hotel Wuhan 138 Donghu Rd, Wuchang District, Wuhan, Hubei P. R. China
Organizer	Wuhan University of Technology
Co-organizer	Shanghai Institute of Ceramics, CAS Zhejiang University Tsinghua University
Member Societies	International Thermoelectric Society Asian Association on Thermoelectrics Chinese Material Research Society Chinese Thermoelectric Society
Supporters	Ministry of Science and Technology of P. R. China Ministry of Education of P. R. China National Natural Science Foundation of P. R. China The People's Government of Hubei Province The People's Government of Wuhan Municipality

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Conference Honorary Chairman: Prof. Qingjie Zhang

Conference Chairman: Prof. Xinfeng Tang

Organizing Committee

Name	Affiliation
Prof. Xinfeng Tang	Wuhan University of Technology, China
Prof. Lidong Chen	Shanghai Institute of Ceramics, CAS, China
Prof. Xinbing Zhao	Zhejiang University, China
Prof. Jingfeng Li	Tsinghua University, China
Prof. Wenqing Zhang	Shanghai University, China
Prof. Kefeng Cai	Tongji University, China
Prof. Jiaqing He	South University of Science and Technology of China, China
Dr. Yonggao Yan	Wuhan University of Technology, China
Dr. Xianli Su	Wuhan University of Technology, China

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Prof. Mike Reece	Queen Mary University of London, UK
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Prof. Tiejun Zhu	Zhejiang University, China
Prof. Yanzhong Pei	Tongji University, China
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Prof. Wenyu Zhao	Wuhan University of Technology, China
Dr. Yonggao Yan	Wuhan University of Technology, China
Dr. Xianli Su	Wuhan University of Technology, China

Sponsors & Exhibitors

The organizing committee would like to thank our Sponsors and Exhibitors for the support of the conference.

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Guangdong Fuxin Technology Co., Ltd.

SILVER SPONSOR

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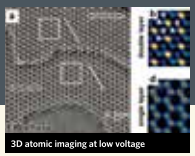
Titan™ Themis G2

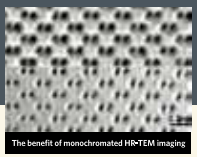


3D atomic imaging at low voltage

Reconstructed phase image of graphene double and single sheet acquired at 80 kV. A contrast difference between a top and bottom layer single carbon atom in the double sheet is resolved.

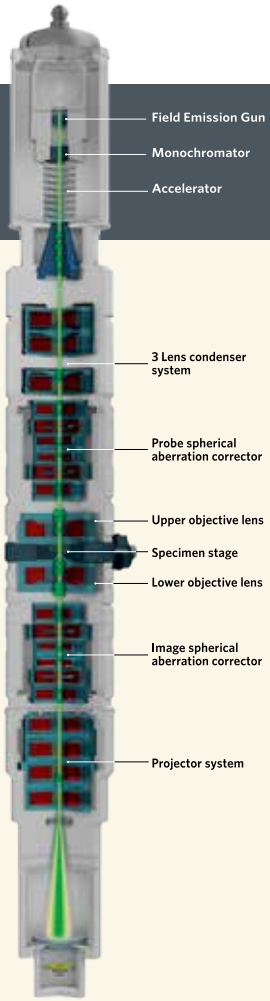
Sub-Ångström HR-TEM imaging at 300 kV

HR-TEM image of Ge[112] acquired at 300 kV using a monochromator. The dumbbell distance of 81 pm is resolved. A negative Cs value was chosen to enhance the contrast.



The benefit of monochromated HR-TEM imaging

Comparison between a Cs-corrected HR-TEM image with and without the use of a monochromator. The improvement in resolution in Ge[110] is clearly visible in the lower image.



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放电等离子烧结(SPS)/脉冲通电烧结(PECS)

Spark Plasma Sintering (SPS)
Pulsed Electric Current Sintering (PECS)

变革材料研发到产品创制的新型SPS系统
提供从基础研发到成品试制的多元机型配套

New SPS system Renovating "Manufacturing" from the stage of materials
Wide range of models applicable to the fields from basic research to trial productions

LABOX-1575 (高配机型示例)
LABOX-1575 with option item

小型台式SPS系统
Small size Tabletop type SPS system

LABOX™-100 series
LABOX™-300 series

"高性能、易操作、紧凑化"的设计理念
凝聚了新材料研创中不可或缺的功能

The principal is "High-Performance & Simple Operation"
Major functionalities needed for the development of advanced materials are integrated in the compact hardware.

LABOX-315 (高配机型示例)
LABOX-315 with option item

中型SPS系统
The principal is "High-Performance & Simple Operation"

LABOX™-600 series
LABOX™-1500 series
LABOX™-3000 series

应用广泛的研发用标准机系列
Standard models for R & D of versatile applications

带手套操作箱的SPS系统
SPS System with Glove Box

LABOX™-GH series

从粉末充填到烧结制备、整个过程可在无氧环境中进行
SPS process is possible to complete from powder filling to sintering without exposing in the atmosphere.

LABOX-325GH (高配机型示例)
LABOX-325GH (with option item)

LABOX系列SPS主要技术参数 Basic Specifications of LABOX-series

型号	LABOX-110	LABOX-125	LABOX-315	LABOX-325	LABOX-625	LABOX-650	LABOX-1550	LABOX-1575	LABOX-3050	LABOX-3010K
最大烧结压力 Maximum Sintering Pressure	10kN[1.02tonf]		30kN[3.06tonf]		60kN[6.12tonf]		150kN[15.3tonf]		300kN[30.6tonf]	
压缩行程 Z-axis Stroke	50mm（开放高度150mm） 50mm(Open height 150mm)		80mm（开放高度200mm） 80mm(Open height 200mm)		150mm（开放高度250mm） 150mm(Open height 250mm)		150mm（开放高度250mm） 150mm(Open height 250mm)		180mm（开放高度280mm） 180mm(Open height 280mm)	
加压控制方式 Pressurizing Control System	AC伺服电机纵一轴高精度加压控制 Vertically Single Axis Press with AC Servo Motor									
烧结工作台规格 Table Size	φ70mm		φ90mm		φ90mm		φ150mm		φ200mm	
最高温度 Maximum Temperature	2500℃（常用工作温度2200℃）※ 2500℃ (2200℃ for normal use)									
最大脉冲直流输出 Maximum Pule Current Output	1200A	2500A	1500A	2500A	2500A	5000A	5000A	7500A	5000A	10000A

※标准机型均采用伺服电机加压控制和直流脉冲变频电源
※Standard machines are with AC servo motor for pressure control and Inverter Pulse Current Power Supply for sintering current.

制造商
New Materials & Sintering SINTER LAND INC.
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Tel:(+81) 258-25-8008 / www.sinterland.jp

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香河东方电子有限公司
XIANGHE ORIENTAL ELECTRONIC CO.,LTD.

公司介绍 Company profile

香河东方电子有限公司是一家集新品研发、生产加工、市场销售的高新技术企业，主要产品有半导体致冷器件、小型制冷系统、温差发电器件等，年产量200万只。质量管理体系符合ISO9001-2008标准，产品符合欧盟Rohs和Reach要求。香河东方电子有限公司热诚欢迎各界前来参观、考察、洽谈业务。

Orient Electric is engaged in designing, developing and producing thermoelectric cooling module (TEMS) and TEMS application products. The Company occupies an area of 20,000 m2 with a covered area of 10,000 m2 There are 150 employees serving for the Company, amongst them 25 are technical staffs. The Company has successfully obtained ISO9001 and SGS and Rohs and Reach .

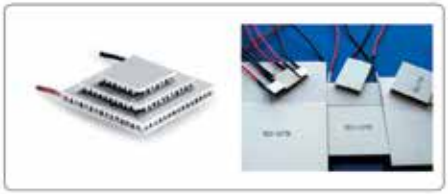
产品证书 Product certificate

TÜV SÜD RoHS CLASSIFIED UL ESI

GB/T19001-ISO9001

产品介绍 Product introduction

致冷组件 Thermoelectric cooling module



温差发电器件 Thermoelectric generation module

异型定制 Profiled custom

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邮箱(E-mail):xhdfdz@163.com
http://www.xhdfdz.com.cn

Conference Venue

ICT/ACT 2016 will be held at the Wanda **Reign** Hotel Wuhan and the Wanda **Realm** Hotel Wuhan, 138 Donghu Road, Shuiguohu Street, Wuchang, Wuhan, China, which are opposite to each other. Wanda Reign Hotel Wuhan is one of the premier hotel in the central China, located in between South of Chu River & Han Street and North of East Lake & Shuiguo Lake. Nearby there are a lot of options for dining and entertainment. **The plenary sessions and oral sessions** will be held in the Wanda **Reign** Hotel Wuhan. **The poster session** will be held in the Wanda **Realm** Hotel Wuhan.

Wanda Reign Hotel Wuhan(武汉万达瑞华酒店)

138 Donghu Road, Shuiguohu Street, Wuchang, Wuhan, China

武汉市 武昌区 水果湖东湖路 138 号

Roadmap

Relative location for Wuhan Tianhe Airport, Hankou Railway Station, Wuhan Railway Station and Wuchang Railway Station. Copyright: www.google.com

Roadmap near the Conference Venue. Copyright: www.google.com

Access

Free Shuttle service will be provided from Wuhan Tianhe Airport to conference venue (Wanda Reign Hotel Wuhan) every hour on the 29th of May beginning at 10 am and the last shuttle will leave the airport at 11 pm. There will be some staff holding an “ICT/ACT 2016” sign and waiting for you at the domestic arrival gate.

If you arrive in Wuhan via high speed train, we strongly recommend you take taxi from Railway Station to Wanda Reign Hotel Wuhan. Please tell the driver your destination (Wanda Reign Hotel Wuhan, “ 武汉万达瑞华酒店 ” in Chinese). Taxis run all day and night.

Three passenger railway stations in the city are located separately, with Wuhan and Wuchang Railway Stations in the town of Wuchang, and Hankou Railway Station in the town of Hankou. It takes about 30 minutes and costs you about CNY 40 from Wuchang Railway Stations to conference venue. It takes about 30 minutes and costs you about CNY 40 from Wuhan Railway Station to conference venue. It takes about 50 minutes and costs you about CNY 120 from Hankou Railway Station to conference venue.

For more information and help, you can call the local organizer or request helps from a person nearby. The following sign/interpretation will be helpful for you.

> Please take me to Wanda Reign Hotel Wuhan
> Address: 138 Donghu Road, Shuiguohu Street, Wuchang, Wuhan, China
> 请到武汉市武昌区水果湖街东湖路 138 号万达瑞华酒店

Registration desk (Lobby of Wanda Reign Hotel Wuhan, 1F)

May 29, 2016	14:00-22:00
May 30, 2016	07:00-21:00
May 31, 2016	07:00-18:00
June 1, 2016	08:00-18:00
June 2, 2016	08:00-15:00

Contact Person: Yonggao Yan
Tel: +86-133-9714-3561 E-mail: yanyonggao@whut.edu.cn

Registration fee on site

Regular:	USD 850
Students:	USD 550
Accompany Person:	USD 350

Registration fee for regular participants and students includes

Attendance of all scientific sessions, access to conference facilities, program booklet, welcome reception (+drinks), conference banquet (+drinks), night cruise on Yangtze and Han rivers, coffee, tea and refreshments during conference breaks as well as four business lunch buffets including beverages.

Registration fee for accompany person includes

Welcome reception (+drinks), banquet (+drinks), night cruise on Yangtze and Han rivers, four business lunch buffets including beverages as well as guided tour to the Yellow Crane Tower and Wuhan botanical garden (additional tours can be arranged with an extra charge).

Industrial exhibition

The Industrial Exhibition will take place throughout the whole conference. The Industrial exhibition is held in the Grand Ballroom Foyer and VIP Room on the third floor of Wanda Reign Hotel Wuhan. It will be open from 08:00 to 18:00 from Monday to Thursday.

Electricity

The 220 volts AC current and three-prong or two-prong outlets are used in China (see the image in the right). It is suggested to bring an adapter with you if it does not match the plug of your electrical equipment.

Telephone and internet service

Please check your mobile provider to make sure your phone will work in China. Or if you might need some special arrangements before traveling.
Free Wi-Fi is available in conference venue.

Climate

Wuhan has a comfortable climate in late May and early June and temperature ranges between 23°C – 28°C (73°F – 82°F). An umbrella is needed as its local rainy season in May and June.

Guideline for oral presentation

1. Presentation rooms:
   Grand Ballroom (3F, Wanda **Reign** Hotel Wuhan)
   Ballroom 2 (3F, Wanda **Reign** Hotel Wuhan)
   Ballroom 3 (3F, Wanda **Reign** Hotel Wuhan)
   Hong Kong Room (2F, Wanda **Reign** Hotel Wuhan)
2. A laptop computer / projector will be provided to all oral presenters.
3. Please check dates and times of your contribution at the scientific program. Please bring your presentations on powerpoint .ppt or Acrobat .pdf files.
4. Please be sure to load you file or data (in USB or CD) at least 30 min before your presentation. It purposes to confirm the operation of your data with the projector.
5. Duration of talks including time for discussion:
   Oral presentations: 12 minutes (including 3 minutes for discussion)
   Invited talks: 24 minutes (including 4 minutes for discussion)
   Keynote lectures: 40 minutes (including 5 minutes for discussion)

Guideline for poster session presentation

1. Presentation venue: Wanda **Realm** Hotel Wuhan
2. Presentation rooms: Poster Session Room (Grand Ballroom, 3F)
3. Please place your poster on Tuesday between 10:00 am to 21:00 pm. Please do not remove your poster until the Poster Award period will finish on Wednesday 21:00 pm. The organizing committee is not responsible for posters which have not removed by this time.
4. Poster boards will be labeled with numbers corresponding to the poster number assigned in the programs. A poster must fit in a space of 120 cm in height and 90 cm in width or smaller. Please also be reminded there will be no poster printing facilities at the conference site.
5. During the poster session authors are kindly asked to be present in the area of their posters in order to answer questions that interested viewers may have.

Proceedings

The ICT2016 proceedings will be published as a special issue of the Journal of Electronic Materials (JEM).

Official language

The conference language is English.

Name badges

Participants and accompanying persons are required to wear the official conference name badge on all conference occasions. Without name badge no entrance!

Tourism information

At the registration desk in the Lobby of Wanda **Reign** Hotel Wuhan (1F), we will have a tourism information desk for those who wish to explore the city.

Conference staff

Conference staffs and student volunteers will be on hand to assist you with any conference-related issues and questions. Please look for special **"yellow" T-shirt**.

Emergency medical care

At the registration desk in the Lobby of Wanda **Reign** Hotel Wuhan (1F), we will have a Emergency medical care desk.

Welcome Evening

Date: Sunday, May 29, 2016
Time: 18:00-20:00
Place: Wanda **Reign** Hotel Wuhan, Grand Ballroom, 3F
Cost: Included in registration fee

Excursion

Excursion includes Night cruising on Yangtze and Han Rivers and Hankou Yangtze River Beach Park.

Date: Tuesday, May 31, 2016
Time: 16:30-21:00
Assembling Place: At the gate of Wanda **Reign** Hotel Wuhan
Cost: Included in registration fee

The buses to the Hankou Yangtze River Beach Park will be available at the gate of Wanda Reign Hotel Wuhan at 16:30.

