IHPC IHPS 2023

50th year of IHPC
Golden Jubilee

Joint 21st International Heat Pipe Conference and 15th International Heat Pipe Symposium

5th - 9th February 2023

IHPC / IHPS

Information Brochure

Hosted by RMIT University

Venue: Bld 16, Storey Hall
Level 5 - Sunday 5th Feb - Pre-registration
Level 5 - Monday 6th Feb - Welcome ceremony including all Keynote presentations
Level 7 - All parallel sessions, morning tea, lunch, afternoon tea
Level 5 - Thursday

Main Sponsor: Fujikura Ltd. Fujikura

Welcome

Welcome to Melbourne, the capital city of the Australian state of Victoria, Joint 21st International Heat Pipe Conference and 15th International Heat Pipe Symposium (21st IHPC / 15th IHPS). This document is a guide to what you need to know about the conference, the venues and the social program. It also includes the conference schedule.

The conference runs from Sunday 5th February to Thursday 9th February 2023 and is located at RMIT University City Campus:

Storey Hall (Building 16), 336–348 Swanston St, Melbourne.

Storey Hall, RMIT University

Main Sponsor Fujikura Ltd.

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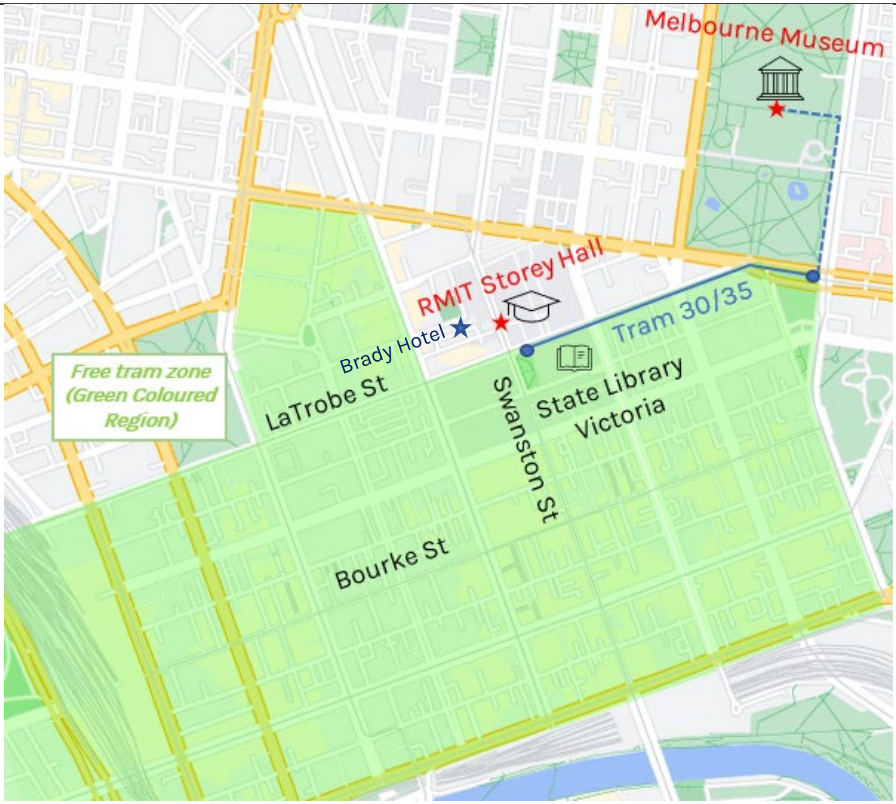
Transport to RMIT Storey Hall & Conference Dinner

You can catch a tram along Swanston Street (Tram 3, 3a, 5, 6, 16, 64, 67, 72) or La Trobe Street (Tram 30, 35, 24) to tram stops near RMIT Storey Hall. You can use the IOS or Android app ***Google maps***, ***Apple Maps***, ***TripGo*** or ***PTV Journey*** to help you plan your trip.



How to get to Melbourne Museum (Conference Banquet, 11 Nicholson St Carlton):

Walk or take the tram number 30/35 from LaTrobe St directly opposite the Green Brain next to the State Library Victoria, four stops until Nicholson St & Victoria Pde.

Walk North through the Carlton gardens, approximately 350m.

Free Tram Zone and Myki Card

There is a FREE Tram Zone in the inner city (within the green coloured region in the figure page 3). When travelling entirely in the Free Tram Zone, you don't need to touch on or carry a myki card. **Outside of the FREE tram zone you must have a valid myki card when you travel.**

You can buy and top up your myki at over 800 retailers including all 7-Eleven stores, the ticket office window at Premium Stations, from a myki machine located at all train stations and major tram and bus interchanges. Visit the Public Transport Victoria website for more information.

Attractions Nearby

Attractions

1. State Library of Victoria
2. Old Melbourne Gaol
3. Chinatown
4. Parliament House
5. Royal Exhibition Building
6. Melbourne Museum
7. Federation square
8. Immigration museum
9. Arts Centre Melbourne
10. National Gallery of Victoria
11. Royal Botanic Gardens
12. Convention & Exhibition Center

Shopping

1. Shopping Malls
2. Victoria Market
3. DFO South Wharf
4. Harbour Town

Entertainment

1. Sea Life Melbourne Aquarium
2. Marvel Stadium
3. Crown Casino
4. Melbourne Star Observation Wheel
5. Melbourne Cricket Ground

Major Train Stations

1. Melbourne Central Station
2. Flinders Street Station
3. Southern Cross Station

RMIT Storey Hall

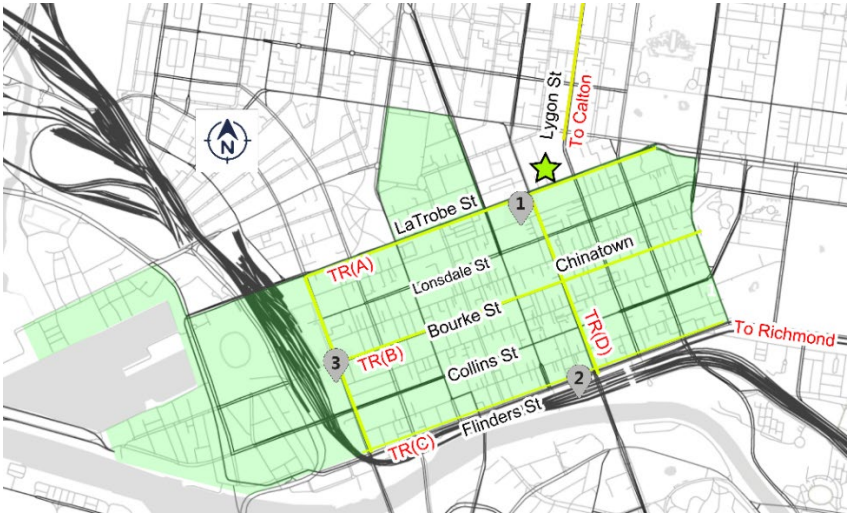
Eating out

Bistros, restaurants, cafes and coffee shops offer varied menus, prices and decor. Local specialties such as seafood and Australian wines are worth trying. At some restaurants you can keep the liquor bill down by taking your own wine or beer. These are called "BYO" restaurants, an abbreviation for "bring your own".

