



**9th Asia-Oceania Symposium  
on Fire Science and Technology**

**PROGRAM**

# **9th Asia-Oceania Symposium on Fire Science and Technology**

State Key Laboratory of Fire Science

University of Science & Technology of China

Hefei, China

17-20 October, 2012

## **Program**

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# Outline of 9th AOSFST Schedule

<b>October 17</b>	<b>Wednesday</b>
14:00-18:30	Registration (Lobby of Anhui Gaosu New Century (AGNC) International Hotel)
18:30-20:30	Welcome reception (Cafeteria)
<b>October 18</b>	<b>Thursday</b>
08:20-09:00	Open ceremony (Gaosu Lounge)
09:00-09:45	Plenary speech (Gaosu Lounge)
10:15-10:50	Four parallel sessions for invited speeches
10:50-12:05	Four parallel sessions for paper presentations
13:40-17:55	Four parallel sessions for paper presentations
19:30-20:30	Performance of Traditional Chinese Music (Gaosu Lounge) (USTC Student Orchestra of Nationalities Music)
<b>October 19</b>	<b>Friday</b>
08:20-08:55	Four parallel sessions for invited speeches
08:55-12:30	Four parallel sessions for paper presentations
13:40-15:20	Four parallel sessions for paper presentations
15:50-16:50	Poster session (Lobby of Gaosu Lounge)
15:30-16:30	AOAFST Committee Meeting
16:30-18:00	IAFSS Committee Meeting
15:30-17:30	Visit the KDLian Safety Technology Co., Ltd. (Sponsor) [Optional]
18:30-21:00	Welcome speech (Wanki Chow). Banquet (Gaosu Lounge)
<b>October 20</b>	<b>Saturday</b>
08:30-09:05	Four parallel sessions for invited speeches
09:05-12:30	Four parallel sessions for paper presentations
14:00-16:00	Visit Anhui Museum [Optional]
16:30-18:00	Visit Huiyuan Park and/or Expo Anhui Pavilion [Optional]
18:30-20:30	Farewell dinner

## **Message from the Local Organizing Committee**

Welcome to the 9th Asia-Oceania Symposium on Fire Science and Technology, hosted by State Key Laboratory of Fire Science, University of Science and Technology of China. The venue of this symposium will be at the Anhui Gaosu New Century (AGNC) International Hotel, from October 17 to October 20, 2012. The technical program consists of the Plenary lecture and a series of invited lectures held each morning, four simultaneous sessions of oral presentations, and accepted poster presentations.

In addition to the technical program, the local organizing committee has put together an exciting social program. The Welcome Reception will be held on October 17 (Wednesday) evening at the Cafeteria of AGNC Hotel. A special performance of Traditional Chinese Music will take place at the Gaosu Lounge of AGNC Hotel on evening of October 18 (Thursday). Attendees are invited to enjoy this performance by USTC Student Orchestra of Nationalities Music. Visits to State Key Laboratory of Fire Science will be arranged on October 18 and October 19, two times every day. A visit to the KDlian Safety Technology Co., Ltd. will be arranged on afternoon of October 19 (Friday). The Symposium Banquet on October 19 (Friday) evening will take place at the Gaosu Lounge of AGNC Hotel. On October 20 afternoon, there will be a local tour in Hefei. Attendees are invited to visit the Anhui Museum, Huiyuan Park and/or Expo Anhui Pavilion, by which the attendees can get to learn more about the history and culture of Anhui Province. Finally, on October 20 evening you can say goodbye to your colleagues while enjoying a farewell dinner.

We hope that you find the meeting intellectually rewarding and that you enjoy your visit to Hefei.

Weicheng Fan

Chairman of the Local Organizing Committee

9th Asia-Oceania Symposium on Fire Science and Technology

### **Local Organizing Committee**

Prof. Weicheng Fan (Chair), Prof. Heping Zhang (co-Chair), Prof. Naian Liu (co-Chair)

Assoc. Prof. Jieji, Assoc. Prof. Qingsong Wang, Dr. Ran Tu, Mrs. Jun Chen, Mrs. Pingyue Yang, Mrs. Xian Yao, Assoc. Prof. Haixiang Chen, Assoc. Prof. Bin Yao, Assoc. Prof. Yuanzhou Li, Dr. Jiao Lei, Mr. Haobo Wang, Dr. Wenru Zeng, Dr. Jing Zhan, Mr. Jinjun Wang

# General Information

## **Registration desk**

October 17 Wednesday

14:00-18:30 *Registration* (Lobby of AGNC Hotel)

October 18 Thursday

8:00 *Registration* (AGNC Hotel, Room 715)

October 19 Friday

8:00 *Registration* (AGNC Hotel, Room 715)

October 20 Saturday

8:00 *Registration* (AGNC Hotel, Room 715)

On-site payment by credit card and cash in RMB will be possible during registration. Personal cheques will not be accepted.