We will board a ship at 18:00 from the dock near the Hankou Yangtze River Beach Park. The Cruising ship will sail at 18:30 and return around 20:00. Please bring your name badge.

During the cruise, buffet and drinks will be served.






Award ceremony & banquet

Date: Wednesday, June 1, 2016
Time: 18:30-21:00
Place: Wanda **Reign** Hotel Wuhan, Grand Ballroom, 3F
Cost: Included in registration fee

On Wednesday evening, the conference Diner and award ceremony will be held as the social highlight of the ICT/ACT to give you the opportunity for social networking and to reminisce about the conference. You will enjoy a delicious Chinese food and Chinese traditional show.

Accompany persons' program

Excursion to the Yellow Crane Tower and Wuhan botanical garden
Date: Monday, May 30, 2016
Time: 9:00-17:00
Assembling Place: At the gate of Wanda Reign Hotel Wuhan
Cost: Included in registration fee of accompany person

Wuhan Botanical Garden

The Wuhan Botanical Garden (WBG) of the Chinese Academy of Sciences (CAS) was founded in 1956 and opened to the public in 1958. As one of three research-oriented botanical gardens in China, WBG's mission is to develop and maintain plant collections for display, conservation, education and research.

Yellow Crane Tower

Yellow Crane Tower, located on Snake Hill in Wuchang, is one of the Three Famous Towers South of Yangtze River (the other two: Yueyang Tower in Hunan

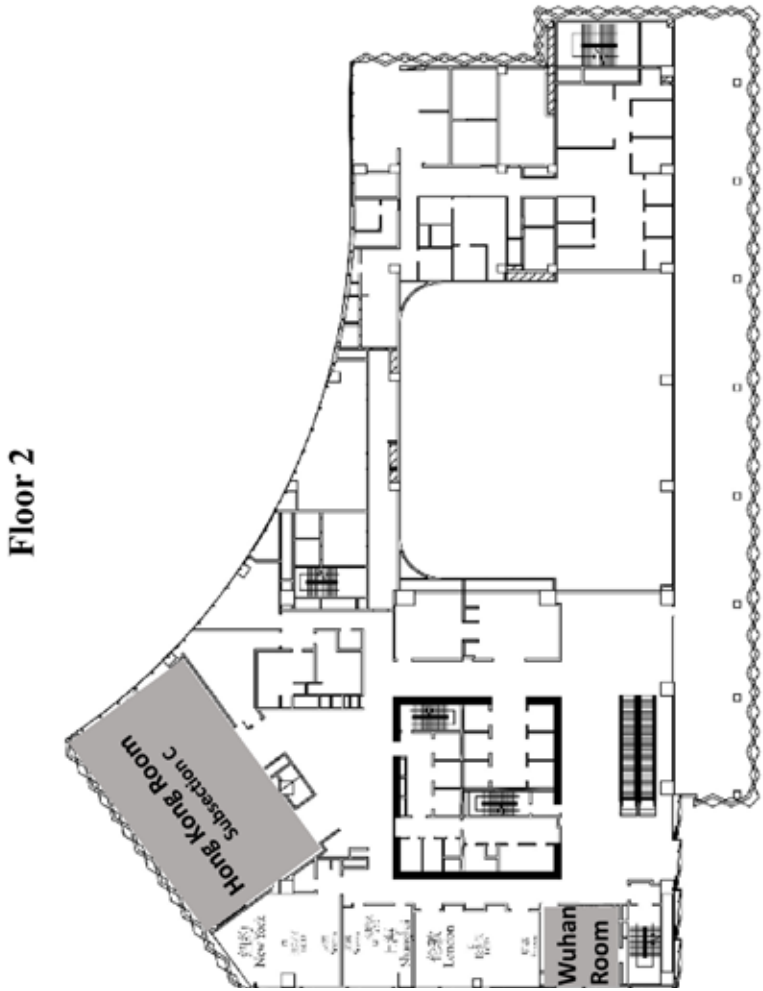
and Tengwang Tower in Jiangxi). Yellow Crane Tower is regarded as the symbol of Wuhan city.

Lunch

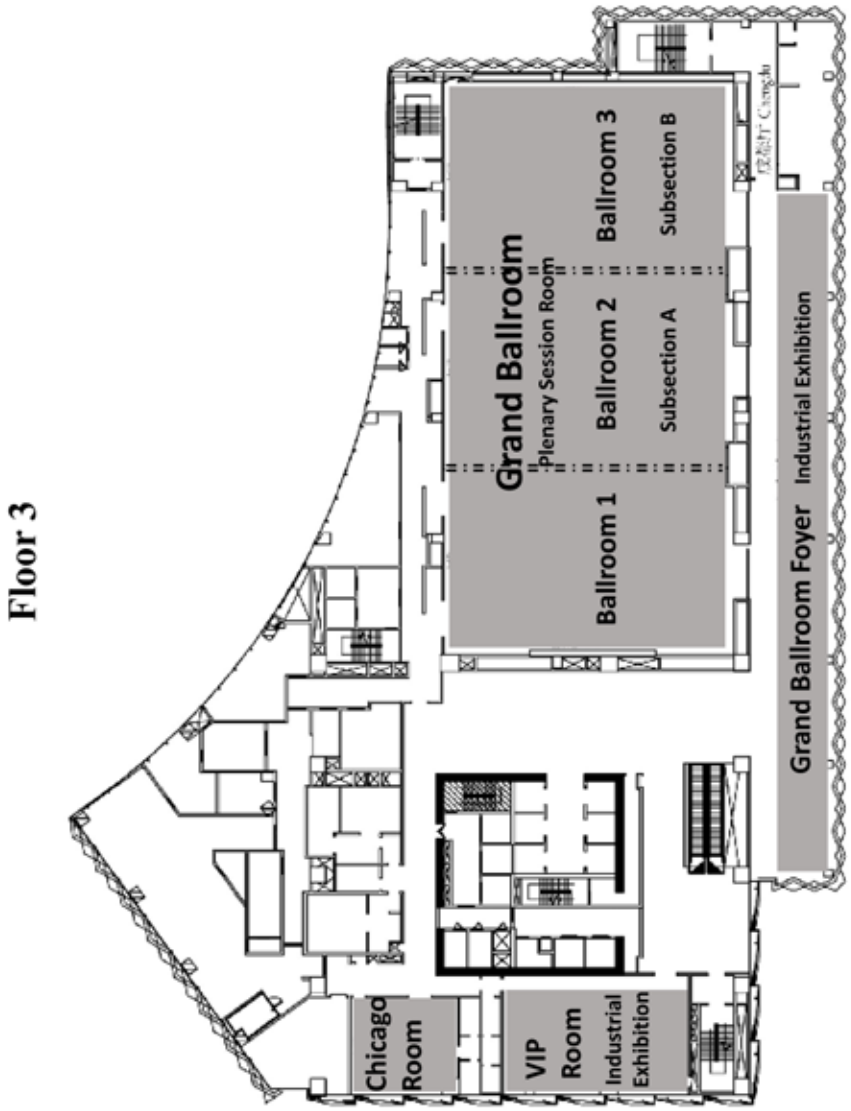
Lunch will be provided in Wanda Reign Hotel Wuhan (1F) and Wanda Realm Hotel (1F). Please check the detailed place for Lunch on your lunch ticket.

Floor plan

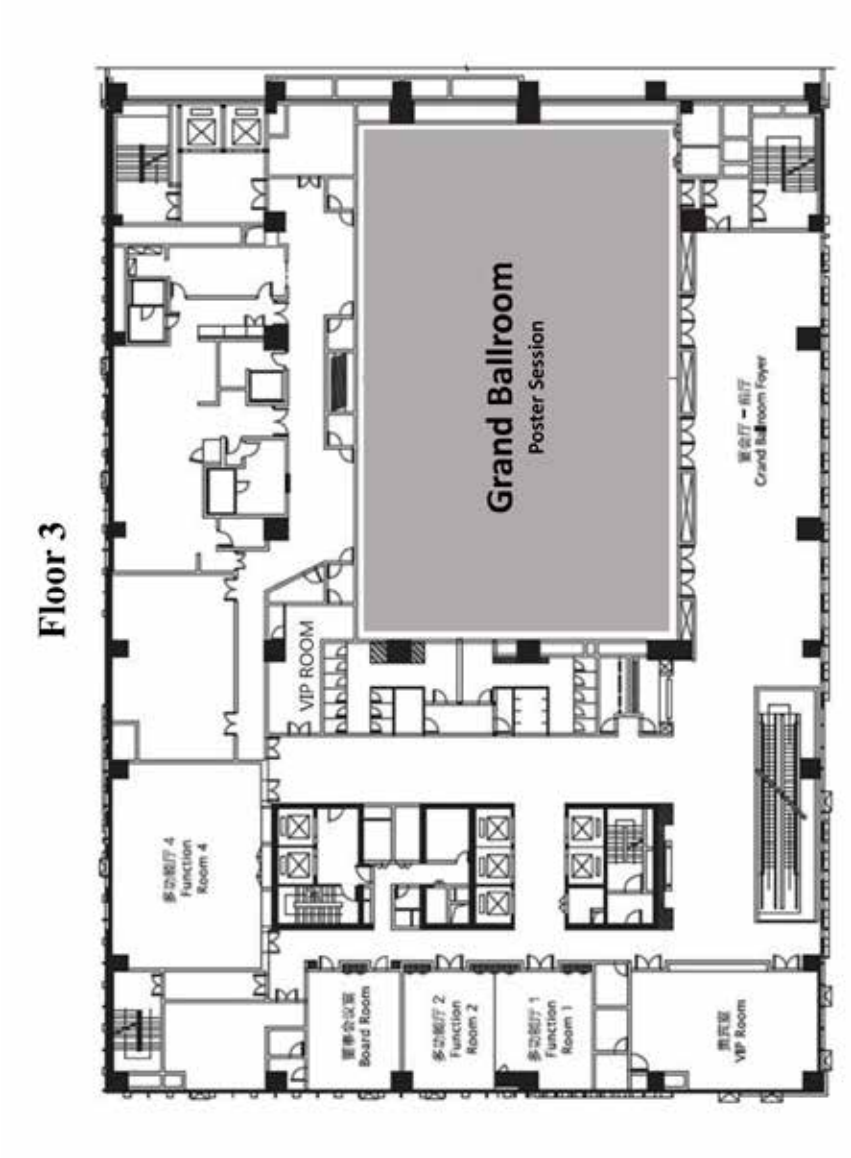
Wanda Reign Hotel Wuhan



Floor plan
Wanda Reign Hotel Wuhan



Floor plan
Wanda Realm Hotel Wuhan



On Foundation of Asian Association of Thermoelectrics

Asian Association of Thermoelectrics (AAT) is starting today from the combined efforts of the Chinese Thermoelectric Society, the Thermoelectrics Society of Japan and the Korean Thermoelectric Society. AAT is a non-profit scientific association and aims to represent the interests of everyone involved in thermoelectricity. The aim of AAT is to promote cooperation and the exchange of information and ideas between individuals and groups working on or with interest in thermoelectricity in Asia, and also to raise the public awareness of thermoelectricity and its applications.

The delegates from the thermoelectric societies of China, Japan and Korea gathered together in Shenzhen, China, in April 2015, and discussed the scopes toward the formation of AAT. The details about AAT was further discussed and determined by the organizing committee meeting during ICT 2015 in Dresden, Germany.

The activities and affairs of AAT shall be conducted and all corporate powers shall be exercised by or under the direction of the board. The board of AAT shall consist of nine to fifteen members as the delegate(s) from the adhering bodies, and the delegate(s) shall be determined by the governance body of the adhering societies. Board members are expected to participate consistently in all activities of the board and annual meeting of AAT. Three from each of the original member societies were determined as the initial board members: Lidong Chen, Xinbing Zhao, and Xinfeng Tang from the Chinese Thermoelectric Society; Takao Mori, Ryoji Funahashi, and Michitaka Ohtaki from the Thermoelectrics Society of Japan; Wonseon Seo, Sudong Park, and Wooyoung Kim from the Korean Thermoelectric Society. The board determines the executive committee of AAT, and the first executive committee is composed of Lidong Chen from China as the President, Takao Mori from Japan and Wonseon Seo from Korea as the Vice-Presidents.

Holding the Asian Conferences on Thermoelectrics (ACT) and short course schools is among the major activities of AAT. The 1st ACT is combined with ICT 2016, and AAT appreciates the great help from the organizing committee of ICT 2016. The first summer school on thermoelectrics would be held on May 29th, 2016, in Wuhan. More than 80 young researchers and students from academia and industries participate in the 1st AAT summer school. The 2nd ACT will be held in Kyoto, Japan, in 2017, as the thermoelectric symposium of IUMRS-ICAM 2017. All researchers and students in Asia in the field of thermoelectricity will be welcome to the 2nd ACT.