IOS/Android Apps: ***Zomato, Trip Advisor***

Inner city Eat Streets

CBD:	Little Bourke Street (Chinatown): Chinese
	Lonsdale Street in the CBD (Greek & Asian)
	Hardware Lane (Café's, mid-high-priced dining)
Carlton:	Lygon Street in Carlton (Little Italy)
	Rathdowne Street in Carlton (Mid-priced dining)
Richmond	Victoria Street in Richmond (Little Saigon)
	Swan Street in Richmond (Little Greece and casual dining)



Major Train Stations

1. Melbourne Central Station
2. Flinders Street Station
3. Southern Cross Station

Major Tram Routes:

TR(A) 1, 30, 35, 24.
TR(B): 95, 86, 96
TR(C): 35, 70
TR(D): 3, 3a, 5, 6, 16, 64, 67, 72

General Information

The following information is provided to make your attendance at the HPAUS 2023 in Melbourne as enjoyable and hassle free as possible. If you require assistance throughout the conference, please visit the Registration Desk and we will do everything we can to help you.

Guest Wi-Fi access

The venue will offer free Wi-Fi during the conference period

Host Name: RMIT-Guest

Wi-Fi code: 574110

You will need to sign in with your details (name, email address and contact number), Accept the terms of use and select 'Register'.

The Wi-Fi will be active for 12 hours from the time of registration. For internet access past this point guests will have to re-register.

Attendee Registration

- Location:

  Level 5 and 7, RMIT Storey Hall (Building 16), 336–348 Swanston St
- Registration Hours:

  Sun 05th Feb: 2:00 pm to 5:00 pm (Registration, Tea and coffee)
- Conference Languages

  The official language for the Conference is English.
- Badges & Ticket

  Each delegate registered for the conference will receive a name badge at the Registration and Information Desk. Dinner Ticket and emergency contact number will be in the badge package.

  This badge will be your official pass and must be worn to obtain entry to all sessions, conference catering and social functions. Name badges must be worn for admittance to all IHPC / IHPS 2023 events.

Message Centre

You can post or find messages on the message board located near the Registration Desk/ Information Desk. Any article found should be taken to the Registration Desk / Information Desk. Lost properties can be claimed at the same place. Any security concerns should be brought to the attention of the Conference Secretariat or any Committee member immediately.

Local organising committee contact: +61 04 2374 6561

Our committee can speak English, Mandarin, Thai, Persian, Hindi

Australia's primary emergency call – 000

Banking and Currency

- Banks & ATMs

  Banks are normally only open weekdays 9.30-4:00pm Monday to Friday.

  ATMs in Australia will usually allow withdrawal using any Australian-issued bank card. For international visitors, most ATMs allow withdraw using a card issued from a member of one of the international card networks.

- Credit Cards

  Credit cards are accepted at most restaurants and shops, the most widely used being Mastercard, Visa and American Express.

- Currency Exchange

  Decimal currency is used in Australia with the dollar as the basic unit (100 cents = $1). Notes come in $100, $50, $20, $10, and $5. Coins come in 5c, 10c, 20c, 50c, $1 and $2 denominations.

Time zone

Melbourne: UTC+10 hours

Tullamarine Airport Transfers to Melbourne City

- Skybus Express Bus Service (Airport - CBD):

  Location: Near the exit of Terminal 1 or Terminal 3.
  Duration: 20-30 minutes
  Cost: $22 for a one-way journey or $34 for a return.

- Public Transport Victoria

  Duration: 2 hours
  Cost: $4.60 on weekdays

- Taxi and Uber

  Duration: 20-30 minutes
  Cost: $50 - $60.

Map of RMIT Storey Hall

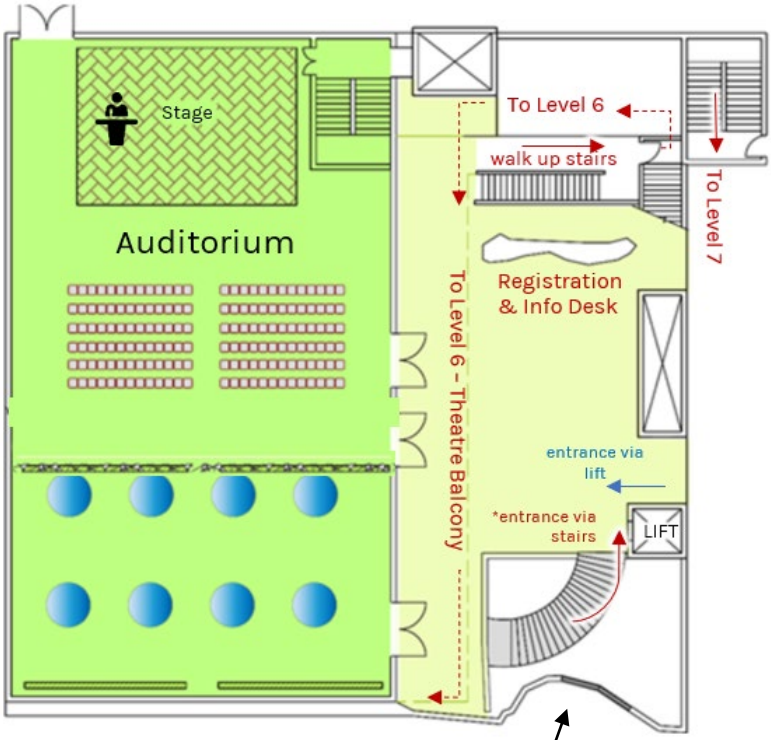
RMIT University, City campus (Building 16 Storey Hall, Swanston Street)