## **Name badges**

Please wear your name badge at all times. Badges are required for admission to technical sessions, welcome reception, lunches, dinners, and banquet.

## **No smoking**

Smoking is not allowed inside the session rooms and public area.

## **Internet access**

AGNC Hotel has free wireless internet service.

## **Coffee breaks**

Coffee breaks will be provided every morning and afternoon during breaks between technical sessions. Snacks, coffee, tea and water will be served to registered symposium delegates wearing name badge.

## **Breakfasts**

Breakfasts will be provided by the hotel.

## **Lunches**

Free buffet will be served to the registered delegates with lunch tickets every day. These tickets will be distributed when registration.

## **Diners**

Welcome reception (October 17), buffet dinner (October 18), banquet (October 19) and farewell dinner (October 20) will be served to the registered delegates with dinner tickets.

## **Pickup service at airport**

The symposium will provide free pickup service at airport on October 16 and October 17. The sign can be seen at the exit of airport.

## **Public transportation**

The municipal transport service in Hefei is bus. It costs 1 RMB for normal bus or 2 RMB for air-conditional bus.

## **Taxis**

Taxies charge 8 or 9 RMB for initial 2.5 kilometers and 1.2-1.4 RMB for every additional 1 kilometer. Only cash is accepted.

## **Emergency**

In case of any emergency during the Symposium, please ask help at the registration desk, or call +86 551 5189888 ext. 715, or Qingsong Wang (mobile: 13514983704), or Naian Liu (mobile: 13956963264). Local staff will offer help 24 hours a day. General emergency call numbers in China: police110, medical120, fire119.

# Social Program

## **Welcome Reception in the Cafeteria of AGNC Hotel**

October 17 (Wednesday) 18:30-20:30

The cafeteria of AGNC Hotel (Mediterranean café) is on the first floor. Guidance towards the cafeteria will be available.

## **Performance of Traditional Chinese Music in AGNC Hotel**

October 18 (Thursday) 19:30-20:30

This special performance, by USTC Student Orchestra of Nationalities Music, will take place at the Gaosu Lounge of AGNC Hotel. Guidance towards the performance lounge will be available.

*Introduction to USTC Student Orchestra of Nationalities Music.* USTC Student Orchestra of Nationalities Music, founded in 2002, is one of the oldest, largest and most effective literature clubs, and it is also the most active amateur music performing group in Hefei. There are 50 formal performers and 7 faculties in our club. Zhao Yinhe, executive director of China Nationalities Orchestra Society, vice-chairman of Anhui Nationalities Orchestra Society, holds the art director of our orchestra. Since 2002, the orchestra has begun to set up symphonic ensemble training, and it organizes a folk music performance on campus annually. Recent years, the orchestra has received lots of reception and praises.

## **Visit the State Key Laboratory of Fire Science [Optional]**

October 18 (Thursday) or October 19 (Friday). 09:30-11:00 / 15:30-17:00

Tourist Bus Arranged (will depart from the gate of AGNC Hotel at 9:30 / 15:30)

## **Visit the KDLian Safety Technology Co., Ltd. (Sponsor) [Optional]**

October 19 (Friday) 15:30-17:30

Tourist Bus Arranged (will depart from the gate of AGNC Hotel at 15:30)

## **Symposium Banquet**

October 19 (Friday) 18:30-21:00

The Symposium Banquet will take place at the Gaosu Lounge of AGNC Hotel. Guidance towards the performance lounge will be available.

## **Visit Anhui Museum [Optional]**

October 20 (Saturday) 14:00-16:00

Tourist Bus Arranged (will depart from the gate of AGNC Hotel at 14:00)



***Introduction to Anhui Museum.*** Anhui is propitious for giving birth to great men. It enjoys a long history and an abundance of cultural remains and is one of the biggest provinces with a large number of cultural relics. For this reason, Anhui Museum boasts rich collections of cultural relics. From paleontological fossils in the Cretaceous Period to the cultural relics in the Paleolithic Period and the Neolithic Period, from bronze ware, ceramics, jade, inscriptions on bronzes and stone tablets, calligraphy and paintings, four treasures of the study, “Three Carvings” of brick, stone and wood carvings, ancient books since the Shang and Zhou dynasties to the historic and cultural relics and famous calligraphy and paintings of the modern times, Anhui Museum all has a mass of collections. All of these objects are of high historic, scientific and artistic value with distinct local features.