Important Issues for the Societies

1. International Thermoelectric Society board meeting on Sunday

Time: 14:00-17:00, Sunday, May 29, 2016
Place: Wuhan Room, Wanda Reign Hotel Wuhan 2F
Participants: Board members of ITS

2. International Thermoelectric Society board meeting on Wednesday

Time: 15:30-17:30, Wednesday, June 1, 2016
Place: Wuhan Room, Wanda Reign Hotel Wuhan 2F
Participants: Board members of ITS

3. Vote for new board members of International Thermoelectric Society (ITS)

Fill in the ballot ticket and put in the selected box on Registration Desk during 9:00-16:30 on 31 May, 2016.
Time: 9:00-16:30, Tuesday, May 31, 2016
Place: Wanda Reign Hotel Wuhan, Registration desk, 1F
Participants: All Attendees

4. Vote for executive directors and new board members for Chinese Thermoelectric Society (CTS)

Fill in the ballot ticket and put in the selected box on Registration Desk during 9:00-17:00 on 30 May, 2016.
Time: 9:00-17:00, Monday, May 30, 2016
Place: Wanda Reign Hotel Wuhan, Registration desk, 1F
Participants: Chinese Attendees

5. Asian Association of Thermoelectrics (AAT) first board meeting

Time: 15:00-16:00, Monday, May 30, 2016
Place: Chicago Room, Wanda Reign Hotel Wuhan 3F
Participants: Board members of AAT

6. Chinese Thermoelectric Society (CTS) second board meeting

（中国材料研究学会热电材料及应用分会第二届理事会第二次会议）
Time: 15:30-16:30, Tuesday, May 31, 2016
Place: Chicago Room, Wanda Reign Hotel Wuhan 3F
Participants: Board members of CTS

AAT Summer School

Time: 9:00-17:00
Place: Hong Kong Room

AAT1	Wenqing Zhang, Shanghai University, China
9:00-10:15	On the tuning of electrical and thermal transport in thermoelectrics
10:15-10:30	Coffee Break
AAT2	Min-Wook Oh, Hanbat National University, South Korea
10:30-11:45	Computational thermoelectric properties and materials
11:45-13:30	Lunch
AAT3	Jiaqing He, South University of Science and Technology of China, China
13:30-14:45	Structural characterization and structure-property correlation of thermoelectric materials
14:45-15:00	Coffee Break
AAT4	Tsutomu Kanno, Panasonic Corporation, Japan
15:00-16:15	Device consideration for applications in power generation, radiation sensing, and Peltier cooling
16:15-17:00	Coffee Break

	Sunday, May 29	Monday, May 30	Tuesday, May 31	Wednesday, June 1	Thursday, June 2
08:00-08:30					
08:30-09:00		Subsection 1 **Opening & Plenary**	Subsection 5 **Plenary**	Subsection 8 **Award & Plenary**	Subsection 11A **Silicide**
09:00-09:30					
09:30-10:00				**Coffee Break**	
10:00-10:30		**Coffee Break**	**Coffee Break**	Subsection 9A **Cu_2X-based materials**	**Coffee Break**
10:30-11:00		Subsection 2A **Half Heusler**	Subsection 6A **Organic thermoelectric material 1**		Subsection 12A **Chalcogenide 2**
11:00-11:30					
11:30-12:00					
12:00-12:30				**Lunch**	
12:30-13:00		**Lunch**	**Lunch**		**Lunch**
13:00-13:30					
13:30-14:00		Subsection 3A **Chalcogenide 1**	Subsection 7A **Skutterudite & Clathrates**	Subsection 10A **SnSe and related materials**	Subsection 13 **Close & Plenary**
14:00-14:30	**Registration**				
14:30-15:00					
15:00-15:30					
15:30-16:00		**Coffee Break**	**Coffee Break**	**Coffee Break**	
16:00-16:30		Subsection 4A **New thermoelectric material**	**Poster Session**	**Poster Session**	
16:30-17:00			Excursion **Hankou Yangtze River Beach Park & Night cruising on Yangtze River and Han River**		
17:00-17:30					
17:30-18:00					
18:00-18:30	**Welcome Reception**				
18:30-19:00				Banquet **Award ceremony & Conference Dinner**	
19:00-19:30					
19:30-20:00					
20:00-20:30					
20:30-21:00					

	Sunday, May 29	Monday, May 30	Tuesday, May 31	Wednesday, June 1	Thursday, June 2
08:00-08:30			Subsection 5 **Plenary**	Subsection 8 **Award & Plenary**	Subsection 11B **Bismuth telluride and related materials 2**
08:30-09:00		Subsection 1 **Opening & Plenary**			
09:00-09:30					
09:30-10:00				**Coffee Break**	
10:00-10:30		**Coffee Break**	**Coffee Break**	Subsection 9B **Organic thermoelectric material 2**	**Coffee Break**
10:30-11:00		Subsection 2B **Materials development strategies 1**	Subsection 6B **Theory**		Subsection 12B **Material development strategies 2**
11:00-11:30					
11:30-12:00					
12:00-12:30				**Lunch**	
12:30-13:00		**Lunch**	**Lunch**		**Lunch**
13:00-13:30					
13:30-14:00		Subsection 3B **Measurements and simulations**	Subsection 7B **Nano materials 2**	Subsection 10B **Bismuth telluride and related materials 1**	Subsection 13 **Close & Plenary**
14:00-14:30	**Registration**				
14:30-15:00					
15:00-15:30					
15:30-16:00		**Coffee Break**	**Coffee Break**	**Coffee Break**	
16:00-16:30		Subsection 4B **Nano materials 1**	**Poster Session**	**Poster Session**	
16:30-17:00			Excursion **Hankou Yangtze River Beach Park & Night cruising on Yangtze River and Han River**		
17:00-17:30					
17:30-18:00					
18:00-18:30	**Welcome Reception**				
18:30-19:00				Banquet **Award ceremony & Conference Dinner**	
19:00-19:30					
19:30-20:00					
20:00-20:30					
20:30-21:00					

	Sunday, May 29	Monday, May 30	Tuesday, May 31	Wednesday, June 1	Thursday, June 2
08:00-08:30			Subsection 5 **Plenary**	Subsection 8 **Award & Plenary**	Subsection 11C **Strategies for high performance thermoelectrics**
08:30-09:00		Subsection 1 **Opening & Plenary**			
09:00-09:30					
09:30-10:00				**Coffee Break**	
10:00-10:30		**Coffee Break**	**Coffee Break**	Subsection 9C **Oxides**	**Coffee Break**
10:30-11:00		Subsection 2C **Thermoelectric generators 1**	Subsection 6C **Material development strategies 3**		Subsection 12C **Thermoelectric generators 2**
11:00-11:30					
11:30-12:00					
12:00-12:30				**Lunch**	
12:30-13:00		**Lunch**	**Lunch**		**Lunch**
13:00-13:30					
13:30-14:00		Subsection 3C **Space applications & power generator**	Subsection 7C **Module and related Applications**	Subsection 10C **Oxides & Chalcogenide**	Subsection 13 **Close & Plenary**
14:00-14:30	**Registration**				
14:30-15:00					
15:00-15:30					
15:30-16:00		**Coffee Break**	**Coffee Break**	**Coffee Break**	
16:00-16:30		Subsection 4C **Measurement technique and Module**	**Poster Session**	**Poster Session**	
16:30-17:00			Excursion **Hankou Yangtze River Beach Park & Night cruising on Yangtze River and Han River**		
17:00-17:30					
17:30-18:00					
18:00-18:30	**Welcome Reception**			Banquet **Award ceremony & Conference Dinner**	
18:30-19:00					
19:00-19:30					
19:30-20:00					
20:00-20:30					
20:30-21:00					

ADVANCE RIKO, Inc. Workshop
Date: June 1
Time:12:00-13:00
Place: Hong Kong Room

Linseis Workshop
Date: June 1
Time:16:15-17:15
Place: Hong Kong Room

8:20-10:00 Grand Ballroom

Subsection 1: Opening & Plenary

Chair: Qingjie Zhang

08:20-08:40 Welcome address

1. Donald T. Morelli, President, the International Thermoelectric Society.

2. Mayor, Wuhan City.

3. Jianing Cai, Deputy Director General, Ministry of Science and Technology of The P. R. China, Director, U. S. -China Clean Energy Research Center.

1K.1 **(Keynote)** **Julian Goldsmid,** University of New South Wales, Australia

08:40-09:20 Towards Improved Thermoelectric Generator Materials

1K.2 **(Keynote)** **Ctirad Uher,** University of Michigan, USA

09:20-10:00 Multi-Scale Thermoelectric Materials: Non-Equilibrium Preparation, Transport Behavior, and Applications

10:00-10:30 Coffee Break

10:30-12:30 **Ballroom 2**

Subsection 2A: **Half Heusler**

Chair: Pierre Ferdinand P. Poudeu

2A.1 **(Invited)** **Peter Franz Rogl**, Andriy Grytsiv, Matthias Guerth, Jan Vrestal, Vitaliy Romaka, Kunio Yubuta, Gerda Rogl, Ernst Bauer

10:30-10:54 **A Phase Diagram Approach to {Ti,Zr}NiSn - based High *ZT* Spinodal Thermoelectrics**

2A.2 (Oral) **Wenjie Xie**, Krzysztof Gałązkab, Tianhua Zou, Marc Widenmeyer, Anke Weidenkaff

10:54-11:06 **The Role of Excess Ni in ZrNiSn Based Half-Heusler Compound**

2A.3 **(Invited)** **Tiejun Zhu**

11:06-11:30 **High performance p-type Half-Heusler thermoelectric materials with *zT*>1**

2A.4 (Oral) **Alexander Page**, Anton Van der Ven, Pierre F. P. Poudeu, Ctirad Uher

11:30-11:42 **Understanding phase separation in (Ti,Zr,Hf)NiSn Half-Heusler Alloys**

2A.5 (Oral) **Chenguang Fu**, Tiejun Zhu, Xinbing Zhao

11:42-11:54 **Enhancing the Figure of Merit of Heavy-Band Thermoelectric Materials through Hierarchical Phonon Scattering**

2A.6 (Oral) **G. Rogl**, A. Grytsiv, E. Bauer, M. Zehetbauer, P. Rogl

11:54-12:06 **High *ZT* p- and n-type Half-Heusler alloys and skutterudites and their mechanical properties in comparison with other thermoelectric materials**

2A.7 **(Invited)** **Joseph Poon,** Long Chen, Sheng Gao, Xiaoyu Zeng, A. M. Dehkordi, Gezhou Zhang, Terry Tritt

12:06-12:30 **Half-Heulsers: Promising Mid-to-High Temperature Thermoelectric Materials**

12:30-13:30 **Lunch**

10:30-12:30 **Ballroom 3**

Subsection 2B: **Materials development strategies**

Chair: Ryoji Funahashi

2B.1 **(Invited)** **Anke Weidenkaff**, Wenjie Xie, Marc Widenmeyer, Songhak Yoon

10:30-10:54 **The European Thermoelectric Society, Complex oxides and intermetallics for future Thermoelectric Technologies**

2B.2 (Oral) **Yanliang Zhang**, Tony Varghese, Courtney Hollar, Nick Kempf

10:54-11:06 **High efficiency flexible nanostructured thermoelectric materials fabricated by screen printing of bismuth telluride nanocrystals**

2B.3 **(Invited)** **Zhifeng Ren**

11:06-11:30 **Engineering (*ZT*)eng vs. Efficiency and Power Factor vs. Output Power**

2B.4 (Oral) **Kornelius Nielsch**, Johannes Gooth, Ho Sun Shin, Svenja Bässler, Bacel Hamdou

11:30-11:42 **Chalcogenide-type Nanowires: An Ideal Model for the Study of Topological Insulator Nature versus Thermoelectric Performance**

2B.5 (Oral) **Ruoming Tian**, Chunlei Wan, Qingshuo Wei, Takao Ishida, Atsushi Yamamoto, Woosuck Shin, Kunihito Koumoto

11:42-11:54 **Development of n-type flexible TiS_2/organics superlattice film by liquid exfoliation and self-assembly approach**

2B.6 (Oral) **R. Pothin**, R. M. Ayral, A. Berche, F. Rouessac, P. Jund

11:54-12:06 **Differential Thermal Analysis, a useful tool for the improvement of the thermoelectric properties of ZnSb**

2B.7 **(Invited)** **M. J. Reece**, B. Du, F. Gucci, S. Grasso, G. D. Mastrorillo, G. Maizza

12:06-12:30 **Progress and Developments in Electric Current Assisted Sintering of Thermoelectric Materials**

12:30-13:30 **Lunch**

10:30-12:30 Hong Kong Room

Subsection 2C: Thermoelectric Generators

Chair: Thierry Caillat

2C.1 **(Invited)** **Baoxing Chen,** Jane Cornett, Samer Haidar, Helen Berney, Pat McGuinness, Bill Lane, Yun Gao, Yifen He, Nian Sun, Marc Dunham, Mehdi Asheghi, Ken Goodson, David Kryskowski, Yi Yuan, Khalil Najafi

10:30-10:54 **Material and Device Optimization For Energy Harvesting Application**

2C.2 (Oral) **P. Aranguren,** D. Astrain, A. Martínez, A. Rodríguez, G. Pérez

10:54-11:06 **Thermoelectric generation optimization through the thermal design of the system**

2C.3 (Oral) **Dario Narducci,** Bruno Lorenzi, Gaetano Contento, Vincenzo Sabatelli, Antonella Rizzo

11:06-11:18 **Efficiency Enhancement of Hybrid Solar Harvesters by Radiative Coupling between Photovoltaic and Thermoelectric Stages**

2C.4 (Oral) **S. M. Mir Hosseini,** A. Rezaniakolaei, L. A. Rosendahl, A. A. Enkeshafi

11:18-11:30 **Power Generation by Zinc Antimonide Thin Film under Various Load Resistances at its Critical Operating Temperature**

2C.5 (Oral) **Andrea Montecucco,** J. Siviter, P. Mullen, M. Compadre Torrecilla, E. A. Man, A. R. Knox

11:30-11:42 **Comparison of maximum power point tracking algorithms for constant temperature difference and constant heat**

2C.6 (Oral) **Jane Cornett,** Baoxing Chen, Samer Haidar, Helen Berney, Pat McGuinness, Bill Lane, Yuan Gao, Yifan He, Nian Sun, Marc Dunham, Mehdi Asheghi, Ken Goodson, Yi Yuan, Khalil Najafi

11:42-11:54 **Fabrication and Characterization of Bi_2Te_3-Based Chip-Scale Thermoelectric Energy Harvesting Devices**

2C.7 (Oral) **Martin J. Prest,** G. Min

11:54-12:06 **Design considerations and simulation of thermoelectric modules for concentrated solar energy conversion**

2C.8 **(Invited)** **Matthew L. Scullin**

12:06-12:30 **Commercial Progress in Thermoelectric Waste Heat Recovery**

12:30-13:30 **Lunch**

13:30-15:30 **Ballroom 2**

Subsection 3A: **Chalcogenide**

Chair: Alexander Burkov

3A.1 **(Invited)** **Franck Gascoin**

13:30-13:54 **New polar chalcogenides and antimonides: Chemistry, Bonding and transport properties**

3A.2 (Oral) **S. Aminorroaya Yamini**, D. Mitchell, Tong Li, M. Avdeev, Julie Cairney

13:54-14:06 **In-situ structural study of multiphase Pb-chalcogenide thermoelectric materials at elevated temperatures**

3A.3 (Oral) **Kaya Wei**, Artem Khabibullin, Troy Stedman, Lilia Woods, George Nolas

14:06-14:18 **Multinary Chalcogenides with Polaronic Transport and Enhanced Thermoelectric Performance**

3A.4 (Oral) **Jared Williams**, Donald Morelli

14:18-14:30 **Understanding the Superior Thermoelectric Performance of Sb-precipitated $Ge_{17}Sb_2Te_{20}$**

3A.5 (Oral) **Stefan Schwarzmüller**, Christina Fraunhofer, Frederik Nietschke, Daniel Souchay, Oliver Oeckler

14:30-14:42 **Heterostructures of transition metal tellurides and Sn/Sb/Te or Ge/Sb/Te thermoelectric materials**

3A.6 (Oral) **Qingfeng Song**, Pengfei Qiu, Feng Hao, Kunpeng Zhao, Xun Shi, Lidong Chen

14:42-14:54 **Thermoelectric properties of quaternary chalcogenides Cu_2XSnSe_4(X=Mn/Fe/Co)**

3A.7 (Oral) **Qian Zhang**, Eyob Kebede Chere, Feng Cao, Qing Zhu, Keshab Dahal, Gang Chen, Zhifeng Ren

14:54-15:06 **High Thermoelectric Performance of n-type PbTe and $PbTe_{1-y}S_y$ due to Deep Lying States Induced by Indium Doping**

3A.8 **(Invited)** **Emmanuel Guilmeau**, T. Barbier, P. Lemoine, M. Eriksson, G. Guélou, P. Vaqueiro, A. Powell

15:06-15:30 **Progress and challenges in tetrahedrite compounds**

15:30-16:00 **Coffee Break**

13:30-15:30 Ballroom 3

Subsection 3B: Measurements and simulations

Chair: Wenqing Zhang

3B.1 **(Invited)** **Olivier Delaire**

13:30-13:54 **Anharmonic Phonons Near Lattice Instabilities in SnSe, SnTe, and PbTe: Investigations with Neutron/X-ray Scattering Measurements and First-Principles Simulations**