Conference Venue Floor Plans

The conference room arrangements are:

Registration Welcome Reception Coffee and Tea Break	Level 5	Foyer
Opening Ceremony Closing Ceremony Keynote Presentations	Level 5	Auditorium
Parallel Sessions	Level 7	Blue Room Orange Room
Poster Sessions	Level 5	Auditorium
Coffee and Tea Break Lunch	Level 7	Foyer

Storey Hall Level 5 & 6 - Main Auditorium



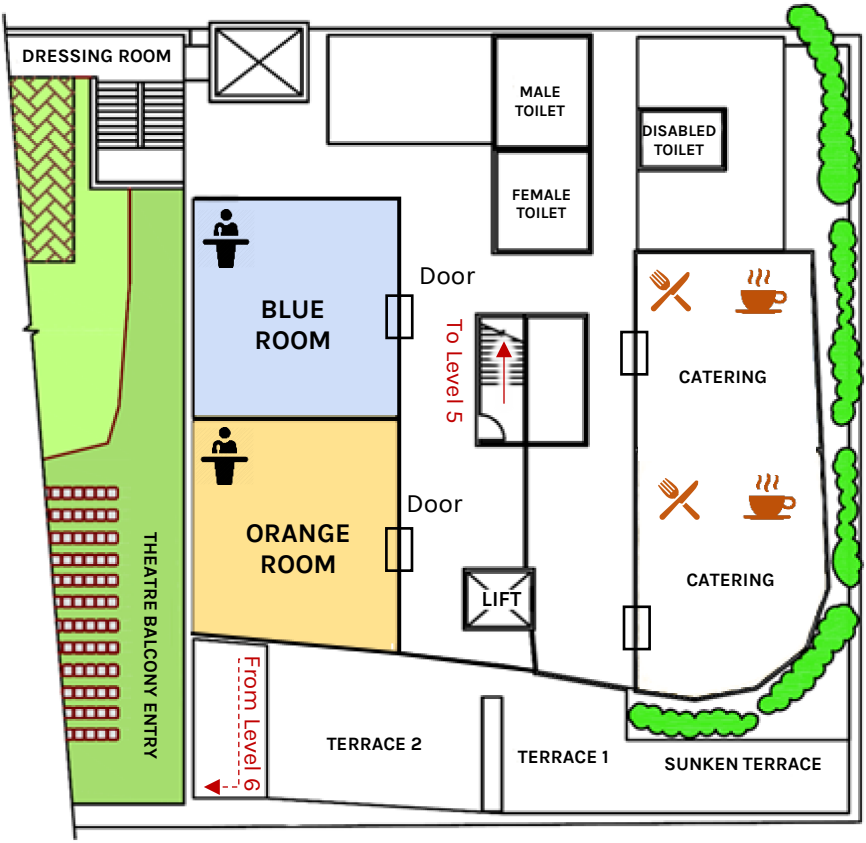
*entrance
via stairs

entrance
via lift

Curved Stairs
to Level 5

Ground Level
Entrance
on Swanston St

Storey Hall Level 7 – Seminar Rooms



Social Events

Welcome Reception

Time: 14:00 – 17:00 on Sunday, February 5th

Location: Foyer, Level 5, Storey Hall

Registration

Time: 8:30 – 9:00 on Monday, February 6th

Location: Foyer, Level 5, Storey Hall

Opening Ceremony

Honorary Chair: Prof. Aliakbar Akbarzadeh

Time: 9:00 – 9:15 on Monday, February 6th

Location: Auditorium, Level 6, Storey Hall

Melbourne Museum (Triceratops Exhibition - free)

Time: 16:00 – 17:00 on Wednesday, February 8th

Location: Melbourne Museum, 11 Nicholson St, Carlton VIC 3053

Conference Dinner (Tree tops Melbourne Museum)

Time: 17:30 – 22:00 on Wednesday, February 8th

Location: Melbourne Museum, 11 Nicholson St, Carlton VIC 3053

Closing Ceremony and Final Network Session

Time: 12:00 – 12:15 on Thursday, February 9th

Location: Auditorium, Level 6, Storey Hall

Activities schedule for accompanying person.

Meeting point level 5, Storey Hall in the Foyer at 10am. Nasrin Rasoulzadeh will meet with the accompanying person and will be their guide for the three days.

NGV International (Monday 6/2/2023)

10:00am – 3:00pm: NGV International, Lunch/coffee break, NGV Australia and Federation Square

State Library of Victoria (Tuesday 7/2/2023)

10:00am- 3:00pm State Library of Victoria, Lunch/coffee break, Melb. Central and Emporium (shopping)

Queen Victoria Market (Wednesday 8/2/2023)

10:00am- 2:00pm: Queen Victoria Market, Lunch break, Burke Street shopping mall

Please wear comfortable walking shoes, sunscreen and hat. Please note there will be some out of the pocket expenses, such as entry tickets, lunch, tea/coffee.

Contact number of your guide Nasrin Rasoulzadeh +61 0409 943 394.

Instructions for Speakers

1. Presentation

- Each oral session is allocated for 20 minutes in total (Presentation + Q/A).
- The time allotted for each speaker will be as follows:
    - 10-12min presentation
    - At 10mins, the chair will indicate to finish the presentation.
- Please make sure you keep to the presentation time.
    - 5-7min question time, and change-over
- Time allocated for poster presentation.
    - 4-5mins
    - At 4mins, the chair will indicate to finish the presentation.

2. Instructions for online and in-person presenters

- Detailed instructions for presentations can be found at https://heatpipeaus.com/

3. Pre-session

- Seats in the front row are reserved for speakers. Please ensure you arrive 10mins before your session and be seated in the front row.
- Please get acquainted with the equipment and introduce yourself to the session chair.

Keynote Presentations

Keynote Presentation 1, 06 Feb, Monday 9:15-10:00

Heat Pipes in Solar Thermal Applications-A Review

Prof. Joon Hong Boo, Korea Aerospace University

Chair: Prof. Aliakbar Akbarzadeh

Keynote Presentation 2, 07 Feb, Tuesday 9:00 – 9:45

Recent Trends on Capillary Driven Two-phase Heat Loops Developments and Application

Dr Donatas Mishkinis, Chief technology officer at Allather

Chair: Prof. Sameer Khandekar

Keynote Presentation 3, 08 Feb, Wednesday 9:00 – 9:45

Advances in Additive Manufacturing for Heat Pipe Applications

Dr Wessel Wits, Hardware Architect at Thales, Netherlands

Chair: Prof. Marcia Mantelli

Awards and Honors

George Grover Medal

The Committee on International Heat Pipe Conferences has established the George Grover Medal to honor individuals for their outstanding contributions to the development of Heat Pipe Science and Technology. The medal is named in honor of Dr. George Grover, who, with his first external publication in 1963 on heat pipes, laid the foundation for all heat pipe research and development. The award was given for the first time at the 14th IHPC in Florianopolis, Brazil.