### **Visit Huiyuan Park and Expo Anhui Pavilion [Optional]**

October 20 (Saturday) 16:00-18:00

Note this tour will follow the Visit of Anhui Museum. Tourist Bus Arranged (will depart from the gate of Anhui Museum at 16:00)

***Introduction to Huiyuan Park.*** Huiyuan, based on the folk anima and cultural elites, represents romantic charms of the typical scenery in Anhui Province – queer Huangshan Mountain, graceful Jinhushang Mountain, elegant Tianzhushang Mountain, artistic Langyashan Mountain – all the beauties collected in one park. In the respective areas of the park, all the cities of Anhui Province have their indicative constructions with their own local folks and cultural features, either being an independent garden or complementing each other. Many beautiful artificial scenic spots, such as “Elegant Huangshan Mountain”, “Sails in Chaohu Lake”, “Zhiyuan Garden Charms”, “Buddhist Light in Jinhushan Mountains”, “Li Bo Writing Moon Poems”, etc. together with various modern museums reflecting the fruitful achievements of economic development made in Anhui Province, are all shown in this park. In a word, Huiyuan is a window to watch and learn Anhui Province as well as an ideal resort for sightseeing, entertainment and relaxation.

***Introduction to Expo Anhui Pavilion.*** World Expo Anhui Pavilion Relocates in Huiyuan Park. Visitors will be led through Anhui’s beautiful old streets and explore the success of Anhui merchants as well as its urban development. The province will also display 16 intangible cultural heritage crafts such as the production of Mo (Chinese solid ink) and Xuan paper as well as carving.

### **Farewell Dinner**

October 20 (Saturday) 18:30-20:30

Tourist Bus Arranged (will depart from the gate of Expo Anhui Pavilion at 18:00)

# Instructions for Speakers and Session Chairs

## **Oral presentation**

Please use the session room laptop for your presentation. To ensure a smooth meeting we recommend that you save your presentation on the session room laptop (and test it) well ahead of your talk in your respective session room. A student assistant will be available here to assist you 15 minutes before sessions begin and during coffee breaks. Please note that only Microsoft Powerpoint 2010 or earlier is available on the laptops.

Each room will have a wireless microphone for the speakers. Another microphone is available on the console for the session chair to make announcements or introduce the speakers. In each session room, two microphones are provided for questions from the audience. Remote controllers and laser pointers for slides will be available.

Each room will be staffed with two student assistants (one additional audiovisual technician in the largest session room). The room staff will assist speakers and session chairs, will provide the microphones to the audience for questions.