3B.2 (Oral) **Wu Li**, Natalio Mingo

13:54-14:06 **Role of the filler in the reduction of thermal conductivity in fully filled skutterudites**

3B.3 (Oral) **Mei-Jiau Huang**, Pei-Sheng Chien, Kuan-Chung Su

14:06-14:18 **An Investigation into the Full-Spectrum Monte-Caro Simulation of Phonon Flow**

3B.4 (Oral) **Fei Ren**, Robert Schmidt, Eldon Case, Jong K. Keum, Bosen Qian, Ke An

14:18-14:30 **Neutron scattering study of temperature-induced nanostructural evolution in PbTe-PbS thermoelectric material**

3B.5 (Oral) **Hyun-Sik Kim**, Stephen D. Kang, Yinglu Tang, Riley Hanusa, G. Jeffrey Snyder

14:30-14:42 **Dislocation strain as the mechanism of phonon scattering at grain boundaries**

3B.6 (Oral) **Chongze Hu**, Xiaoyu Zeng, Jingsong Huang, Jian He, Bobby G. Sumpter, Menghan Zhou, Yufei Liu, Huijuan Zhao, Terry M. Tritt

14:42-14:54 **Probing the Role of La Fillers and Sb Vacancies in $CoSb_3$ Skutterudites**

3B.7 (Oral) **Cheng-Tang Li**, Yao-Hsiang Chen, Chien-Neng Liao

14:54-15:06 **Electrically-induced Ag Migration in Bi-Sb-Te Compounds**

3B.8 **(Invited)** **Raphaël P. Hermann**

15:06-15:30 **An experimental phonon perspective on resonance bonding**

15:30-16:00 **Coffee Break**

13:30-15:30 Hong Kong Room

Subsection 3C: Space applications & power generator

Chair: Terry Tritt

3C.1 **(Invited)**	**Thierry Caillat**
13:30-13:54	**Skutterudite-Based Thermoelectric Technology for Integration into an eMMRTG for Space Power Applications**
3C.2 (Oral)	**David Woerner**
13:54-14:06	**Risk reduction for the system design of an enhanced MMRTG**
3C.3 (Oral)	**Jean-Pierre Fleurial**
14:06-14:18	**A Technology Roadmap for Thermoelectric-Based Space and Terrestrial Power Systems**
3C.4 **(Invited)**	**Lei PENG**, Baoguo REN
14:18-14:42	**Prospect of Radioisotope Thermoelectric Generator Application in China's Space Exploration**
3C.5 (Oral)	**Doug Crane**, J. Chase, H. Arora, M. Melikian, L. Miller, D. Freeman, J. Weisse, B. Carreon, J. Reifenberg, A. Lorimer, M. Scullin
14:42-14:54	**Reliability and Performance of PowerCard™ and PowerModule™ Tetrahedrite Thermoelectric Devices**
3C.6 (Oral)	**Dongchen Zhu**, Chuqi Su, Yadong Deng, Yiping Wang
14:54-15:06	**Effect of cooling units on the performance of automotive exhaust-based thermoelectric generator**
3C.7 **(Invited)**	**Hsin Wang**, Keith J. Leonard
15:06-15:30	**Effect of High Fluence Neutron Irradiation on Transport Properties of Thermoelectrics**
15:30-16:00	**Coffee Break**

16:00-18:00 Ballroom 2

Subsection 4A: New thermoelectric material

Chair: Yuri Grin

4A.1 **(Invited)** **Holger Kleinke**

16:00-16:24 Thermoelectric Properties of Tl_5Te_3 Variants

4A.2 (Oral) **Svilen Bobev**

16:24-16:36 Synthesis and characterization of the extended series of quaternary Zintl phases $Ca_{13}REMnSb_{11}$ (RE = La-Nd, Sm, Gd-Dy)

4A.3 (Oral) **Jing Shuai**

16:36-16:48 Thermoelectric properties of Bi-based Zintl compounds $Ca_{1-x}Yb_xMg_2Bi_2$

4A.4 (Oral) **Saneyuki Ohno**, Umut Aydemir, Alexandra Zevalkink, Sevan Chanakian, Sabah K. Bux, G. Jeffrey Snyder

16:48-17:00 $Ca_9Zn_{4+x}Sb_9$ Zintl phase as a cheap, non-toxic thermoelectric material with tunable carrier concentration

4A.5 (Oral) **Tae-Soo You**, Gnu Nam, Woong-Jin Choi

17:00-17:12 Correlation between Thermoelectric Property and Phase Transition for the $Ca_{5-x}Yb_xAl_2Sb_6$ ($1.40 \le x \le 3.45$) Series: Theoretical and Experimental

4A.6 (Oral) **Gnu Nam**, Tae-Soo You

17:12-17:24 Site-Preference between Yb and Ca in the $Yb_{14-x}Ca_xAlSb_{11}$ ($4.81 \le x \le 10.57$) Series: Theoretical and Experimental Investigations

4A.7 (Oral) **Sheng-Qing Xia**

17:24-17:36 Size and electronic effects in some new Zintl phases and the related TE properties

4A.8 **(Invited)** **Guoyu Wang**

17:36-18:00 Intrinsic low thermal conductivity and enhanced thermoelectric performance in low dimensional structured materials

16:00-18:00 Ballroom 3

Subsection 4B: Nano materials

Chair: Jingfeng Li

4B.1 **(Invited)** **Yimin Chao**, Tiezheng Bian, Jamie N. Peck, Stephen Cottrell, Upali A. Jayasooriya

16:00-16:24 Hybrid silicon nanostructures with conductive ligands and their microscopic conductivities

4B.2 (Oral) **G. Gadea**, A. Morata, A. Tarancon, I. Donmez, M. Salleras, C. Calaza, L. Fonseca

16:24-16:36 Power response of planar microgenerators with different lengths of silicon nanowires

4B.3 (Oral) **Yasuhiro Hasegawa**, Ryobi Homma, Mioko Otsuka

16:36-16:48 Thermoelectric property of single crystal bismuth nanowire possessing from 300 nm- to 600 nm-order-diameter encased in quartz glass

4B.4 (Oral) **Masoud Aminzare**, Deniz P Wong, I-Nan Chen, Cheong-Wei Chong, Liang-Ming Lyu, Wei-Lun Chien, Wen-Pin Hsieh, Yang-Fang Chen, Li-Chyong Chen, Kuei-Hsien Chen

16:48-17:00 RF Magnetron Sputtered $Ge_{19}Sb_2Te_{22}$ Thin Films: Towards Improved Performance for Thermoelectric Microdevices

4B.5 (Oral) **Satoshi Hiroi**, Tsunehiro Takeuchi

17:00-17:12 Thermoelectric properties of full-Heusler Fe_2VAl-based thin-films

4B.6 (Oral) **Kentaro Watanabe**, Shuto Yamasaka, Shunya Sakane, Kentarou Sawano, Yoshiaki Nakamura

17:12-17:24 Independent control of phonon and electron transport in Si films including epitaxial Ge nanodots

4B.7 (Oral) **Chia-Hua Chien**, Ping-Chung Lee, Wei-Han Tsai, Tai-Hsiang Huang, Fan-Yun Chiu, Chih-Hao Lee, Yang-Yuan Chen

17:24-17:36 Observation of Size and Irradiation Effects on Thermal and Electrical Properties of Bi-Sb-Te Nanowire

4B.8 **(Invited)** **Chia-Jyi Liu**

17:36-18:00 Low temperature synthesis and transport properties of some thermoelectric materials

16:00-18:00 **Hong Kong Room**

Subsection 4C: **Measurement technique and Module**

Chair: Winnie Wong-Ng

4C.1 **(Invited)** **Joshua Martin**, Winnie Wong-Ng, Martin L. Green

16:00-16:24 **Progress in Developing Measurement Protocols and Standard Reference Materials for Thermoelectric Applications at NIST**

4C.2 (Oral) **Binghui Ge**, Yumei Wang

16:24-16:36 **Study of microstructure of thermoelectric materials by means of TEM**

4C.3(Oral) **Amer MELHEM**, Thomas LECAS, Cyril TCHIFFO, AbderazaK TALBI, Arnaud SOLTZ, Eric MILLON, Chantal BOULMER-LEBORGNE, Nadjib SEMMAR

16:36-16:48 **Simultaneously measurements of thermo-electrical properties (σ, κ, S) of thin film materials by a new homemade microscale device based on laser beam sample heating**

4C.4 (Oral) **Aijun Zhou**, Weihang Wang, Bin Yang, Jingze Li

16:48-17:00 **Thermal and electrical property characterization of micro- and meso-scale thick thermoelectric films**

4C.5 (Oral) **D. Vasilevskiy**, J.-M. Simard, R. A. Masut, S. Turenne

17:00-17:12 **Minimization of Specimen Size for Full Simultaneous Thermoelectric Performance Characterization of Materials**

4C.6 (Oral) **François GIBELLI**, Laurent LOMBEZ, Christophe GOUPIL, Jean-François GUILLEMOLES

17:12-17:24 **Optical contactless measurement of semiconductor thermoelectric transport properties**

4C.7 (Oral) **Xiao-yu Wang**, Bin Zhu, Yuan Yu, Na Gao, Fang-qiu Zu

17:24-17:36 **Analysis and amendments about Measurement methods of Seebeck Cofficient**

4C.8 (Oral) **Yuan-yuan Li**, Meng-qian Yang, Wei-fang Yang, Xiao-qing Liu, Zheng-wu Shen, Yun Yi, Wei Wang

17:36-17:48 **Investigations on the electrochemical reduction behaviors of Cu-Se compound in sulfuric acid solutions**

4C.9 (Oral) **Lindsay M. Miller**, B. Carreon, J. Weisse, J. Reifenberg, H. Arora, D. T. Crane, J. Chase, M. Scullin

17:48-18:00 **Achieving Reliable PowerCard™ Thermoelectric Devices with Stable Tetrahedrite & Magnesium Silicide Stannide Thermoelectric Materials**

8:00-10:00 Grand Ballroom

Subsection 5: Plenary

Chair: Jihui Yang

5K.1 **(Keynote)** **Donald Morelli**, Michigan State University, USA

08:00-08:40 Anharmonicity: A new design tool for thermoelectric materials?

5K.2 **(Keynote)** **Ryoji Funahashi**, National Institute of Advanced Industrial Science and Technology (AIST), Japan

08:40-09:20 An example of translational research using thermoelectric oxides

5K.3 **(Keynote)** **Lidong Chen**, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

09:20-10:00 Thermoelectrics in China

10:00-10:30 Coffee Break

10:30-12:30 Ballroom 2

Subsection 6A: Organic thermoelectric material

Chair: Jingkun Xu

6A.1 **(Invited)** **Bin Hu**

10:30-10:54 **Exploring New Driving Force To Develop Seebeck and Cooling Effects by Using Temperature-Dependent Surface Polarization Based on Semiconducting Organic and Perovskite Materials with Hybrid Conductor/Semiconductor/Conductor Thin-Film Design**

6A.2 (Oral) **Stephen D. Kang**, G. J. Snyder

10:54-11:06 **Generalized charge transport analysis for polymer thermoelectrics**

6A.3 (Oral) **Weifang Yang**, Xiaoqing Liu, Han Xu, Zhengwu Shen, Yun Yi, Wei Wang

11:06-11:18 **Fabrications of The Polyaniline Films by Pulse Potentiostatic Method in Acidic Solutions with Different Anions and Their Thermoelectric Performances**

6A.4 (Oral) **Sedat Ballikaya**, Alex Page, Abdulhadi Baykal, Muhammet Toprak, Ctirad Uher

11:18-11:30 **Thermoelectric Enhancement in PEDOT:PSS Hybrid Polymer by Aligning Polymer Chains via Magnetic Nanoparticles**

6A.5 (Oral) **Amina Mirsakiyeva**, Håkan W. Hugosson, Anna Delin

11:30-11:42 **Quantum Molecular Dynamics Studies of Thermoelectric Polymer Systems**

6A.6 (Oral) **Guangming Chen**

11:42-11:54 **Conducting Polymer/Carbon Nanoparticle Thermoelectric Composites**

6A.7 (Oral) **Naoki Toshima**, Keisuke Oshima, Junta Inoue, Shifumi Sadakata, Yukihide Shiraishi

11:54-12:06 **Hybrid-type Organic Thermoelectric Materials Containing Nanoparticles as a Carrier Transport Promoter**

6A.8 **(Invited)** **Wei Xu**, Yuanhui Sun, Lin Qiu, Hua Geng, Hanfu Wang, Fengjiao Zhang, Dazhen Huang, Peng Yue, Ying-shi Guan, Fei Jiao, Yi Meng Sun, Dawei Tang, Chong' an Di, Yuanping Yi, Daoben Zhu

12:06-12:30 **Flexible n-type high-performance thermoelectric thin films of poly(nickle-ethylenetetrathiolate) prepared by an electro-chemical method**

12:30-13:30 **Lunch**

10:30-12:30 **Ballroom 3**

Subsection 6B: **Theory**

Chair: Olivier Delaire

6B.1 **(Invited)** **Wenqing Zhang**, Yancheng Wang, Wujie Qiu, O. Hellman

10:30-10:54 **Diverse Lattice dynamics in complex thermoelectric materials**

6B.2 (Oral) **Hezhu Shao**

10:54-11:06 **A first-principles investigation on the intrinsic phonon transport in Cu_2GeSe_3**

6B.3 (Oral) **Yue Chen**, Hulei Yu, Shuai Dai

11:06-11:18 **Pressure induced high power factor in SnSe from first-principles calculations**

6B.4 (Oral) **M. Miyata**, T. Ozaki, M. Koyano

11:18-11:30 **Exploration of novel sulfide thermoelectric materials using first-principles calculation**

6B.5 (Oral) **Lan (Samantha) Li**

11:30-11:42 **First-Principles Investigation on Improving Thermoelectric Materials**

6B.6 (Oral) **Jiawang Hong**, Chen W. Li, A. F. May, D. Bansal, S. Chi, T. Hong, G. Ehlers, Olivier Delaire

11:42-11:54 **First-principles investigations of electronic instability and phonon anharmonicity in thermoelectric SnSe**

6B.7 (Oral) **Min-Wook Oh**

11:54-12:06 **Thermoelectric properties with modulated band structures**

6B.8 **(Invited)** **Yukari Katsura**, Jun-ichi Iwata, Atsushi Oshiyama

12:06-12:30 **Unfolded band structures of alloyed thermoelectric materials: visualization of band degeneracy in solid solutions**

12:30-13:30 **Lunch**

10:30-12:30 **Hong Kong Room**

Subsection 6C: **Material development strategies**

Chair: Hsin Wang

6C.1 **(Invited)** **W. Wong-Ng**, Y. Yan, J. Martin, M. Otani, S. Barron, N. Nguyen, E.L. Thomas, K. Talley, X.Tang, M.L. Green

10:30-10:54 **Combinatorial approach in Thermoelectric Materials**

6C.2 (Oral) **Hiromasa Tamaki**, Hiroki K. Sato, Tsutomu Kanno

10:54-11:06 **Computational screening and discovery of high thermoelectric performance in n-type $Mg_3(Sb,Bi)_2$**