This award is given in two categories: Young Scientist Award (recognizing promising young individuals typically working in the field less than 10 years) and Distinguished Scientist Award (recognizing significant and sustained contributions in the field).

Donald M. Ernst Award

This Best Papers Award category was established in memory of Donald M. Ernst by his friends and colleagues to honor his achievements in the fields of Heat Pipe research, product development and commercialization. It was given for the first time at the 16th IHPC in Lyon. The selection will be done by the International Heat Pipe Conference Committee from amongst the papers presented during the conference. The award includes a cash prize and a certificate.

The award is given in two categories: (i) for fundamental research and, (ii) for technical/technology applications.

Local organising committee awards

Best Oral Presentation

Best Poster Presentation

Best Paper

Local Committee Members

Honorary Chair

Prof. Aliakbar Akbarzadeh (RMIT University)

Chair

A/Prof. Abhijit Date (RMIT University)

Co-Chair

A/Prof. Kiao Inthavong (RMIT University)

Committee

Dr Jason Velardo (Industry Secretary, Conflux, Aus)
Dr Ravi Koirala (Website technical support, RMIT University)
Dr Henin Zhang (Venues and printing support, RMIT University)
Dr Petros Lappas (RMIT University)
Prof. Gary Rosengarten (RMIT University)
A/Prof. Bahman (RMIT University)
Dr R. Singh (RMIT Alumni/Fujikura, Japan)
Dr T. Nguyen (RMIT Alumni/Fujikura, Australia)
Dr I. Sauciuc (RMIT Alumni/Intel, USA)
Dr X.P. Wu (RMIT Alumni/Fujikura, USA)
Dr V. Dube (RMIT Alumni)
Dr L.C. Ding (RMIT Alumni/Umow Lai, Australia)
Dr B. Orr (RMIT Alumni/Australia)
Dr L.P. Tan (RMIT Alumni)
Dr A. Date (RMIT Alumni/Blackmagic Design)
Dr M. Mochizuki (Advisor) (The Heat Pipes, Japan)
Mr. T. Kitchener (Advisor) (SVW Pty Ltd, Australia)
Dr Mirek Piechowski (Advisor) (Piechowski Energy, Melbourne)
Dr. Natalia Savchenkova (Advisor), Moscow Power Engineering Institute
Dr. Konstantin Goncharov (Advisor), Moscow Power Engineering Institute

International Committee Members

Honorary Chair

Prof. M. Groll, Stuttgart, Germany

Past-Chair

Prof. J. Bonjour, Lyon, France
Prof. Yury Maydanik, Ekaterinburg, Russia

Chair

Prof. S. Khandekar, Kanpur, India

Members

Prof. A. Akbarzadeh, Melbourne, Australia
Prof. J. H. Boo, Seoul, Korea
Prof. S. Filippeschi, Pisa, Italy
Prof. S. W. Kang, Taipei, Taiwan
Prof. H. Nagano, Nagoya, Japan
Prof. Yu. Maydanik, Ekaterinburg, Russia
Prof. M. Mantelli, Florianopolis, Brazil
Prof. M. Marengo, Brighton, UK
Prof. J. M. Ochterbeck, Clemson, USA
Prof. K. S. Ong, Kuala Lumpur, Malaysia
Prof. W. Qu, Beijing, China
Mr. W. Supper, Leiderdorp, The Netherlands
Dr. Soponpongipat, Thailand
Prof. L. L. Vasiliev, Minsk, Belarus

Detailed Program Schedule of Parallel Sessions

From	To	**Day 2** (Monday 6th Feb 2023)	
8:30	8:50	**Registration**	
8:55	9:25	**Inaugural Ceremony**	
9:25	10:10	**Keynote address 1 - Prof. Joon Hong Boo** **Heat pipes in solar thermal applications - A review** **Chair: Prof. Aliakbar Akbarzadeh** **Location: Auditorium, Level 5, Bld 16 - Storey Hall**	
10:10	10:35	**Morning tea**	
From	To	**Oral presentations - Parallel sessions**	
Melbourne time		**BLUE Room** **(Room 0.16.07.01&2)** **Theme 1** **Chair: Dr Randeep Singh**	
10:40	11:00	Larissa Krambeck *, Kelvin Guessi Domiciano, and Marcia B. H. Mantelli	Two-phase flat loop devices in parallel arrangement for electronics cooling
11:00	11:20	Wei Qu* , Zhihu Xue, and Jijun Yu	Thin and small evaporators of high performance for loop heat pipes
11:20	11:40	Xinyu Chang *, Takeshi Yokouchi , Kimihide Odagiri , Hiroyuki Ogawa , Hosei Nagano and Hiroki Nagai	Study of operating characteristics of a gravity-assisted cryogenic loop heat pipe with different charging pressures
11:40	12:00	Yasushi Koito*, Ryosuke Kakizoe, and Akira Fukushima	Mathematical modeling and its verification on heat transfer characteristics of ultra-thin heat pipes
12:00	12:20	Yuxuan Li, Jeff D. Eldredge*, Adrienne S. Lavine, Timothy S. Fisher, and Bruce L. Drolen	A data assimilation model of oscillating heat pipe dynamics and performance
12:20	12:40	Maofei Yang, Jinwang Li*, and Jiyuan Li	Thermal performance of an ultra-thin flexible flat heat pipe with hydrophilic / hydrophobic coupling wick structure
12:40 to 13:25 Lunch			
From	To	**Oral presentations - Parallel sessions**	
Melbourne time		**BLUE Room** **(Room 0.16.07.01&2)** **Theme 1 and 5** **Chair: Prof. Masahito Nishikawara**	
13:30	13:50	Kuan-Lin Lee, Calin Tarau, William G.Anderson, Cho-Ning Huang, Chirag Kharangate and Yasuhiro Kamotani	Advanced hot reservoir variable conductance heat pipe for space applications
13:50	14:10	Jeff Diebold, Brett Leitherer, Calin Tarau and Kuan-Lin Lee	Multi-condenser variable conductance heat pipes for electric aircraft
14:10	14:30	Corey A. Wilson, Bruce Drolen , Brent Taft and Jon Allison	Advanced structurally embedded thermal spreader II (ASETS-II) oscillating heat pipe flight experiment and database
14:30	14:50	Masahito Nishikawara	Pore network simulation of loop heat pipe evaporator with different pore size distribution
14:50	15:10	Maksym Slobodeniuk, Vincent Ayel, Remi Bertossi, Cyril Romestant and Yves Bertin	Effect of binary mixtures on flat plate pulsating heat pipe operation in ground and reduced gravity environment
15:10	15:30	Jianyin Miao and Zenong Fang	The Application of Loop Heat Pipe in Chinese Survey Space Telescope