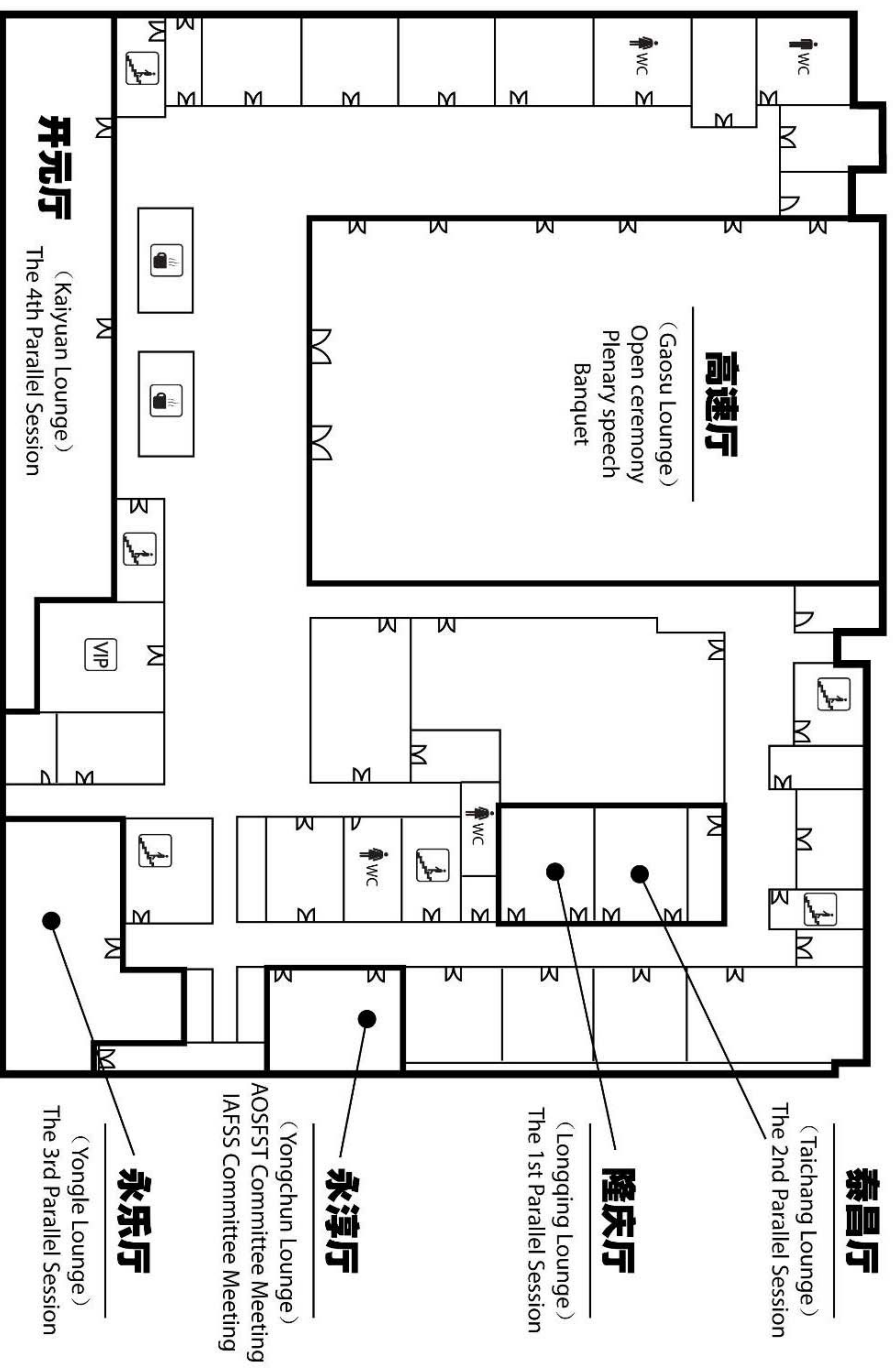
The large number of contributed papers and simultaneous sessions makes it essential that speakers and session chairs cooperate to keep the session timing accurate and synchronized. Contributed papers are limited to 20 minutes, with 4 additional minutes for questions/discussion, and 1 minute for transition to the next presentation and introduction of the next speaker. The Plenary speech is limited to 40 minutes, with 5 additional minutes for questions/discussion. Invited papers are limited to 30 minutes, with 4 additional minutes for questions/discussion, and 1 minute for transition to the next presentation.

A computer in each room will be used to time the session. At the beginning of the talk, the computer screen will be blue. A warning will be given at respectively 17 minutes (the color of the screen will be changed to be green) and 19 minutes (the color of the screen will be changed to be red and brown) indicating that the speaker has to finish soon. At 20 minutes, a buzzer warning will indicate the discussion period. At 25 minutes, there will be a flash of colors which informs the speaker and audience that the transition to the next speaker must take place.

## **Poster presentation**

Authors must hang the posters by themselves before the scheduled post presentation. Posters will be removed at the end of poster session by the authors or Symposium staff.

# Layout of AGNC Hotel



**Top View of AGNC Conference hall**

## Sponsors

Asia-Oceania Association for Fire Science and Technology (AOAFST) acknowledges with appreciation the following organizations whose generous support contributed to the success of the 9th Asia-Oceania Symposium on Fire Science and Technology.



National Natural Science Foundation of China



Chinese Academy of Sciences



University of Science and Technology of China



Hefei KDILIAN Safety Technology Co., LTD.



Xuzhou Dae-A Automans Co., LTD.

## Winner of Lifetime-contribution Award of AOAFST 2012



### **Prof. Toshisuke Hirano**

Professor Toshisuke Hirano graduated from the graduate course of the University of Tokyo, Department of Aeronautics on April of 1968. Then he was employed in Ibaraki University as a lecturer at Department of Mechanical Engineering and in 1971 promoted to be an associate professor there. In 1976 he moved to the University of Tokyo, Department of Reaction Chemistry and in 1985 was promoted to be a professor. Since 1994 he was belonged to Department of Chemical System Engineering. He retired from the University of Tokyo on March of 1999 and nominated as a professor emeritus.