6C.3 (Oral) **Sam Miller**, Prashun Gorai, Brenden Ortiz, Eric Toberer, Vladan Stevanovic

11:06-11:18 **Validation of semi-empirical thermal conductivity model across structure and chemical space**

6C.4 (Oral) **Gao Mina**, Nicholas J. E. Adkinsb, Jorge García-Cañadasa, Stephen McCainb, Ashley Brewa, Bastian Hauptsteinb, David J. Jarvis

11:18-11:30 **A combinatorial approach for accelerated discovery of new thermoelectric intermetallic compounds**

6C.5 (Oral) **Ruizhi Zhang**, Kan Chen, Baoli Du, Michael J. Reece

11:30-11:42 **New thermoelectric sulphide ceramics identified by high-throughput screening**

6C.6 (Oral) **Pingjun Ying**, Jiong Yang, Xiaohua Liu, Chenguang Fu, Wenqing Zhang, Xinbing Zhao, Tiejun Zhu

11:42-11:54 **Weak chemical bonding leads to intrinsically low thermal conductivity in α-MgAgSb thermoelectric materials**

6C.7 (Oral) **Cheng-Lung Chen**, Wan-Ting Chiu, Tai-Hsiang Huang, Yang-Yuan Chen

11:54-12:06 **Optimize the thermoelectric performance of $Sb_{2-x}In_xTe_3$ in a spark plasma sintering process**

6C.8 **(Invited)** **Prashun Gorai**, E. S. Toberer

12:06-12:30 **New approaches to thermoelectric materials discovery and design**

12:30-13:30 **Lunch**

13:30-15:30 Ballroom 2

Subsection 7A: Skutterudite & Clathrates

Chair: Qiang Li

7A.1 **(Invited)** **Jihui Yang**

13:30-13:54 Electronegative Guests in $CoSb_3$

7A.2 (Oral) **Yinglu Tang**, Estelle Sanz, Stéphane Gorsse, G. Jeffrey Snyder

13:54-14:06 Phase diagram study of Ce-Co-Fe-Sb quaternary system and solubility region of $Ce_yCo_{4-x}Fe_xSb_{12}$ skutterudites at 973 K

7A.3 (Oral) **Junqing Guo**, Ge Nie, Atsuro Sumiyoshi, Taketoshi Tomida, Kenji Mukaiyama, Takahiro Ochi, Shogo Suzuki, Masaaki Kikuchi

14:06-14:18 Development of skutterudite thermoelectric materials and modules

7A.4 (Oral) **Ken Kurosaki**, Seongho Choi, Yuji Ohishi, Hiroaki Muta, Shinsuke Yamanaka, Satoshi Maeshima

14:18-14:30 Enhanced thermoelectric properties of Ga and In co-added $CoSb_3$

7A.5 (Oral) **Tsuneyoshi Nakayama**, Yaping Liu, Qing Xi, Jun Zhou, Baowen Li

14:30-14:42 Glasslike Phonon Dynamics in Thermoelectric Clathrates

7A.6 (Oral) **Hazel Reardon**, Kasper A. Borup, Anders B. Blichfeld, Bo B. Iversen

14:42-14:54 Defining the Thermal Stability of $Ba_8Ga_{16-x}Ge_{30+x}$ and its Future in Thermoelectrics

7A.7 (Oral) **Elvis Shoko**, Udo Schwingenschloegl

14:54-15:06 Understanding Rattler-Cage Interactions by Cross-Spectral Analysis of Molecular Dynamics Trajectories

7A.8 **(Invited)** **G. S. Nolas**, K. Wei, A. Khabibullin, L. M. Woods

15:06-15:30 Low thermal conductivity thermoelectric materials: Clathrates and new materials research from a synergistic theoretical and experimental research approach

15:30-16:00 Coffee Break

13:30-15:30 Ballroom 3

Subsection 7B: Nano materials

Chair: Mercouri G. Kanatzidis

7B.1 **(Invited)** **Jong-Soo Rhyee**

13:30-13:54 **Nano precipitation and interface effect in thermoelectric bulk composites**

7B.2 (Oral) **Di Wu**, L. D. Zhao, F. Zheng, L. Jin, M. G. Kanatzidis, J. Q. He

13:54-14:06 **Understanding the Process of Nanostructuring in Thermoelectrics and its Effects on Lattice Thermal Conductivity**

7B.3 (Oral) **Zhi-Gang Chen**, Lei Yang, Min Hong, Jin Zou

14:06-14:18 **Interfacial Phonon Scattering Enhance the Thermoelectric Performance**

7B.4 (Oral) **Maria Ibáñez**, Zhishan Luo, Aziz Genç, Laura Piveteau, Silvia Ortega, Doris Cadavid, Oleksandr Dobrozhan, Yu Liu, Maarten Nachtegaal, Mona Zebarjadi, Jordi Arbiol, Maksym V. Kovalenko, Andreu Cabot

14:18-14:30 **High-Performance Thermoelectric Nanocomposites from Nanocrystal Building Blocks**

7B.5 (Oral) **Seokwoo Jeon**, Kisun Kim

14:30-14:42 **Thermoelectric Enhancement of Al-doped ZnO Thin Shell 3D Nanostructures via Proximity Field Nanopatterning**

7B.6 (Oral) **Maria Eugenia Toimil-Molares**, M. Cassinelli, P. Kühn, C. Trautmann, F. Völklein, K.-O. Voss, M. F. Wagner

14:42-14:54 **Thermoelectrical characterization of $Bi_{1-x}Sb_x$ nanowire arrays as a function of wire diameter and geometrical arrangement**

7B.7 (Oral) **Yu Liu**, Doris Cadavid, Silvia Ortega, Oleksandr Dobrozhan, Andreu Cabot

14:54-15:06 **Thermoelectric properties of I-V-VI nanomaterials produced from the bottom up assembly of colloidal nanocrystal building blocks**

7B.8 **(Invited)** **Takao Mori**

15:06-15:30 **Utilizing nanotechnology and novel materials to develop viable thermoelectrics**

15:30-16:00 **Coffee Break**

13:30-15:30 Hong Kong Room

Subsection 7C: Module and related Applications

Chair: Jean-Pierre Fleurial

7C.1 **(Invited)** **Yuri Grin**

13:30-13:54 **Thermoelectric modules on base of intermetallic clathrates: pro and contra**

7C.2 (Oral) **Karina R. Tarantik**, M. Kluge, K. Bartholomé, E. Geczi, U. Vetter, M. Vergez, U. Nusse, K. Schnürle, J. König

13:54-14:06 **Reproducibility and Reliability in Manufacturing Thermoelectric Modules based on half-Heusler Compounds**

7C.3 (Oral) **Tsunehiro Takeuchi**, Yohei Kinoshita, Yoshio Ohashi, Taizo Yoshinaga, Takeo Yamaguchi, Mamoru Ishikiriyama

14:06-14:18 **Development thermal rectifiers using thermoelectric chalcogenide Ag_2Ch (Ch = S, Se, and Te)**

7C.4 (Oral) **Manikandan Sundararaj**, S. C Kaushik

14:18-14:30 **Transient Thermal Behaviour of Annular Thermoelectric Cooling system**

7C.5 (Oral) **Ming Chen**, Xuexun Guo, Gangfeng Tan

14:30-14:42 **Novel Engine Exhaust-based TEG solid medium for Hot-side Temperature Stability Control**

7C.6 (Oral) **Jonathan Siviter**, A. Montecucco, P. Mullen, M. Compadre, E. Man, A. Knox

14:42-14:54 **Comparative analysis of characterisation of THP and maximum efficiency power electronics**

7C.7 (Oral) **Qiushi Wan**, Yadong Deng, Chuqi Su, Yiping Wang

14:54-15:06 **Optimization of a localized air conditioning system using thermoelectric devices for commercial vehicle**

7C.8 **(Invited)** **Michihiro Ohta**, Priyanka Jood, Koichiro Suekuni, Toshiro Takabatake, Mercouri G. Kanatzidis, Atsushi Yamamoto

15:06-15:30 **Nanostructured PbTe and Colusite-based Thermoelectrics: Comprehensive Development from Materials to Modules**

15:30-16:00 **Coffee Break**

16:00-16:30 Grand Ballroom of Wanda Realm Hotel

Poster Session

Chair: Wenyu Zhao, Ctirad Uher, F. Gascoin, K. Koumoto, Jong-Soo Rhyee

8K

8:00-10:00 Grand Ballroom

Subsection 8: **Award & Plenary**

Chair: Donald Morelli

8K.1 **Outstanding Achievement Awardee**

08:00-08:40

8K.2 **Young Investigator Awardee**

08:40-09:20

9:20-10:00 **Coffee Break**

10:00-12:00 **Ballroom 2**

Subsection 9A: **Cu_2X-based materials**

Chair: Steven N. Girard

9A.1 **(Invited)** **Xun Shi**, Pengfei Qiu, Lidong Chen

10:00-10:24 **Stability study in Cu-based liquid-like thermoelectric materials**

9A.2 (Oral) **David Voneshen**, R. Bewley, J. P. Goff

10:24-10:36 **Cu diffusion and its impact on the lattice dynamics of Cu_2Se**

9A.3 (Oral) **Trevor P. Bailey**, S. Hui, A. Olvera, H. Chi, P. F. P. Poudeu, C. Uher

10:36-10:48 **Enhanced *ZT* and Attempts to Chemically Stabilize Cu_2Se via Sn Doping**

9A.4 (Oral) **Pengfei Qiu**, Xiaobei Wang, Tiansong Zhang, Xun Shi, Lidong Chen

10:48-11:00 **Compound Defects and Thermoelectric Properties in Ternary CuAgSe-based Materials**

9A.5 (Oral) **Lei Yang**, Zhi-Gang Chen, Jin Zou

11:00-11:12 **Nanostructure Engineering on Cu_2Se-based Thermoelectric Materials**

9A.6 (Oral) **Sixin Wu**, Chunhong Luan, Ping Yang, Jing Jiang, Yinglin Liang, Yi Niu, Chao Wang

11:12-11:24 **A one-step synthesis of high *ZT* $Cu_{2-x}S(0<x<0.2)$**

9A.7 (Oral) **Jiong Yang**, Yongxing Sun, Lili Xi, Wenqing Zhang

11:24-11:36 **The Chalcogen-Based Conductive Network in Copper Chalcogenide**

9A.8 **(Invited)** **Pierre F. P. Poudeu**, Alan Olvera, Nick Moroz, Alexander Page, Ctirad Uher

11:36-12:00 **Electronic and thermal transports is nanostructured Cu_2Se-based Thermoelectric Materials**

12:00-13:30 **Lunch**

10:00-12:00	Ballroom 3
Subsection 9B:	**Organic thermoelectrics**
Chair:	Yimin Cao

9B.1 **(Invited)**	**Jingkun Xu**, Fengxing Jiang, Congcong Liu
10:00-10:24	**The development of PEDOT:PSS-based thermoelectric thin-film**
9B.2 (Oral)	**Baoyang Lu**, Hua Gu, Hongtao Liu, Jingkun Xu
10:24-10:36	**Stable Thermoelectric Selenophene-3,4-Ethylenedioxythiophene Copolymers**
9B.3 (Oral)	**Yong Du**, Jun Li, Jiayue Xu
10:36-10:48	**Flexible Polypyrrole/Cotton Thermoelectric Composite Fabrics**
9B.4 (Oral)	**Ling Xu**, Yunchun Liu, Bin Hu
10:48-11:00	**Study the thermoelectric properties base on the Organic Materials and Thin Film Device**
9B.5 (Oral)	**Jun Zhou**, Yani Chen, Minhong He, Bin Liu, Ziqi Liang
11:00-11:12	**n-Type PVDF/Ag Nanowire Composites with Large Power Factor**
9B.6 (Oral)	**Haijun Song**, Kefeng Cai
11:12-11:24	**Preparation of Te Nanorod/PEDOT:PSS Composite Films for Flexible Thermoelectric Power Generator**
9B.7 (Oral)	**Stephen D. Kang**, G. J. Snyder
11:24-11:36	**Impact of inhomogeneous disorder in polymer semiconductors on their charge transport properties and thermoelectric performance**
9B.8 **(Invited)**	**Kunihito Koumoto**, R. Tian, Y. F. Wang, Q. S. Wei, T. Ishida, W. S. Shin, A. Yamamoto, C. L. Wan
11:36-12:00	**Exfoliation-Reassembly Process to Fabricate TiS_2/Organic Hybrid Film with Large Area for Flexible Thermoelectric Module**
12:00-13:30	**Lunch**

10:00-12:00 Hong Kong Room

Subsection 9C: Oxides

Chair: Yuanhua Lin

9C.1 **(Invited)** **Young Soo Lim**, Woo Hyun Nam, Jeong Yong Lee, Won-Seon Seo

10:00-10:24 **ZnO-Graphene Nanocomposites: A new approach to PGEC**

9C.2 (Oral) **Slavko Bernik**, Mojca Presecnik, Mateja Košir

10:24-10:36 **The role of microstructure in the enhancement of the thermoelectric characteristics of oxide ceramics**

9C.3 (Oral) **Kenji Tanabe**, Ryuji Okazaki, Hiroki Taniguchi, Ichiro Terasaki

10:36-10:48 **Optical sheet conductivities of thermoelectric Co oxides**

9C.4 (Oral) **Susumu Fujii**, M. Yoshiya

10:48-11:00 **Suppression Mechanism of Phonon Thermal Conductivity in Layered Cobaltites by Molecular Dynamics**

9C.5 (Oral) **Hiroshi Nakatsugawa**, Miwa Saito, Yoichi Okamoto

11:00-11:12 **High temperature thermoelectric properties of perovskite type $Pr_{0.9}Sr_{0.1}Mn_{1-x}Fe_xO_3$ ($0 \le x \le 1$)**

9C.6 (Oral) **Hongchao Wang**, Jinze Zhai, Wenbin Su, Jian Liu, Chunlei Wang

11:12-11:24 **High temperature thermoelectric performance of delafossite**

9C.7 (Oral) **Li You**, Jiye Zhang, Jun Luo

11:24-11:36 **Thermoelectric performance optimization of layered-structure oxychalcogenides**

9C.8 **(Invited)** **Masato Yoshiya**, Daisuke Kanayama, Susumu Fujii

11:36-12:00 **Selective Control of Transport Properties in Layered Titanium Oxides**

12:00-13:30 **Lunch**

13:30-15:42 **Ballroom 2**

Subsection 10A: **SnSe and related materials**

Chair: Lidong Zhao

10A.1 **(Invited)** **Mercouri G. Kanatzidis**

13:30-13:54 **Hierachical and single phase thermoelectrics**

10A.2 (Oral) **Fu Li**, Yiwen Li, Feiyu Kang, Jing-Feng Li

13:54-14:06 **Enhanced Mid-temperature Thermoelectric Performance in Textured SnSe Polycrystals Made of Solvothermally Synthesized Powders**

10A.3 (Oral) **Sunglae Cho**, Anh Tuan Duong, Van Quang Nguyen, Van Thiet Duong, Jungdae Kim