From	To	Oral presentations - Parallel sessions	
Melbourne time		**BLUE Room (Room 0.16.07.01&2) Mixed Theme Chair: Dr Randeep Singh**	
16:00	16:20	Doriane Ibtissam Hassaine Daoudji*, Samaneh Karami, Étienne Léveillé, Mahmood Shirazy and Luc G. Fréchette	All – polymer thermal ground plane with stable hydrophilized wick
16:20	16:40	K. I. Delendik*, N. V. Kolyago, O. G. Penyazkov, and O. L. Voitik	Developing of a gravity independent heat pipe with asymmetric compensating element
16:40	17:00	Mauro Abela *, Mauro Mameli , Sauro Filippeschi , and Brent S. Taft	Preliminary multi-variable experimental analysis to determine the startup criteria of Pulsating Heat Pipes
17:00	17:20	Vincent Dupont *, Flavio Accorinti , Maxime Henno , Patricia Susana Serrano Perez , and Francisco Redondo Carracedo	Capillary jet loop in direct contact condensation mode used to perform ice protection function of a turboprop composite nacelle intake
17:20	17:40	Roberta Perna*, Maksym Slobodeniuk, Luca Pagliarini, Mauro Mameli, Cyril Romestant, Luca Cattani, Vincent Ayel, Fabio Bozzoli and Sauro Filippeschi	Experimental investigation of a spring shaped deployable pulsating heat pipe

Day 2 (Monday 6th Feb 2023)

From	To	Oral presentations - Parallel sessions	
Melbourne time		**ORANGE Room (Room 0.16.07.03&4) Theme 3 Chair: Dr Jason Velardo**	
10:40	11:00	Marco Bernagozzi *, Anastasios Georgoulas , Nicolas Miché and Marco Marengo	Experimental investigation on the influence of ambient temperature in a Loop Heat Pipe Battery Thermal Management System
11:00	11:20	Kelvin G. Domiciano*, Larissa Krambeck, and Marcia B. H. Mantelli	Thin loop heat pipe with stranded wire as porous media
11:20	11:40	Abdolmajid Zamanifard, M Muneeshwaran and Chi Chuan Wang	A novel pulsing heat pipe with a long, wickless serpentine tube for high-flux applications
11:40	12:00	Naoko Iwata	Investigation of operational limit of oscillating heat pipes by estimating local heat transfer
12:00	12:20	Seunghwan Lee and Jaeseon Lee	Enhanced wicking effect on femtosecond laser treated porous microgroove structured surface
12:20	12:40	Hongxing Zhang, Yuandong Guo, Boyang Sun, Guoguang Li, Jianyin Miao*, Guiping Lin and Dongsheng Wen	Bionic two-phase loops inspired by water transport system of trees

12:40 to 13:25 Lunch			
From	To	**Oral presentations - Parallel sessions**	
Melbourne time		**ORANGE Room (Room 0.16.07.03&4) Theme 3 and 6 Chair: Prof. Marco Bernagozzi**	
13:30	13:50	Vyacheslav Cheverda* and Anastasia Litvinceva	The additive microstructures for heat transfer enhancement inside pulsating heat pipe
13:50	14:10	Jason Velardo	A preliminary investigation into additively manufactured vapour chambers
14:10	14:30	Sergio Iván Cáceres Castro, Marc Kirsch, Rudi Kulenovic and Jörg Starflinger	Heat transfer characteristics of a two-phase closed thermosyphon for passive spent fuel pool cooling
14:30	14:50	Hyunmuk Lim , Seung M. You , and Jungho Lee *	Development of the flat plate two-phase heat spreader for high heat loads
14:50	15:10	Zhi-hu Xue*, Rong-xu Nie, Wei Li, Chao Liu and Wei Qu	Experimental study on start-up performance of high temperature liquid metal heat pipe
15:10	15:30	Wessel W. Wits, Henk Rompelman, Yannick Jeggels, Davoud Jafari and Norbert Engelberts	Theoretical and experimental investigation of rotating heat pipes
15:30 to 15:55 Afternoon tea			

From	To	**Day 3** (Tuesday 7th Feb 2023)	
Melbourne time			
9:15	10:00	**Keynote address 2 - Dr Donatas Mishkinis Recent Trends on Capillary Driven Two-phase Heat Loops Developments and Application Chair: Prof. Sameer Khandekar**	
10:00	10:30	Morning tea	
From	To	**Oral presentations - Parallel sessions**	
Melbourne time		**BLUE Room (Room 0.16.07.01&2) Theme 4 Chair: Dr Wolfgang Supper**	
10:30	10:50	Debartha Chatterjee and Sameer Khandekar	Effect of fabric parameters on rate of evaporation and salt accumulation for interfacial solar vapor generation systems
10:50	11:10	Tarun Kulshrestha and Sameer Khandekar	Effect of far-field ambient conditions on interfacial solar vapor generation using a two-phased closed thermosyphon
11:10	11:30	Thibault Van't Veer, Baptiste Lepinoy, Vincent Ayel, Mouad Diny, and Yves Bertin	Design of a new flat plate pulsating heat pipe for battery cooling: Modeling approach and experimental tests
11:30	11:50	Luca Pagliarini, Kelvin G. Domiciano, Larissa Krambeck, Fabio Bozzoli, and Marcia B. H. Mantelli	Local heat transfer study of a mini loop heat pipe
11:50	12:10	Menglei Wang	Investigation of a novel heat pipe array for thermal control of the power battery packages
12:10	12:30		
12:30 to 1:25 Lunch			