Prof. Hirano was one of the founders of the Asia-Oceania Association for Fire Safety Science and Technology (AOAFST), which was known as AAFST (the Asian Association for Fire Science and Technology) before 1995. In 1995, AAFST expanded in its region to include Oceanian countries and changed the name to AOAFST. Prof. Hirano held the first chairman of AOAFST during 1992-1995.

Professor Hirano is a very well known expert in the fields of combustion and fire research. His achievements in those fields have been presented in more than 170 original papers and 65 review papers. Because of his contribution to the communities of combustion and fire research, he has been elected to be the Chairmen or Presidents of the Combustion Society of Japan (1989-1994), Asia-Oceania Association for Fire Science and Technology (1992-1995; 1995-Honorary President), International Association for Fire Safety Science (1997-2002), Japan Association for Fire Science and Engineering (1999-2001). His contribution to the Japanese Government is enormous. Based on his knowledge, he has been frequently nominated as a member (in many cases, chairman) of committees or advisor by Japanese Governmental organizations.

Because of his achievements, Professor Hirano has been given major awards by various organizations. Those include Award for Prominent Contribution (Japan Association for Fire Science and Technology, 1985), Dionizy Smolenski Medal (Poland Academy of Science, 1997), Award for Prominent Contribution in Science (Japan Institute of Energy, 1999), The International Science and Technological Cooperation Award of the People's Republic of China (2003), and The Bernard Lewis Medal (The Combustion Institute, 2004).

## **Winner of Lifetime-contribution Award of AOAFST 2012**



**Prof. Weicheng Fan**

Professor Fan graduated from the University of Science and Technology of China (USTC) in 1965. Then he was employed in USTC and in 1987 promoted to be a professor there. He has been engaged in cross-disciplinary research on fire safety science and engineering for 30 years. Prof. Fan established many mathematical and physical models of describing the interactions of flow, heat transfer and combustion in fires, and also developed the net modelling method for fire smoke simulation. He also contributed many theoretical models for special fire phenomena such as flashover, backdraft and fire whirl. Prof. Fan has authored seven monographs, 230 research papers (nearly 200 papers were indexed by Web of Science), and 6 authorized invention patents to date. Tens of papers of Prof. Fan were published in Combustion and Flame, Combustion Science and Technology, Fire Safety Journal, and so on.

Prof. Fan has also contributed to the technological researches of fire safety. His technologies have been successfully applied to hundreds of large and high-rise buildings in China. He ever won three times of China National Award for Science and Technology Progress. In recent years, Prof. Fan successfully established a China national emergency system for fires and other disasters. For his great contribution, he was elected to be an academician of the Chinese Academy of Engineering in 2001. In 2011, Prof. Fan won the First Prize of China National Award for Science and Technology Progress.

Prof. Fan is the founder of the State Key Laboratory of Fire Science (SKLFS). By his great leadership, SKLFS has developed rapidly to be one of the world's most eminent fire laboratories. Prof. Fan, Prof. Toshisuke Hirano and Prof. Victor K. Bulgakov together initiated the establishment process of Asia-Oceania Association for Fire Safety Science and Technology (AOAFST) in 1991. Prof. Fan ever held the Chairman of AOAFST for six years (1995-2000). Now AOAFST has developed rapidly to be the most important branch of IAFFSS. Prof. Fan also held the Executive Member of IAFFSS and the Vice Chairman of FORUM. He contributed nearly 30 invited/plenary speeches in symposiums of fire safety community.

## **Excellent Paper Award of 9th AOSFST**

- E01 Greg Baker, Colleen Wade, Michael Spearpoint and Charley Fleischmann. Developing probabilistic design fires for performance-based fire safety engineering (Paper Number in Technical Program: 2A09).
- E02 Jian Ma and Weiguo Song. Automatic clustering method of abnormal crowd flow pattern detection (Paper Number in Technical Program: 2A07).
- E03 Koyu Satoh, Naian Liu, Kuibin Zhou and Xiaodong Xie. CFD study of termination of fire whirls in urban fires (Paper Number in Technical Program: 2D01).
- E04 Ning Ren, Yi Wang and Arnaud Trouve. Large Eddy Simulation of Vertical Turbulent Wall Fires (Paper Number in Technical Program: 2B08).