14:06-14:18 **The achievement of high *ZT* in n-type SnSe single crystal**

10A.4 (Oral) **Jingtao Xu**, Yajie Fu, Xue Wang, Xiaojian Tan, Guo-Qiang Liu, Hezhu Shao, Haochuan Jiang, Jun Jiang

14:18-14:30 **Thermoelectric properties of textured polycrystalline SnSe**

10A.5 (Oral) **Jungdae Kim**, Trinh Thi Ly, Taehoon Kim, Anh Tuan Duong, Ganbat Duvjir, S.H. Rhim, Sunglae Cho

14:30-14:42 **STM study on the surface structures and defects of SnSe**

10A.6 (Oral) **Xiaojian Tan**, Jun He, Hezhu Shao, Jingtao Xu, Guoqiang Liu, Jun Jiang

14:42-14:54 **Convergence of valence bands and enhanced thermoelectric performance in SnTe**

10A.7 (Oral) **Kunling Peng**, Xu Lu, HengZhan, Si Hui, Ctirad Uher, Guoyu Wang, Xiaoyuan Zhou

14:54-15:06 **Broad temperature plateau for high *ZT*s in heavily doped p-type SnSe single crystals**

10A.8 (Oral) **Yuanhu Zhu**, Peng Jiang

15:06-15:18 **Enhanced thermoelectric performance of Ag_2S doped SnSe with nanostructure**

10A.9 **(Invited)** **Yang-Yuan Chen**, Pai-Chun Wei, S. Bhattacharya, J. He, S. Neeleshwar, R. Podila, Che-Yin Lee, Tsu-Lien Hung, A. M. Rao

15:18-15:42 **Thermoelectric properties of single-crystalline SnSe**

15:42-16:00 **Coffee Break**

13:30-15:42 Ballroom 3

Subsection 10B: Bismuth telluride and related materials

Chair: Jian He

10B.1 **(Invited)** **Jing-Feng Li**, Yu Pan

13:30-13:54 **Enhancing thermoelectric performance of n-type $Bi_2(TeSe)_3$ processed by mechanical alloying and spark plasma sintering**

10B.2 (Oral) **Chengcheng Zhang**, Xian Fan

13:54-14:06 **Vagaries of n-type Bi_2Te_3 based polycrystalline bulks and the thermoelectric properties optimization**

10B.3 (Oral) **Wan-Ling Chu**, Chien-Neng Liao

14:06-14:18 **Thermoelectric Properties and Microstructure of Sputtered Bi-Sb-Te/Te Multilayered Thin Films**

10B.4 (Oral) **Sung-Jin Jung**, Hyung-Ho Park, Beomjin Kwon, Seong Keun Kim, Dow-Bin Hyun, Jin-Sang Kim, Seung-Hyub Baek

14:18-14:30 **Thermoelectric properties of n-type $Bi_2Te_{3-x}Se_x$**

10B.5 (Oral) **Lydia Rathnam**, Yoo Jang Song, Jong Soo Rhyee, Jae Hoon Jung, Ohmyung Kwon, Su Dong Park, Bong Seo Kim

14:30-14:42 **Phase separation and interface thermoelectric properties in pseudo-quaternary composites of $Ag_{2-\delta}Te/Bi_{0.5}Sb_{1.5}Te_3$**

10B.6 **(Invited)** **Xiaoying Qin**, Yuanyue Li, Di Li, Hongxing Xin, Jian Zhang

14:42-15:06 **Enhanced thermoelectric performance through carrier scattering at heterojunction potentials in BiSbTe based composites**

10B.7 (Oral) **Tanakorn Khumtong**, Rachsak Sakdanuphab, Aparporn Sakulkalavek

15:06-15:18 **Microstructure and Electrical properties of Antimony telluride thin films deposited by RF magnetron sputtering on flexible substrate using different sputtered pressures**

10B.8 **(Invited)** **Guiying Xu**, Gang Liu, Tie Lin, Xiaofeng Wu, Sitong Niu

15:18-15:42 **Effect of minority carrier on the thermoelectric property of $Bi_{0.5}Sb_{1.5}Te_{2.7}Se_{0.3}$**

15:42-16:00 **Coffee Break**

13:30-15:42 Hong Kong Room

Subsection 10C: Oxides & Chalcogenide

Chair: Mike Reece

10C.1 **(Invited)** **Yuan-Hua Lin**, Jinle Lan, Guangkun Ren, Chunyao Liu, Yong Liu, Ce-Wen Nan

13:30-13:54 **High-Performance Oxides-Based Thermoelectric Ceramics for Energy Conversion**

10C.2 (Oral) **Xiaolin Wu**, Shufang Wang

13:54-14:06 **Epitaxial growth and thermoelectric properties of c-axis oriented $Bi_{1-x}A_xCuSeO$ single crystalline thin films**

10C.3 (Oral) **Dongwang Yang**, Xianli Su, Yonggao Yan, Tiezheng Hu, Hongyao Xie, Jian He, Ctirad Uher, Mercouri G. Kanatzidis, Xinfeng Tang

14:06-14:18 **Manipulating the combustion wave during self-propagating synthesis for high thermoelectric performance of layered oxychalcogenide $Bi_{1-x}Pb_xCuSeO$**

10C.4 (Oral) **Hui-Ching Chang**, Raman Sankar, Deniz P. Wong, Ying-Jay Yang, Fang-Cheng Chou, Li-Chyong Chen, Kuei-Hsien Chen

14:18-14:30 **Enhanced Thermoelectric Properties of Bulk BiCuTeO via Formation of Secondary Phase**

10C.5 (Oral) **Yifeng Wang**, Yawei Shen, Yang Ye, Lin Pan

14:30-14:42 **Cu_2SnS_3 and TiS_2 polycrystalline ceramics for environmentally friendly thermoelectric materials**

10C.6 **(Invited)** **Graeme R. Blake**, Anil Kumar, Paul A. Vermeulen, Bart J. Kooi, Jan-Willem Bos, Srinivas Popuri, Stefan Schwarzmüller, Oliver Oeckler

14:42-15:06 **Phase relations and thermoelectric properties of TAGS materials**

10C.7 (Oral) **Yubo Luo**, Junyou Yang, Qinghui Jiang

15:06-15:18 **Large enhancement of the thermoelectric performance of $CuInTe_2$ by in-situ replacement reaction**

10C.8 **(Invited)** **Jiaqing He**, Dan Feng, Fengshan Zheng, Di Wu, Wei Li, Minghui Wu, Li Huang, Li-Dong Zhao

15:18-15:42 **Investigation into the Extremely Low Thermal Conductivity in Ba heavily doped BiCuSeO**

15:42-16:00 **Coffee Break**

16:00-18:30 Grand Ballroom of Wanda Realm Hotel

Poster Session

Chair: Junyou Yang, George S. Nolas, Emmanuel Guilmeau, Yukari Katsura, Won Seon Seo

8:00-10:00 Ballroom 2

Subsection 11A: Silicide

Chair: Tiejun Zhu

11A.1 **(Invited)** **Alexander T. Burkov**

08:00-08:24 **Silicide thermoelectrics: recent progress in research**

11A.2 (Oral) **Bo Zhang**, Tao Zheng, Qingxiao Wang, Yihan Zhu, Moon Kim, Bruce E. Gnade

08:24-08:36 **Stability of Hf, Ti, Ni and Au electrical contacts on Mg_2Si**

11A.3 (Oral) **Steven N. Girard**

08:36-08:48 **Scalable Synthesis of Thermoelectric Silicide Nanomaterials by Molten Salt Magnesioreduction**

11A.4 (Oral) **Adrien Bercegol**, Mohsen K. Keshavarz, Dimitri Vasilevskiy, Remo A. Masut, Sylvain Turenne

08:48-09:00 **Hot extruded polycrystalline Mg_2Si with embedded XS_2 nano-particles (X: W, Mo)**

11A.5 (Oral) **Hwijong Lee**, Gwansik Kim, Byunghoon Lee, Kyu Hyoung Lee, Wooyoung Lee

09:00-09:12 **Microstructure and Thermoelectric Properties in Substituted Higher Manganese Silicides**

11A.6 (Oral) **Swapnil Ghodke**, A. Yamamoto, H. Ikuta, T. Takeuchi

09:12-09:24 **Enhancement of power factor by energy filtering effect in Re substituted HMS**

11A.7 (Oral) **Gagan Kumar Goyal**, T Dasgupta

09:24-09:36 **Excess Magnesium and its effects on the phase evolution and stability in $Mg_2Si_{0.3}Sn_{0.7}$ solid solution**

11A.8 **(Invited)** **Yuzuru Miyazaki**, Haruki Hamada, Hiroki Nagai, Masataka Kubouchi, Kei Hayashi

09:36-10:00 **Strategies and approaches to enhance thermoelectric properties of silicide-based materials**

10:00-10:30 **Coffee Break**

8:00-10:00 Ballroom 3

Subsection 11B: Bismuth telluride and related materials

Chair: Xun Shi

11B.1 **(Invited)** **Sung Wng Kim**

08:00-08:24 **Formation mechanism of Dense dislocation arrays in grain boundaries for high-performance bulk thermoelectrics**

11B.2 (Oral) **Kwang-Chon Kim**, Beomjin Kwon, Seoung Hwan Lee, Chong Min Koo, Hyun Jae Kim, Dow-Bin Hyun, Seung-Hyub Baek, Seong Keun Kim, Jin-Sang Kim

08:24-08:36 **High-Thermoelectric Performance of Metal-oxide Coated Bismuth Antimony Telluride Alloys**

11B.3 (Oral) **Piya Jitthammapirom**, Rachsak Sakdanuphab

08:36-08:48 **Effects of Bi_2Te_3:Sb_2Te_3 thickness on Seebeck coefficient of the single junction thermoelectric modules fabricated by RF magnetron sputtering on flexible substrate**

11B.4 (Oral) **Yongjun Kim**, Sun Jin Kim, Hyeongdo Choi, Ju Hyung We, Ji Seon Shin, Kevin K. Yi, Byung Jin Cho

08:48-09:00 **Improvement in Contact Resistance of Screen-printed $Bi_2Te_{2.7}Se_{0.3}$ Thick Films by Annealing in a Reduction Ambient**

11B.5 (Oral) **Wenwen Zheng**, Peng Bi, Ziyu Wang, Jing Shi, Rui Xiong, Chunqing He

09:00-09:12 **Positron Annihilation Study On Electrical and Thermal Property For Ternary $Sb_2Te_{3-x}Se_x$**

11B.6 (Oral) **Min Hong**, Zhi Gang Chen, Jin Zou

09:12-09:24 **$Bi_xSb_{2-x}Te_3$ Nanoplates with Enhanced Thermoelectric Performance due to Sufficiently Decoupled Electronic Transport Properties and Strong Wide-Frequency Phonon Scatterings**

11B.7 (Oral) **Lev Bulat**, Novotelnova A. V., Tukmakova A. S., Erezhep D. E., Osvenskii V. B., Sorokin A. I., Bochkov L. V.

09:24-09:36 **Simulation of SPS process for fabrication of thermoelectric materials with predictable properties**

11B.8 **(Invited)** **Huijun Liu**, Jinghua Liang, Long Cheng, Jie Zhang, Zhenyu Zhang

09:36-10:00 **Enhancing the thermoelectric performance and bridging the p- and n-type carrier asymmetry of Bi_2Te_3 thin films via topological surface states**

10:00-10:30 **Coffee Break**

8:00-10:00 Hong Kong Room

Subsection 11C: Strategies for high performance thermoelectric material

Chair: Lasse Rosendahl

11C.1 **(Invited)** **G. Jeffrey Snyder**

08:00-08:24 **The Use of Zintl Chemistry for Understanding Defects and Tuning Thermoelectrics**

11C.2 (Oral) **Lili Xi**, Jiong Yang, Wenqing Zhang

08:24-08:36 **Conductive Network in Complex Chalcogen-based Compounds**

11C.3 (Oral) **Hong-Yu Zhou**, Xin-Mu, Ping Wei, Wan-Ting Zhu, Wen-Yu Zhao, Qing-Jie Zhang

08:36-08:48 **Low contact resistance and improved stability in Ni/Cu/Al multilayer electrodes for Bi_2Te_3 thermoelectric modules**

11C.4 (Oral) **Maria Ibáñez**, R. Hasler, O. Drobozhan, O. Nazarenko, A. Cabot, M. Kovalenko

08:48-09:00 **Nanocrystal Surface Design to Control Carrier Density in Bottom-Up Produced Thermoelectric Nanocomposites**

11C.5 (Oral) **Chao-Feng Wu**, Heng Wang, Tian-Ran Wei, Jing-Feng Li

09:00-09:12 **Nano-SiC indcued doping effects in PbSe nanocomposites**

11C.6 (Oral) **Bin Zhu**, Fangqiu Zu

09:12-09:24 **Strikingly promote thermoelectric properties of free solidified $Bi_2Te_{2.7}Se_{0.3}$ n-type semiconductor by manipulating its parent liquid state and KI doping**

11C.7 (Oral) **Jae Sung Son**, Sung Hoon Park, Seungki Jo

09:24-09:36 **Nano- and molecular-solder introduced thermoelectric materials**

11C.8 **(Invited)** **Qiang Li**

09:36-10:00 **Transport Properties of Thermoelectric Materials near Quantum Critical Point (Dirac Semimetals)**

10:00-10:30 **Coffee Break**

10:30-12:30 **Ballroom 2**

Subsection 12A: **Chalcogenide**

Chair: Svilen Bobev

12A.1 **(Invited)** **Yanzhong Pei**

10:30-10:54 **Electron and Phonon Engineering in PbTe and SnTe**

12A.2 (Oral) **Radoslaw Chmielowski**, S. Bhattacharya, W. Xie, D. Péré, S. Jacob, R. Stern, K. Moriya, A. Weidenkaff, G. K. H. Madsen, G. Dennler

10:54-11:06 **High thermoelectric performance in Tellurium doped Paracostibite**

12A.3 (Oral) **RAMESH CHANDRA MALLIK**, Prem Kumar D. S, R. Chetty, O.E. Femi, K. Chattopadhyay, P. Malar

11:06-11:18 **Thermoelectric Properties of Bi-Doped Tetrahedrite**

12A.4 **(Invited)** **Li-Dong Zhao**

11:18-11:42 **Synergistically optimized electrical and thermal transport properties in SnTe**

12A.5 (Oral) **Fu-Hua Sun**, Jing-Feng Li, Zhi-Liang Li, Asfandiyar, Jin-Feng Dong, Yu Pan, Chao-Feng Wu

11:42-11:54 **Synthesis of tetrahedrite $Cu_{12}Sb_4S_{13-x}$ thermoelectric materials: effect of repeated milling and sintering**

12A.6 (Oral) **Peng Jiang**, Zhiwei Huang, Shuang Kong, Tianmin Wu, Wei Zhuang, Xinhe Ba

11:54-12:06 **Enhancement of Thermoelectric Performance of Transition Metal Dichalcogenide Semiconductors by Doping**

12A.7 **(Invited)** **Koichiro Suekuni**, Toshiro Takabatake, Michihiro Ohta

12:06-12:30 **Cu-S based synthetic minerals: environmentally benign thermoelectric materials**