From	To	Oral presentations - Parallel sessions	
Melbourne time		**BLUE Room (Room 0.16.07.01&2) Theme 7 Chair: Prof. Sameer Khandekar**	
13:30	13:50	Elvis Falcão de Araújo, Márcia Barbosa Henriques Mantelli, Juan Pablo Flórez Mera, and Luis Hernán Rodríguez Cisterna	Investigation of the thermal performance of a rod-plate heat pipe
13:50	14:10	Xue Zhou, Shiyue Wang, Zhenhua Jiang, Nanxi Li and Yan Lu*	Modeling of nucleate boiling and two-phase behavior in the circumferential grooves of loop heat pipe
14:10	14:30	Pratik Prakash Gupta, , Kuan-Lin Chen, Kuan-Yu Luo, Shung Wen Kang*	Application of additive manufacturing in the development of Heat pipe technologies
14:30	14:50	Marc Kirsch, Sergio Cáceres, Rudi Kulenovic and Jörg Starflinger	Experimental investigation of two-phase closed thermosyphons using laser-structured coating in the condenser section
14:50	15:10	Est Dev Patel and Subrata Kumar	Thermal performance of an asymmetric pulsating heat pipe with aqueous surfactant solution
15:10	15:30	Chandan Nashine, Nadaf Arman Mohaddin, Sandip kumar Sarma and Manmohan Pandey	Experimental characterization of sintered bi-porous wicks for loop heat pipes
15:30 to 15:55 Afternoon tea			
From	To	**Oral presentations - Parallel sessions**	
Melbourne time		**BLUE Room (Room 0.16.07.01&2) Theme 7 and Theme 8 Chair: Dr Keiko Ishii**	
16:00	16:20	Leonard L. Vasiliev*, Alexander S. Zhuravlyov, and Maxim A. Kuzmich	Investigation on the thermal performances of novel loop thermosyphon using annular horizontal evaporator and condenser
16:20	16:40	Jaehwan Shim, Jun Soo Kim, Bong Jae Lee, Jungchul Lee, and Youngsuk Nam*	Ceria-based robust superhydrophobic condensers
16:40	17:00	Francisco Javier Martín-Portugués*, Yago Gómez-Ullate and Francisco Romera	Geyser boiling phenomenon in ethane heat pipes working in thermosyphon mode
17:00	17:20	Bradley Orr	Improved modelling of a heat recovery system with tegs and heat pipes
17:20	17:40	Mohammad Shahed Ahamed	High performance heat pipe development for data center cooling

Day 3 (Tuesday 7th Feb 2023)

From	To	Oral presentations - Parallel sessions	
Melbourne time		**ORANGE Room (Room 0.16.07.03&4) Theme 7 & 2 Chair: Prof. Marcia Mantelli**	
10:30	10:50	Logan Kossel, John Pfotenhauer, and Franklin Miller	Experimental investigation of long-distance cryogenic helium pulsating heat pipes with varying adiabatic lengths up to 1.75 m
10:50	11:10	Keiko Ishii *, Yuya Otaka , and Koji Fumoto	Simultaneous measurement of temperature distribution and flow inside a pulsating heat pipe using temperature sensitive paint with in-situ calibration
11:10	11:30	Cheongyong Park, Bomi Nam, Wukchul Joung	Operating characteristics of a pressure-controlled loop heat pipe with a mechanically-driven gas pressure controller
11:30	11:50	Jaehyuk Jeong and Wukchul Joung	Thermographic investigation of heat spreading characteristics of a vapor chamber-type heat spreader
11:50	12:10	Rikuto Shimoda, Keiko Ishii , and Koji Fumoto	Simultaneous measurement of two-dimensional temperature distribution and flow inside a single channel simulating pulsating heat pipe
12:10	12:30		
12:30 to 1:25 Lunch			
From	To	**Oral presentations - Parallel sessions**	
Melbourne time		**ORANGE Room (Room 0.16.07.03&4) Theme 2 and Theme 8 Chair: Prof. Wukchul Joung**	
13:30	13:50	Kimihide Odagiri*, Xinyu Chang, Hiroki Nagai, and Hiroyuki Ogawa	Thermal characteristics of a 2-m nitrogen cryogenic loop heat pipe with a capillary starter pump
13:50	14:10	Richard Lenhard, Natália Holešová, and Katarína Kaduchová	Numerical investigation of the influence of size, condensation and evaporation coefficient on the power of the heat pipe
14:10	14:30	Thanh-Long Phan	Vapor chamber heat spreader for high heat flux chip of 100W/cm2
14:30	14:50	Ricardo Schneider Calomeno*, Fernando Henrique Milanez and Marcia Barbosa Henriques Mantelli	Simplified theoretical thermal models for an inverted two-phase thermosyphon
14:50	15:10	Guoguang Li, Hongxing Zhang*, Jianyin Miao, Chang Liu, Sixue Liu and Zenong Fang	Experimental investigation of a novel flat-plate loop heat pipe
15:10	15:30	Zhang Hongxing	Theoretical and experimental research on the variable control heat pipe
15:30 to 15:55 Afternoon tea			

From	To	Oral presentations - Parallel sessions	
Melbourne time		**ORANGE Room (Room 0.16.07.03&4) Theme 2 Dr Richard Lenhard**	
16:00	16:20	Hye-Seong Hwang, Duy-Tan Vo and Kwang-Hyun Bang*	Numerical simulation of closed-type pulsating heat pipes using Fluent
16:20	16:40	Kuan-Yu Luo, Kuan-Lin Chen, Pratik Prakash Gupta and Shung Wen Kang *	3D printed oscillating heat pipe
16:40	17:00	Llywelyn Hughes*, Daniel Pugh, Philip Bowen, Richard Marsh, Andrew Jones and Tom Halhead	Development of a Matlab-based automatic lattice 2D analysis tool for heat pipe wick structures
17:00	17:20	Camila Braga Vieira, Thomas Nicolle, Flavio Accorinti, Olivier de Ghelin, Cecile Goffaux and Vincent Dupont	Computational simulation of a vapor jet into a subcooled flow inside a capillary jet loop system operating in direct condensation mode
17:20	17:40	Vincent Ayel, Thibault Van't Veer, Maksym Slobodeniuk, Luca Pagliarini, Cyril Romestant and Yves Bertin	Temperature and pressure frequency analyzes of a flat plate pulsating heat pipe: influence of the edge orientation angle
17:40	18:00	Milan Vachhani, Kalpak R Sagar, Durganand Jha, Vipul M Patel, Hemantkumar B Mehta*	Experimental Investigations on Loop heat pipe in the context of BTMS
18:00	**19:00**	**International Heat Pipe Committee Meeting (only for committee members)**	