# Symposium Committee

## Technical Committee

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Jiping Zhu, jpzhu@ustc.edu.cn  
Ruowen Zong, zongrw@ustc.edu.cn

# Session Chairs of 9th AOSFST

Name	Email	Affiliation	Session No.	Time	Date	Session
Greg B Baker	greg.baker@branz.co.nz	BRANZ Ltd	1A00	10:15-10:50	Oct. 18	Invited speech
Greg B Baker	greg.baker@branz.co.nz	BRANZ Ltd	1A01-1A03	10:50-12:05	Oct. 18	Evacuation Modelling
Edwin S Claridge	ed.claridge@beca.com	Beca	1A04-1A08	13:40-15:45	Oct. 18	Fire Service
George Hadjisophocleous	ghadjiso@connect.carleton.ca	Carleton University	1A04-1A08	13:40-15:45	Oct. 18	Fire Service
Grant Wang	grant.wang@arup.com.au	Arup	1A09-1A12	16:15-17:55	Oct. 18	Structural Fire Safety I
Takashi Tsuruda	TTsuruda@akita-pu.ac.jp	Akita Prefectural University	1A09-1A12	16:15-17:55	Oct. 18	Structural Fire Safety I
Jinhua Sun	sunjh@ustc.edu.cn	State Key Laboratory of Fire Science	1B00	10:15-10:50	Oct. 18	Invited speech
Bogdan Dlugogorski	bogdan.dlugogorski@newcastle.edu.au	The University of Newcastle	1B01-1B03	10:50-12:30	Oct. 18	Toxic and Hazardous Products
Jinhua Sun	sunjh@ustc.edu.cn	State Key Laboratory of Fire Science	1B01-1B03	10:50-12:30	Oct. 18	Toxic and Hazardous Products
Alvin Si-Xian Loo	si.loo@insa-rouen.fr	CNRS UMR 6614 CORIA, INSA de Rouen	1B04-1B08	13:40-15:45	Oct. 18	Extinction and Fire Extinguishment
Richard Yuen	bokkyuen@cityu.edu.hk	City University of Hong Kong	1B04-1B08	13:40-15:45	Oct. 18	Extinction and Fire Extinguishment
Oleg P Korobeinichev	korobein@kinetics.nsc.ru	Institute of Chemical Kinetics and Combustion	1B09-1B12	16:15-17:55	Oct. 18	Flammability/Thermal Degradation
Qiang Xu	kentqxu@hotmail.com	Nanjing University of Science and Technology	1B09-1B12	16:15-17:55	Oct. 18	Flammability/Thermal Degradation
Francesco Tamadini	francesco.tamadini@fnglobal.com	FM Global	1C00	10:15-10:50	Oct. 18	Invited speech
Francesco Tamadini	francesco.tamadini@fnglobal.com	FM Global	1C01-1C03	10:50-12:30	Oct. 18	Building and Compartment Fires I
Longhua Hu	hlh@ustc.edu.cn	State Key Laboratory of Fire Science	1C01-1C03	10:50-12:30	Oct. 18	Building and Compartment Fires I
Takeyoshi Tanaka	takey.tanaka@gmail.com	Kyoto University	1C04-1C08	13:40-15:45	Oct. 18	Building and Compartment Fires II
Cunfeng Zhang	cfzh@njut.edu.cn	Nanjing University of Technology	1C04-1C08	13:40-15:45	Oct. 18	Building and Compartment Fires II
Tensei Mizukami	mizukami@btl.org	The Center for Better Living	1C09-1C12	16:15-17:55	Oct. 18	Building and Compartment Fires III
Lizhong Yang	yanglzh@ustc.edu.cn	State Key Laboratory of Fire Science	1C09-1C12	16:15-17:55	Oct. 18	Building and Compartment Fires III
Weicheng Fan	wfan@tsinghua.edu.cn	State Key Laboratory of Fire Science	1D00	10:15-10:50	Oct. 18	Invited speech
Fa-lin Chen	falin@iam.ntu.edu.tw	National Taiwan University	1D01-1D03	10:50-12:30	Oct. 18	Tunnel Fires
Weicheng Fan	wfan@tsinghua.edu.cn	State Key Laboratory of Fire Science	1D01-1D03	10:50-12:30	Oct. 18	Tunnel Fires
Ran Vijay Kumar Singh	drvksingh@yahoo.com	CSIR-Central Institute of Mining & Fuel Research	1D04-1D08	13:40-15:45	Oct. 18	Industrial Safety I
Eric Guillaume	eric.guillaume@lne.fr	Laboratoire national de métrologie et d'essais	1D04-1D08	13:40-15:45	Oct. 18	Industrial Safety I