12:30-13:30 **Lunch**

10:30-12:30 Ballroom 3

Subsection 12B: Material development strategies

Chair: Kunihito Koumoto

12B.1 **(Invited)** **Junyou Yang**

10:30-10:54 **Progressive regulation of electrical and thermal transport properties to high performance $CuInTe_2$ thermoelectric materials**

12B.2 (Oral) **Hongxia Liu**, Shukang Deng

10:54-11:06 **Preparation and electrical transport properties of Ge doped single crystalline β-Zn_4Sb_3 by the Sn-flux method**

12B.3 (Oral) **Isao Ohkubo**, Takao Mori

11:06-11:18 **Anomalous anisotropic thermoelectric transport properties and electronic structures in layered complex nitrides AMN_2 (A = Na, Cu; M = Ta, Nb)**

12B.4 (Oral) **Liangliang Li**, Funing Tseng

11:18-11:30 **Thermoelectric Properties and Fracture Toughness of ZnSb/SiC and ZnSb/SiC/Ag nanocomposites**

12B.5 (Oral) **Hiroaki Anno**, Takahiro Ueda, Kazuya Okamoto

11:30-11:42 **Effect of Codoping with Ga and P on Thermoelectric Properties of $Ba_8Al_{16}Si_{30}$ Clathrate System**

12B.6 (Oral) **Pengyan Mao**, K. P. Tai, H. Lei, X. Jiang

11:42-11:54 **Thin film Thermoelectric Micro-Cooler**

12B.7 (Oral) **Siqi Lin**, Yanzhong Pei

11:54-12:06 **Band nestification for high thermoelectric performance in elemental tellurium**

12B.8 **(Invited)** **Huaizhou Zhao**, Dandan Li, Shanming Li

12:06-12:30 **New thermoelectric materials with intrinsically low lattice thermal conductivity: MgAgSb based material and Cu-doped $Mn_{1-x}Cu_xSb_2Se_4$**

12:30-13:30 **Lunch**

10:30-12:30 **Hong Kong Room**

Subsection 12C: **Thermoelectric generators**

Chair: Matt Scullin

12C.1 **(Invited)** **Yadong Deng** ,Yiping Wang, Chuqi Su

10:30-10:54 **Intelligent Air Conditioning System of Commercial Vehicle Based on Thermoelectric Technology**

12C.2 (Oral) **Daryoosh Vashaee**, Koushik Devarajan, Amin Nozariasbmarz, Michael Hall, Abhishek Malhotra, Mehmet C Öztürk

10:54-11:06 **Thermoelectric Generators for Body Heat Harvesting**

12C.3 (Oral) **Yuan Deng**

11:06-11:18 **Design and fabrication of bismuth telluride based films and devices as generator**

12C.4 (Oral) **Tongjun Liu**, Tongcai Wang, Weiling Luan, Qimin Cao

11:18-11:30 **A study of heat pipe assisted thermoelectric generator for waste heat recovery**

12C.5 (Oral) **Jinwoo Kwak**, I. W. Lyo, B. W. Kim, H. S. Lee, J. K. Lee

11:30-11:42 **Thermoelectric generation system for vehicular applications (Applicable to engine part)**

12C.6 (Oral) **Alaa Attar**, HoSung Lee

11:42-11:54 **Studying the Optimum Load Resistance of Thermoelectric Generator System**

12C.7 (Oral) **Chien-Chang Wang**, Bo-Yi Sung, Yi-Ray Chen, Yu-Li Lin

11:54-12:06 **Design and Experimental Study of the 1kW Thermoelectric Generation System Applied for Waste Heat Recovery**

12C.8 **(Invited)** **Ya Yang**

12:06-12:30 **Hybridized nanogenerators for harvesting thermal and mechanical energies**

12:30-13:30 **Lunch**

13K

13:30-15:30 **Grand Ballroom**

Subsection 13: **Close and Plenary**

Chair: Lidong Chen

13K.1 **(Keynote)** **Claudia Felser**, Max Planck Institute for Chemical Physics of Solids, Germany

13:30-14:10 **Topology and thermoelectric properties in Heusler compounds**

13K.2 **(Keynote)** **Wooyoung Lee**, Yonsei University, Korea

14:10-14:50 **How to Make That Breakthrough in Nano-thermoelectricity: Structure-engineered Single-crystalline Bi nanowires**

Xinfeng Tang, Conference Chair

14:50-15:30 **Close Remarks**

15:30-16:30 Tuesday, May 31, 2016 Grand Ballroom of Wanda Realm Hotel
16:00-18:30 Wednesday, June 1, 2016 Grand Ballroom of Wanda Realm Hotel

P001 **Yifen Zhao,**
Phase transitions, electronic and mechanical properties for wurtzite-derived and zincblende-derived stannite Cu_2ZnSnS_4 under pressure

P002 **Weifang Yang**, Xiaoqing Liu, Yuanyuan Li, Han Xu, Wei Wang,
Effect of different electrode materials on the electropolymerization process of aniline in nitric acid media

P003 **Bulat L. P.**, Pshenay-Severin D. A., Ivanov A. A.,Osvenskii V. B., Parkhomenko Yu. N.,
On heat capacity of Cu_2Se

P004 **Kunpeng Zhao**, Pengfei Qiu, Tiansong Zhang, Dudi Ren, Xun Shi, Lidong Chen,
Enhanced thermoelectric performance in $Cu_2Se_{1-x}S_x$ solid solutions

P005 **Yaju Zhu**, Yao Li, Pengcheng Zhai, Jialiang Li,
Thermoelectric Properties of Se-doped Mg_2Si via HTHP

P006 **Yao Yao**, Bo-Ping Zhang, Shun Li, Yao-Chun Liu, Chao Gao,
Fabrication and thermoelectric performance of $Cu_{1.8-x}Ag_xS$ polycrystals

P007 **Yang Zeng**, Guang-Xing Liang, Ping Fan, Ju-Guang Hu, Jun Zhao, Xiang-Hua Zhang, Hong-Li Ma, Jing-Ting Luo, Yi-Zhu Xie, Dong-Ping Zhang,
The structural, optical and thermoelectric properties of single target sputtered $Cu_2ZnSn(S,Se)_4$ thin film

P008 **Peng Qin**, Zhen-Hua Ge, Jing Feng,
Enhanced thermoelectric performance of polycrystalline Cu_9S_5 bulk materials via Sn doping

P009 **Parisa Jafarzadeh**, Holger Kleinke,
New Thermoelectric Copper Chalcogenides

P010 **Dawei Liu**, A. J. Jin, Wenbo Peng, Qiming Li, Hu Gao, Lianjun Zhu,
Micro thermoelectric generators fabricated with low cost mechanical machining processes

P011 **Jang-Yeul Tak**, Sang Tae Lee, Won-Seon Seo, Il-Ho Kim, Hyung Koun Cho, Young Soo Lim,
Thermoelectric properties of $Cu_{1.98}Se$ compound prepared by melt-spinning

P012 **Wujie Qiu**, Xuezhi Ke, Wenqing Zhang,
Part-crystalline Part-amorphous State and Structure Family in Room-Temperature Cu_2Se with "Soft" Sublattice

P013 Y. Bouyrie, C. Candolfi, **V. Ohorodniichuk**, J.-B. Vaney, Ph. Masschelein, A. Dauscher, B. Lenoir,
Thermoelectric properties of colusite $Cu_{26}V_2Ge_6S_{32}$

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P014 **Meijie Yin**, Di Wu, Jiaqing He,
Statistic and theoretical analysis on nanoscale precipitates in Na-doped PbTe-PbS system with low lattice thermal conductivity

P015 **C. H. Cheng**, Y. S. Ke, C. P. Cheng, M. J. Dai, C. K. Liu, L. L. Liao,
Thermal Vacuum Bonding of Thermoelectric Lead Telluride Materials with Cu Electrode Using Ag-based Filler

P016 **Feng Gao**, Huadou Chai, Hongzhang Song,
Electrical transport properties of hot-pressed Cu_2Se nanocrystalline bulk alloys

P017 **Dou-Dou Liang**, Bo-Ping Zhang, Sheng-Liang Liu,
Enhanced thermoelectric properties in $Cu_{2-x}Ti_xSe$ superionic conductor prepared by mechanical alloying and spark plasma sintering

P018 **Yi Niu**, Chao Wang,
The Preparation and Thermoelectric Properties of $Cu_{2-x}S/SnS_2$ Composite

P019 **R. Nunna**, X. Shi, L. D. Chen,
Enhancement in Thermoelectric properties of Copper Sulphide $Cu_{2-x}S$ Compounds Prepared by Ball Milling and Spark Plasma Sintering

P020 **Luona Chen**,
Explored the thermoelectric properties of Cu-Sb-Se relevant materials

P021 **Lili Zhang**, Yong Yan, Jinjuan Guo, Baoguo Ren,
Influences of Heat Treatment and Doping Ag on the properties of PbSnTe-based thermoelectric Materials

P022 **Hongyao Xie**, Xianli Su, Yonggao Yan, Xinfeng Tang,
The Role of Zn in Chalcopyrite $CuFeS_2$: Enhanced thermoelectric properties of chalcopyrite $Cu_{1-x}Zn_xFeS_2$ with in-situnanoprecipitates

P023 **Teng Fang**, Tian Zhou, Hong Chen, Shuqi Zheng, Peng Zhang,
Electronic structures and thermoelectric properties of Ce-doped NbFeSb from first principles calculations

P024 **Matthias Schrade**, Cristina Echevarria-Bonet, Simen Eliassen, Kristian Berland, Raluca Tofan, Ole Martin Løvvik, Anette E. Gunnæs, Terje G. Finstad,
Thermal Properties of XNiSn (X=Ti, Zr, Hf) Half Heusler Alloys

P025 **Q. Y. Xue**, H. J. Liu, D. D. Fan, L. Cheng, B. Y. Zhao, J. Shi,
LaPtSb: a half-Heusler compound with high thermoelectric performance

P026 **Xiwen Zhang**, Yuanxu Wang,
Origin of high thermoelectric performance of $FeNb_{1-x}Zr/Hf_xSb$ alloys: a first principles study

P027 **Bo Yuan**, Lihong Huang, Xiaobo Lei, Qinyong Zhang,
Effect of Sb substitution by Sn on the thermoelectric properties of ZrCoSb

P028 **Nguyen Van Du**, Jamil Ur Rahman, Won-Seon Seo, Myong Ho Kim, Soonil Lee,
Thermoelectric Properties of N-Type Half-Heusler Compounds Synthesized by the Induction Melting Method

P029 **Ki Sung Kim**, Hyeona Mun, Kyu Hyoung Lee, Sung Wng Kim,
Reduced thermal conductivity by enhanced boundary scattering of nano grained TiNiSn-based half-Heusler compounds

P030 **K. H. Su**, C. C. Chang, T. W. Lan, C. H. Huang, Y. Ting, Y. R. Wu, M. H. Chiu, M. J. Wang, Y. Y. Chen, M. K. Wu,
Thermoelectric material characteristics of MgAgSb with adding Aerogel

P031 **K. H. Su**, C. C. Chang, T. W. Lan, C. H. Huang, Y. Ting, Y. R. Wu, M. H. Chiu, M. J. Wang, Y. Y. Chen, M. K. Wu,
Characteristics of MgAgSb-Platinum Hybrid Thermoelectric material

P032 **Tiezheng Hu**, Dongwang Yang, Xianli Su, Yonggao Yan, Xinfeng Tang,
Thermoelectric properties of ZrNiSn prepared by self-propagating high-temperature synthesis

P033 **Rizwan Akram**, Evarsite NSHIMIYE, Yonggao Yan, Xiaoyu She, Xianli Su, Xinfeng Tang,
Influence of Pt substitution on (Ti, Zr, Hf)NiSn based half-Heusler thermolelectric materials

P034 **R. Pothin**, R. M. Ayral, A. Berche, D. Granier, F. Rouessac, P. Jund,
Role of mecanosynthesis in the improvement of the figure of merit of ZnSb

P035 **Anders B. Blichfeld**, Kirsten M. Ø. Jensen, Ann-Christin Dippel, Hazel Reardon, Simon J. L. Billinge, Bo B. Iversen,
In-situ pair distribution function analysis of thermoelectric zintl thin films

P036 **Yuanxu Wang**, Qingxiu Yu,
Influence of forming As-As bond on the electronic structure and thermoelectric properties of Zintl compounds Ca_3GaAs_3 and $Ca_5Ga_2As_6$

P037 **Gnu Nam**, Woongjin Choi, Tae-Soo You,
Cation and Anion Doping Effect for the Thermoelectric Property of the $Ca_{11-x}Yb_xSb_{10-y}Ge_y$ ($2\leq x\leq 9$, $0\leq y\leq 3$) Series

P038 **Ruijuan Yan**, Xin-Xin Yang, Kai Guo, Jing-Tai Zhao,
Enhanced thermoelectric properties of $BaZn_2Sb_2$ via synergistic optimization strategy of co-doped Na and Sr

P039 **Hiromasa Tamaki**, Hiroki K. Sato, Tsutomu Kanno,
Origin of the carrier-type transition induced by Mg interstitials in Te-doped $Mg_{3+\delta}(Sb,Bi)_2$

P040 **Yulong Li**, Pengfei Qiu, Xun Shi, Lidong Chen,
Non-equilibrium synthesis for high performance thermoelectric filled-skutterudites

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P041 **Zi Liu**, Xuqiu Yang, Pengcheng Zhai,
Molecular Dynamics Study of Influence of Sb-vacancy Defects on Lattice Thermal Conductivity of Crystalline $CoSb_3$

P042 **Asfandiyar**, Tian-Ran Wei, Qing Tan, Chao-Feng Wu, Fu-Hua Sun, Yu Pan, Zhi-Liang Li, Jin-Feng Dong, Jing-Feng Li,
Thermoelectric performance of SnS and SnS-SnSe solid solutions prepared by mechanical alloying and spark plasma sintering

P043 **Yuhao Fu**, David J. Singh, Wu Li, Lijun Zhang,
Intrinsic ultralow lattice thermal conductivity of the unfilled skutterudite $FeSb_3$

P044 **Dong-Kil Shin**, Il-Ho Kim,
Thermoelectric Properties of p-Type Partially-double-filled $(Pr_{1-z}Nd_z)_yFe_{4-x}Co_xSb_{12}$ Skutterudites

P045 **Kwon-Min Song**, Dong-Kil Shin, Kyung-Wook Jang, Soon-Mok Choi, Soonil Lee, Won-Seon Seo, Il-Ho Kim,
Synthesis and Thermoelectric Properties of $Ce_{1-z}Pr_zFe_{4-x}Co_xSb_{12}$ Skutterudites

P046 **Chen Chen**, Jianghua Li, Qian Zhang, Long Zhang, Dongli Yu, Bo Xu,
Thermoelectric properties of high pressure synthesized n-type La-filled $CoSb_3$ skutterudite

P047 **Yulong Kang**, Hao Sun, Bo Xu,
Thermoelectric properties of high pressure synthesized dual-filled $CoSb_3$

P048 **Xianfu Meng**,
Enhanced thermoelectric performance of p-type filled skutterudites via the coherency strain fields from spinodal decomposition

P049 **Xiaohui Li**, Yulong Kang, Yongjun Tian, Bo Xu,
High pressure synthesized double filled $Ce_xCa_{0.3}Co_4Sb_{12}$ skutterudites with enhanced thermoelectric properties