Day 4 (Wednesday 8th Feb 2023)

From	To		
9:15	10:00	**Keynote address 3 - Dr Wessel Wits** **Advances in additive manufacturing for heat pipe applications** **Chair: Prof. Marcia Mantelli**	
10:00	10:30	Morning tea	
From	To	**Poster Presentation**	
Melbourne time		**BLUE Room** **(Room 0.16.07.01&2)** **Chair: Prof. Aliakbar Akbarzadeh**	
10:35	10:45	Bomi Nam , Jaeyeon Kim , Manhee Park and Wukchul Joung	Heat transport characteristics of a 2 m long flat-evaporator flexible loop heat pipe for thermal control of power electronics of electric vehicles
10:45	10:55	Gabriel Serafin Couto Vieira, and Marcia Henriques Barbosa Mantelli	Visual investigation of surface texturing effect in two-phase closed thermosyphons
10:55	11:05	Helen Skop *, Darrell Klammer, and Sergei Zvenigorodsky	Heat-mass exchanger with equilibrium transfer of latent energy outside and inside the heat pipes
11:05	11:15	Hyoungsoon Lee	Numerical model of thermal performance and flow hydrodynamics in two-phase closed thermosyphon
11:15	11:25	Pawel Szymanski	The concept of a dual-evaporator Loop Heat Pipe for application in cooling electronics
11:25	11:35	Eui Guk Jung, Won Bok Chung, and Joon Hong Boo	A novel heat pipe with a bypass line for accelerating a working fluid
11:35	11:45	Qihan Chen, Jingzhi Zhou, Guohui Zhou, Feng Zhou, Xiulan Huai, and Gaosheng Wei	Research progress of inverse opal porous structures in the field of flow and heat transfer: A review
11:45	11:55	Feng Zhou Jingzhi Zhou, Guohui Zhou, Xiulan Huai, Yawen Jiang, and Naijia Zhang	Development and performance evaluation of an ultra-thin vapor chamber with gradient capillary wick under natural convection cooling
11:55	12:05	Guohui Zhou, Jingzhi Zhou, and Xiulan Huai	Thermal performance evaluation of a novel vapor chamber with multi-artery vapor spreading channels
12:05	12:15	Rohit Kumar, and Manmohan Pandey	Numerical investigation of heat transfer augmentation in miniature channels with microfins having axially varying fin pitch

From	To	Poster Presentation	
Melbourne time		**ORANGE Room (Room 0.16.07.03&4) Chair: Prof Kiao Inthavong**	
10:35	10:45	Salar Saadatian, and Harris Wong	A model of flat heat pipes leading to the classical fin equation for the pipe temperature
10:45	10:55	Shunsuke Tsutsumiuchi, Keiko Ishii, and Koji Fumoto	Basic research on self-regenerating bridge type heat pipe
10:55	11:05	Dong-Hyun Cho*, Jong-Un Park, Yong-Gyu Chae, and Soo-Jin Han	Heat transfer characteristics for refrigerant flow rate change in heat exchanger using loop thermosyphon technology
11:05	11:15	Sakthi Priya M, and Sakthivadivel D*	Experimental investigation on the thermal performance of a modified geometry thermosyphon heat pipe with surface modification
11:15	11:25	Dr Trevor Bird and Dr Valerie Lawdensky	Ground testable spacecraft heat pipe (GTSHP)
11:25	11:35	Nanxi Li*, Bo Shao, Le Liu, and Zhenhua Jiang	Numerical simulation of the phase distribution in a loop heat pipe
11:35	11:45	Le Liu, Bo Shao, Nanxi Li, Zhenhua Jiang and Deping Dong	Capillary suction model of different porous media and experimental verification
11:45	11:55	Jiali Luo , Mou Xu , Dongchuan Mo* , and Shushen Lyu*	An ultra-thin stainless steel vapor chamber with biomimetic copper forest wick and ultra-high thermal conductivity
11:55	12:05	Vineed Narayanan	Two-phase wickless unidirectional flow heat transporting device

Afternoon / Evening (Wednesday 8th Feb 2023)

Networking 13:30pm to 14:30pm

Free time from 14:30pm to 16:00 pm

Free entry to Melbourne Museum - from 16:00pm to 17:00pm
Followed by Conference dinner at Melbourne Museum
(Treetops venue)

17:00	**22:00**	**Conference dinner (Announcement of Don M. Ernst Award and George Grover Medal)**

Day 5 (Thursday 9th Feb 2023)

From	To	Oral presentations	
Melbourne time		**BLUE Room (Room 0.16.07.01&2) Mixed Theme Chair: Prof. Aliakbar Akbarzadeh**	
9:00	9:20	Randeep singh	Traction system cooling options for electric vehicles
9:20	9:40	Kuan-Lin Chen, Kuan-Yu Luo, Pratik Prakash Gupta and Shung Wen Kang*	Study of 3D printed capillary structure
9:40	10:00	Masataka Mochizuki*, Hiroshi Shimizu, Yukiko Kato, Hiromichi Kawamura, Masaki Kawaguchi, Hideo Arai, Sadaharu Tamoto, Tooru Ishikawa, Naotake Kumagai, Yoshio Utaka and Zhihao Chen	Development of IGBT immersion cooling system for in-wheel motor of electric vehicles
10:00	10:20	Gabriel Serafin Couto Vieira*, Nelson Y. Londoño Pabón, and Marcia Barbosa Henriques Mantelli	Theoretical and experimental evaluation of small diameter thermosyphons
10:20	10:40	Donatas Mishkinis *, Igors Ušakovs, and Ilija Galkins	Heat loop pipe for thermal management of powerful led-based applications
10:40 am to 11:00am - Morning tea			
11:00 am to 12:00pm - Panel Discussion			
12:00 pm to 12:15pm - closing ceremony			

21st IHPC and 15th IHPS Conference - Program 5th to 9th Feb 2023

Day 1 (5th Feb 2023)

Day 1 (Sunday 5th Feb 2023)
14:00 17:00 - Registration and Welcome reception

Day 2 (Monday 6th Feb 2023)

Melbourne time

From	To	
8:30	8:50	Registration
8:55	9:25	Inaugral ceremony
9:25	10:10	Keynote address 1 - Prof. Joon Hong Boo Heat pipes in solar thermal applications - A review Chair: Prof. Aliakbar Akbarzadeh
10:10	10:35	Morning tea