Marc L Janssens	mijanssens@swri.org	Southwest Research Institute	ID09-1D12	16:15-17:55	Oct. 18	Industrial Safety II
Qingsong Wang	pinew@ustc.edu.cn	State Key Laboratory of Fire Science	ID09-1D12	16:15-17:55	Oct. 18	Industrial Safety II
Asif S Usmani	asif.usmani@ed.ac.uk	The University of Edinburgh	2A00	8:20-8:55	Oct. 19	Invited speech
Asif S Usmani	asif.usmani@ed.ac.uk	The University of Edinburgh	2A01-2A03	8:55-10:10	Oct. 19	Structural Fire Safety II
Linhai Han	lhhan@singhua.edu.cn	Tsinghua University	2A01-2A03	8:55-10:10	Oct. 19	Structural Fire Safety II
Charles M Fleischmann	charles.fleischmann@canterbury.ac.nz	University of Canterbury	2A04	10:40-11:15	Oct. 19	Invited speech
Charles M Fleischmann	charles.fleischmann@canterbury.ac.nz	University of Canterbury	2A05-2A07	11:15-12:30	Oct. 19	Evacuation Behavior
Ya-ping He	y.he@uws.edu.au	University of Western Sydney	2A05-2A07	11:15-12:30	Oct. 19	Evacuation Behavior
Jose Torero	j.torero@ed.ac.uk	University of Queensland	2A08-2A11	13:40-15:20	Oct. 19	Risk Analysis/Fire Safety Design
patrick Francois Ida van Hees	patrick.van_hees@brandlth.se	Lund University	2A08-2A11	13:40-15:20	Oct. 19	Risk Analysis/Fire Safety Design
James S T'ien	jsf2@case.edu	Case Western Reserve University	2B00	8:20-8:55	Oct. 19	Invited speech
James S T'ien	jsf2@case.edu	Case Western Reserve University	2B01-2B03	8:55-10:10	Oct. 19	Flame Retardant
Yuan Hu	yuanhu@ustc.edu.cn	State Key Laboratory of Fire Science	2B01-2B03	8:55-10:10	Oct. 19	Flame Retardant
Baljinder Kandola	B.Kandola@bolton.ac.uk	The University of Bolton	2B04-2B07	10:40-11:05	Oct. 19	Fire Chemistry
Fei You	yfei@ustc.edu.cn	Nanjing University of Technology	2B04-2B07	10:40-11:05	Oct. 19	Fire Chemistry
Arnaud Trouve	atrouve@umd.edu	University of Maryland	2B08-2B11	13:40-15:20	Oct. 19	Numerical Modelling
Jie Ji	jijie232@ustc.edu.cn	State Key Laboratory of Fire Science	2B08-2B11	13:40-15:20	Oct. 19	Numerical Modelling
Sergey B Dorofeev	sergey.dorofeev@fnglobal.com	FM Global	2C00	8:20-8:55	Oct. 19	Invited speech
Guangxuan Liao	gxliao@ustc.edu.cn	State Key Laboratory of Fire Science	2C01-2C03	8:55-10:10	Oct. 19	Sprinkler Suppression
Sergey B Dorofeev	sergey.dorofeev@fnglobal.com	FM Global	2C01-2C03	8:55-10:10	Oct. 19	Sprinkler Suppression
Greg J Griffin	gregory.griffin@rmit.edu.au	RMIT University	2C04-2C07	10:40-12:30	Oct. 19	Water Mist/Spray Suppression I
Xishi Wang	wxs@ustc.edu.cn	State Key Laboratory of Fire Science	2C04-2C07	10:40-12:30	Oct. 19	Water Mist/Spray Suppression I
Wolfgang Krull	krull@mts.uni-due.de	Universität Duisburg-Essen	2C08-2C11	13:40-15:20	Oct. 19	Fire and Smoke Detection
Yuki Akizuki	akizuki@edu.u-toyama.ac.jp	University of Toyama	2C08-2C11	13:40-15:20	Oct. 19	Fire and Smoke Detection
Vincent P Dowling	Vince.Dowling@bigpond.com	/	2D00	8:20-8:55	Oct. 19	Invited speech
Samuel L Manzello	samuel.manzello@nistr.gov	NIST	2D01-2D03	8:55-10:10	Oct. 19	Urban, WUI, Forest Fire I
Vincent P Dowling	Vince.Dowling@bigpond.com	/	2D01-2D03	8:55-10:10	Oct. 19	Urban, WUI, Forest Fire I
Akihiko Hokugo	hokugo@nifty.com	Kobe University	2D04-2D07	10:40-12:30	Oct. 19	Urban, WUI, Forest Fire II
Xiaorui Tian	xiaorui_tian@sina.com	Chinese Academy of Forestry	2D04-2D07	10:40-12:30	Oct. 19	Urban, WUI, Forest Fire II