P050 **P. Heinrich**, E. Bauer, A. Grytsiv, P. Rogl, J. Landaeta, I. Bonalde,
Superconductivity and Thermoelectricity in $(Ba,Sr)Pt_4Ge_{12-x}Sb_x$

P051 **Taketoshi TOMIDA**,
200 mm diameter sintering bodies fabrication of skutterudite thermoelectric materials by spark plasma sintering method

P052 **Geon-Sik Son**, Soon-Mok Choi, Kyu Hyoung Lee,
Effects of annealing process on thermoelectric transport properties of Yb-filled Fe_3CoSb_{12}

P053 **Dong-Ik Cheong**, Jae-Seong Yeo, Kisu Lee, Il-Sung Seo, Jung-Hun Lee, Il-Ho Kim, Won-Seon Seo,
Mechanical behavior of melt-quenched p-type $La_{0.9}Fe_3CoSb_{12}$ Skuttterudite

P054 **Pengfei Wen**, Yao Li, Shijie Ding, Bo Duan, Pengcheng Zhai, Qingjie Zhang,
The bending strength and thermoelectric properties of nano-TiN/ $Co_4Sb_{11.3}Te_{0.58}Se_{0.12}$ composites after annealing treatment

P055 **Xu Lu**, Xiaoyuan Zhou,
High temperature thermoelectric properties of Nd filled and Ge substituted p-type skutterudites

P056 **Eun-Ji Meang**, Won-Seon Seo, Soonil Lee,
Synthesis and Thermoelectric Properties of (In, Tl) Double-Filled Skuttterudites

P057 **Hongliang Dong**, Zhiqiang Chen, Yunshan Tang, Jincheng Liao, Gaoshan Huang, Shengqiang Bai, Shunyan Tao, Yongfeng Mei, Lidong Chen,
Protection strategies for skutterudite thermoelectric materials and devices

P058 **Yuhao Fu**, David J. Singh, Wu Li, Lijun Zhang,
New insights into the role of fillers in reducing thermal conductivity of skutterudites

P059 **Jiangying Peng**, Jin Zheng, Fanhao Shen, Kuo Zhang, Jian He, Jinsong Zeng, Wanli Xiao, Bing An,
Tailoring Skutterudite-Bi_2Te_3 Thermoelectric Nanocomposites via Synergistic Diffusion and Grain Boundary Effects

P060 **Ying Liang**,
Synthesis, Crystal Structure and Physical Properties of the Skutterudite-related phase $CoGe_{1.5}Se_{1.5}$

P061 **Hiroharu Sugawara**, Ayumi Inaba
Theoretical investigation of electronic structures of magnesium silicide (Mg_2Si) lightly doped by p-type impurity atoms

P062 **Deniz P. Wong**, Tian-Wey Lan, Yang-Yuan Chen, Li-Chyong Chen, Kuei-Hsien Chen,
Thermoelectric Properties of Concentric Shell Mg_2Si/MgO Composite

P063 **Sora-at Tanusilp**, Ken Kurosaki, Aikebaier Yusufu, Yuji Ohishi, Hiroaki Muta, Shinsuke Yamanaka,
Enhancement of Thermoelectric Properties of Bulk Si by Dispersing Size-Controlled VSi_2

P064 **Jialiang Li**, Gang Chen, Bo Duan, Yaju Zhu, Xiaojun Hu, Pengcheng Zhai, Peng Li,
Thermoelectric properties of $Mg_2Si_{0.995}Sb_{0.005}$ prepared by high pressure high temperature method

P065 **Guanting Yu**, Xiaohua Liu, Tiejun Zhu, Xinbing Zhao,
Enhancing the Figure of Merit of Mg_2(Si, Sn) Thermoelectric Materials through Sb and Zn co-doping

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P066 **Gwansik Kim**, Jeongmin Kim, Hwijong Lee, In Woong Lyo, Byung-Wook Kim, Sung Wng Kim, Kyu Hyoung Lee, Wooyoung Lee,
Co-doping of Al and Bi for the Enhancement of Thermoelectric Performance in Magnesium Silicide

P067 **Akio Yamamoto**, Swapnil Ghodke, Masaharu Matsunami, Tsunehiro Takeuchi,
Thermoelectric performance of higher manganese silicide containing a small amount of 5d transition metal elements

P068 **A. Shukla**, Gagan K. Goyal, T. Dasgupta,
Flux Synthesis of $Mg_2(Si, Sn)$ solid solution by the B_2O_3 encapsulation method

P069 **Kang Yin**, Xianli Su, Yonggao Yan, Ctirad Uher, Xinfeng Tang,
In-situ nanostructure design leading to high figure of merit in eco-friendly stable $Mg_2Si_{0.3}Sn_{0.7}$ solid solution

P070 **Afiqa Mohamad**, Yuji Ohishi, Yoshinobu Miyazaki, Hiroaki Muta, Ken Kurosaki, Shinsuke Yamanaka,
Enhancement of Thermoelectric Properties of $CrSi_2$ by Congener Elemental Substitution

P071 **Daisuke Kato**, Kouta Iwasaki, Masahito Yoshino, Tomoaki Yamada, Takanori Nagasaki,
Preparation and Thermal Stability Evaluation of Sb-doped Mg_2Si with High Carrier Concentration

P072 **Jianghua Li**, Chen Chen, Bo Xu,
High pressure synthesis of Sb-doped Mg_2Si with enhanced thermoelectric performance

P073 **Alexander E. Karkin**, Vladimir I. Voronin, Natalia V. Morozova, Sergey V. Ovsyannikov, Kenichi Takarabe, Yoshihisa Mori, Shigeyuki Nakamura, Vladimir V. Shchennikov,
Unconventional electronic properties of Mg_2Si thermoelectrics revealed by fast-neutron-irradiation doping

P074 **Xin Zhang**, Liang Zheng, Hongliang Liu, Ziqun Zhou, Qingmei Lu, Jiuxing Zhang, Feipeng Zhang,
Thermoelectric Properties of Highly Efficient Sb-doped $Mg_2Si_{0.3}Sn_{0.7}$ Solid Solutions

P075 **Y. Mito**, A. Ogino, S. Konnno, H. Udono,
Effects of Impurities on the Oxidation Resistance of Mg_2Si TE-leg

P076 **Xingkai Duan**, Yuezhen Jiang, Konggang Hu, Jing Kuang, Haixia Jin,
Effects of Ag-doping on electrical properties of $Ca_{(2+0.95)-x}Ag_xSi$ alloys

P077 **J. de Boor**, U. Saparamadu, J. Mao, K. Dahal, E. Müller, Z. Ren,
Thermoelectric properties of Li-doped $Mg_2(Ge,Sn)$ and $Mg_2(Si,Sn)$

P078 **Hiroyuki Inoue**, Yukihiro Isoda, Satoki Tada, Takahide Kobayashi,
Evaluation of electrical connection and power of Mg_2SiSn modules manufactured with a simple joining technique

P079 **H. Nagai**, H. Hamada, K. Hayashi, Y. Miyazaki,
Crystal structure and thermoelectric properties of Ru-substituted higher manganese silicides

P080 **Qiang Zhang**, Xianli Su, Yonggao Yan, Xinfeng Tang,
Ultra-fast synthesis and related phase transition of Mg_2Si and Mg_2Sn compounds

P081 **Tatsuhiko Taniguchi**, Shunya Sakane, Kentaro Watanabe, Takeyuki Suzuki, Takeshi Fujita, Yoshiaki Nakamura,
Thermoelectric properties of epitaxial β-$FeSi_2$ thin films/Si(111)

P082 **Isachenko G. N.**, Samunin A. Yu., Fedorov M. I., Zaitsev V. K., Gurieva E. A., Konstantionov P. P.,
Thermoelectric properties of p-$Mg_2Ge_{0.3}Sn_{0.7}$ solid solution

P083 **Hongxing Mi**, Zhongxia Duan, Hongyan Xu, Ju Xu, Li Han,
Thermoelectric property of Silicon Germanium alloy doped with phosphorus and boron

P084 **Yun Zheng**, Zhongzhen Luo, Dongxu Ji, Qingyu Yan, Meng Yeong Lee,
Enhanced mechanical properties of n-type $Mg_2Sn_{0.75}Ge_{0.25}$ materials with SiC nanodispersion

P085 **Shuping Deng**,
Preparation and thermoelectric properties of type-I Sr-filled Ge-based single crystalline clathrates by Sn flux method

P086 **J. Tang**, Z.S. Wang, X.M. Shi, Q. Hu, R. Ang,
P- and n-type $Ba_8Ga_{16}Ge_{30}$ Studied by Isotope Technique

P087 **Feng Cheng**,
Preparation and thermoelectric properties of Sn-based type-VIII single crystalline clathrate $(Ba/Eu)_8Ga_{16}Sn_{30}$ via Ga flux method

P088 **Wang-Jinsong**, Shen Lan-xian, Li De-cong, Cheng Feng, Liu Hong-xia, Deng Shu-kang,
The electronic structure of I-$M_8Ga_{16}Sn_{30}$(M=Ba, Sr, Yb) by First-priciple calculation

P089 **Shen Lan-xian**, Li De-cong, Liu Hong-xia, Liu Zhu-ming, Deng Shu-kang,
First-Principles study of the effect of Ge-doped on the electronic structure of type-VIII Sn-based

P090 **Long Zhang**, Bo Xu, Jianying Dong, Yongjun Tian,
Synthesis and Thermoelectric Properties of Yb-doped Ba-Ga-Ge Type-I Clathrate

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P091 **Jingtao Xu**, Jiazhen Wu, Hezhu Shao, Satoshi Heguri, Jun Jiang, Katsumi Tanigaki,
Physical and thermoelectric properties of clathrate Ba-TM-Ge single crystal by a flux method

P092 **E. Shoko**, Udo Schwingenschlögl,
Guest Atom Dynamics in Doubly-Filled Type II Si Clathrates and Prospects for Thermoelectric Development

P093 **Shukang Deng**,
Preparation and electrical transport properties of single crystalline β-Zn_4Sb_3 by α-Sn flux method

P094 **Jiaxin Di**, Hongtao Li, Guiying Xu, Ping Zou, Yanhua Zhang,
Thermoelectric properties of β-$Fe_{1-y}Te$ fabricated by high pressure sintering method

P095 **Jiawen Shen**, Yanzhong Pei,
Single parabolic band behavior in thermoelectric p-type $CuGaTe_2$

P096 **Jamil Ur Rahman**, Nguyen Van Du, Eun-Ji Meang, Won-Seon Seo, Myong Ho Kim, Soonil Lee,
Thermoelectric Properties of $Li_{1-x}NbO_2$ Synthesized by Conventional and Spark Plasma Sintering Method

P097 **Kévin Delime-Codrin**, Akio Yamamoto, Koichi Kitahara, Satoshi Hiroi, Tsunehiro Takeuchi,
Thermoelectric properties of lacunar spinel β- $In_{2-2x}Cu_xZn_xS_3$

P098 Zheng Huang, Tie-Yu Lü, Hui-Qiong Wang, **Shuo-Wang Yang**, Jin-Cheng Zheng,
Electronic and thermoelectric properties of the group-III nitrides (BN, AlN and GaN) atomic sheets under biaxial strains

P099 **D. Jiang**, R. Freer, F. Azough,
Thermoelectric study of annealed $Ba_6Ti_2Nb_8O_{30}$ with tungsten bronze structure

P100 **Kyung-Wook Jang**, In-Ki Kim, Il-Ho Ki,
Thermoelectric Properties of (Zn, Cd, Ag)Sb Compounds

P101 **Saneyuki Ohno**, Umut Aydemir, Stephen D. Kang, G. Jeffrey Snyder,
$RCuTe_2$ (R = Y, Dy): a new class of thermoelectric materials with $CuTe_4$-based layered structure

P102 **Naoki Sato**, Hideyasu Ouchi, Yoshiki Takagiwa, Kaoru Kimura,
Nowotny chimney-ladder compound in Fe-Ge system as a potential thermoelectric material

P103 **K. Tsuchiya**, A. N. P. Sussarrdi, S. Maruyama, T. Mori,
Enhancement of the thermoelectric properties of the Sm and Yb phase of RB_{66} single-crystals

P104 **Jianping Lin**,
The structural evolution of Zn_4Sb_3 from 300 K to 750 K

P105 **Feng Gao**, Yan Xiong, Yuchun Liu, Ling Xu,
Enhancing the Thermoelectric Figure of Merit in Organic-Inorganic Hybrid Perovskite with Ultralow Thermal Conductivity

P106 **Meng Pan**, Xin-Xin Yang, Kai Guo, Jing-Tai Zhao,
Crystal structure and thermoelectric properties of layered compound $SrFBiS_2$

P107 **Wenfeng Li**,
Structure and thermoelectric properties of the quaternary compound $Cs_2[PdCl_4]I_2$

P108 **Yanci Yan**, Lijie Guo, Dingfeng Yang, Xu Lu, Guoyu Wang, Xiaoyuan Zhou,
Enhancement in thermoelectric properties of $CuCrSe_2$ by Cu substituting

P109 **Libo Zhang**, Huilong Qi, Junling Gao, Lina Zhu, Tao Mao, Guiying Xu,
Thermoelectric Properties of $Mn_{1+x}Te$ (-0.0198, 0, 0.0408) Alloys Fabricated by HPS

P110 **K. Hayashi**, M. Eguchi, Y. Miyazaki,
Structural and Thermoelectric Properties of Ternary Full-Heusler Alloys

P111 **Ran-Ran Li**, Ping Wei, Hong-Yu Zhou, Xin Mu, Dan-Qi He, Wan-Ting Zhu, Xiao-Lei Nie, Wen-Yu Zhao,
Synthesis and Characterization of Highly Crystalline $YbAl_3$ Thin Films

P112 **Jing Jiang**, Chao Wang,
Thermoelectric properties of nanostructured chromium nitride composited with carbon nanotubes

P113 **Igor Knapp**, Ernst Bauer,
Effects of substitutions, vacancies and hotpressing on the thermoelectric properties of Fe_2VAl

P114 **Tingting Zhang**, Xianli Su, Yonggao Yan, Xinfeng Tang,
Synthesis and Characterization of Misfit Layer Compounds $(SbSe)_{1+x}(CrSe_2)$

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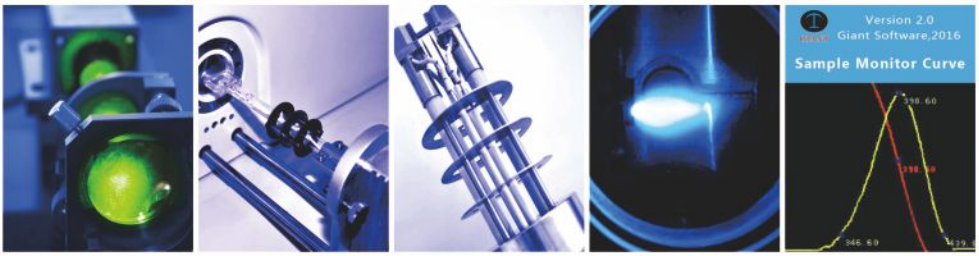

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