Oral presentations - Parallel sessions

From	To	BLUE Room (Room 0.16.07.01&2) Theme 1 (online) Chair: Dr Randeep Singh	ORANGE Room (Room 0.16.07.03&4) Theme 3 Chair: Dr Jason Velardo
10:40	11:00	HPAUS - 56	HPAUS - 14
11:00	11:20	HPAUS - 94	HPAUS - 57
11:20	11:40	HPAUS - 07	HPAUS - 39
11:40	12:00	HPAUS - 49	HPAUS - 97
12:00	12:20	HPAUS - 107	HPAUS - 88
12:20	12:40	HPAUS - 62	HPAUS - 65
12:40 to 13:25 Lunch			

Oral presentations - Parallel sessions

From	To	BLUE Room (Room 0.16.07.01&2) Theme 1 and 5 Chair: Prof. Masahito Nishikawara	ORANGE Room (Room 0.16.07.03&4) Theme 3 and 6 Chair: Prof. Marco Bernagozzi
13:30	13:50	HPAUS - 01	HPAUS - 82
13:50	14:10	HPAUS - 24	HPAUS - 100
14:10	14:30	HPAUS - 03	HPAUS - 52
14:30	14:50	HPAUS - 55	HPAUS - 96
14:50	15:10	HPAUS - 69	HPAUS - 12
15:10	15:30	HPAUS - 67	HPAUS - 59
15:30 to 15:55 Afternoon tea			

Oral presentations - Parallel sessions

From	To	BLUE Room (Room 0.16.07.01&2) Mixed Theme Chair: Dr Randeep Singh	
16:00	16:20	HPAUS - 104	
16:20	16:40	HPAUS - 61	
16:40	17:00	HPAUS - 06	
17:00	17:20	HPAUS - 16	
17:20	17:40	HPAUS - 77	
17:40	18:00		

Day 3 (Tuesday 7th Feb 2023)

Melbourne time

From	To	
9:15	10:00	Keynote address 2 - Dr Donatas Mishkinis Recent Trends on Capillary Driven Two-phase Heat Loops Developments and Application Chair: Prof. Sameer Khandekar
10:00	10:25	Morning tea

Oral presentations - Parallel sessions

From	To	BLUE Room (Room 0.16.07.01&2) Theme 4 Chair: Dr Wolfgang Supper	ORANGE Room (Room 0.16.07.03&4) Theme 7 & 2 Chair: Prof. Marcia Mantelli
10:30	10:50	HPAUS - 19	HPAUS - 54
10:50	11:10	HPAUS - 23	HPAUS - 09
11:10	11:30	HPAUS - 28	HPAUS - 10
11:30	11:50	HPAUS - 43	HPAUS - 11
11:50	12:10	HPAUS - 53	HPAUS - 20
12:10	12:30		
12:30 to 13:25 Lunch			

Oral presentations - Parallel sessions

From	To	BLUE Room (Room 0.16.07.01&2) Theme 7 Chair: Prof. Sameer Khandekar	ORANGE Room (Room 0.16.07.03&4) Theme 2 and Theme 8 Chair: Prof. Wukchul Joung
13:30	13:50	HPAUS - 27	HPAUS - 110
13:50	14:10	HPAUS - 73	HPAUS - 34
14:10	14:30	HPAUS - 85	HPAUS - 38
14:30	14:50	HPAUS - 46	HPAUS - 70
14:50	15:10	HPAUS - 64	HPAUS - 66
15:10	15:30	HPAUS - 21	HPAUS - 68
15:30 to 15:55 Afternoon tea			

Oral presentations - Parallel sessions

From	To	BLUE Room (Room 0.16.07.01&2) Theme 7 and Theme 8 Chair: Dr Keiko Ishii	ORANGE Room (Room 0.16.07.03&4) Theme 2 Dr Richard Lenhard
16:00	16:20	HPAUS - 76	HPAUS - 81
16:20	16:40	HPAUS - 91	HPAUS - 83
16:40	17:00	HPAUS - 102	HPAUS - 103
17:00	17:20	HPAUS - 40	HPAUS - 02
17:20	17:40	HPAUS - 93	HPAUS - 30
17:40	18:00		HPAUS - 63

From	To	
18:00	19:00	International Heat Pipe Committee Meeting (only for committee members)

Day 4 (Wednesday 8th Feb 2023)

Melbourne time

From	To		
9:15	10:00	Keynote address 3 - Dr Wessel Wits Advances in additive manufacturing for heat pipe applications Chair: Prof. Marcia Mantelli	
10:00	10:30	Morning tea	

Poster Presentation

From	To	BLUE Room (Room 0.16.07.01&2) Chair: Dr Aliakbar Akbarzadeh	ORANGE Room (Room 0.16.07.03&4) Chair: Prof. Kiao Inthavong
10:35	10:45	HPAUS - 18	HPAUS - 26
10:45	10:55	HPAUS - 106	HPAUS - 50
10:55	11:05	HPAUS - 78	HPAUS - 113
11:05	11:15	HPAUS - 92	HPAUS - 114
11:15	11:25	HPAUS - 111	HPAUS - 115
11:25	11:35	HPAUS - 36	HPAUS - 48
11:35	11:45	HPAUS - 45	HPAUS - 41
11:45	11:55	HPAUS - 29	HPAUS - 17
11:55	12:05	HPAUS - 4	HPAUS - 112
12:05	12:15	HPAUS - 22	
12:30 to 13:20 Lunch			

Networking 13:30pm to 14:30pm

Free time from 14:30pm to 16:00pm

Free entry to Melbourne Museum - from 16:00pm to 17:00pm
Followed by Conference dinner at Melbourne Museum
(Treetops venue)

From	To	
17:15	21:30	Conference dinner (Announcement of Don M. Ernst Award and George Grover Medal)

Day 5 (Thursday 9th Feb 2023)

From	To	Oral presentations
Melbourne time		BLUE Room (Room 0.16.07.01&2) Mixed Theme Chair: Prof. Aliakbar Akbarzadeh
9:00	9:20	HPAUS - 05
9:20	9:40	HPAUS - 84
9:40	10:00	HPAUS - 108
10:00	10:20	HPAUS - 105
10:20	10:40	HPAUS - 80
10:40 am to 11:00am - Morning tea		
11:00 am to 12:00pm - Panel Discussion		
12:00 am to 12:15am - closing ceremony		