Kazunori Harada	harada@archi.kyoto-u.ac.jp	Kyoto University	2D08-2D11	13:40-15:20	Oct. 19	Effect of Pressure
Yuanzhou Li	yzli@ustc.edu.cn	State Key Laboratory of Fire Science	2D08-2D11	13:40-15:20	Oct. 19	Effect of Pressure
Wan-ki Chow	beeilze@polyu.edu.hk	The Hong Kong Polytechnic University	3A00	8:30-9:05	Oct. 20	Invited speech
Wan-ki Chow	beeilze@polyu.edu.hk	The Hong Kong Polytechnic University	3A01-3A03	9:05-10:20	Oct. 20	Fire Statistical Analysis
Tao Chen	chentao.a@isinghua.edu.cn	Tsinghua University	3A01-3A03	9:05-10:20	Oct. 20	Fire Statistical Analysis
Li-jing Gao	gao@cis.ac.jp	Chiba Institute of Science	3A04-3A07	10:50-12:30	Oct. 20	Evacuation Method
Weiguo Song	wsgsong@ustc.edu.cn	State Key Laboratory of Fire Science	3A04-3A07	10:50-12:30	Oct. 20	Evacuation Method
John L de Ris	john.deris@verizon.net	FM Global	3B00	8:30-9:05	Oct. 20	Invited speech
John L de Ris	john.deris@verizon.net	FM Global	3B01-3B03	9:05-10:20	Oct. 20	Pool Fire and Fire Plume
Lars Evers	lars.evers@dsm.com	DSM Composite Resins SH R&D Center	3B04-3B07	10:50-12:30	Oct. 20	Fire Resistance / Fire Hindrance
Naiian Liu	liunai@ustc.edu.cn	State Key Laboratory of Fire Science	3C00	8:30-9:05	Oct. 20	Invited speech
Chung-Hwei Su	georgesu2000@gmail.com	Wufeng University	3C01-3C03	9:05-10:20	Oct. 20	Water Mist/Spray Suppression II
Nai-Kong Fong	benkfong@polyu.edu.hk	The Hong Kong Polytechnic Univ.	3C04-3C07	10:50-12:30	Oct. 20	Optical Analysis of Smoke
Yulianto Sulistyvo Nugroho	yulianto@eng.ui.ac.id	Universitas Indonesia	3C04-3C07	10:50-12:30	Oct. 20	Optical Analysis of Smoke
Xi Jiang	xijiang@ustc.edu.cn	State Key Laboratory of Fire Science	3D00	8:30-9:05	Oct. 20	Invited speech
Xi Jiang	xijiang@ustc.edu.cn	State Key Laboratory of Fire Science	3D01-3D03	9:05-10:20	Oct. 20	Coal Fire
Yi Wang	yi.wang@finglobal.com	University of Maryland	3D04-3D07	10:50-12:30	Oct. 20	Measurement and Testing
Dongliang Sun	dongliangsun@126.com	SEPKERACCP	3D04-3D07	10:50-12:30	Oct. 20	Measurement and Testing
Ya-ping He	y.he@uws.edu.au	University of Western Sydney	Opening ceremony	8:20-9:00	Oct. 18	
Bogdan Dlugogorski	bogdan.dlugogorski@newcastle.edu.au	The University of Newcastle	Plenary speech	9:00-9:45	Oct. 18	
Kaiyuan Li	kyli@ustc.edu.cn	University of Canterbury	Poster session	15:50-16:50	Oct. 19	
Takeyoshi Tanaka	takey.tanaka@gmail.com	Kyoto University	Welcome speech	18:30-19:00	Oct. 19	by Prof. Wanki Chow
Naiian Liu	liunai@ustc.edu.cn	State Key Laboratory of Fire Science	Banquet	19:00-21:00	Oct. 19	

# Technical Program of 9th AOSFST

<b>October 17 Wednesday</b>			
14:00-18:30	<i>Registration</i> (Lobby of AGNC Hotel)		
18:30-20:30	<i>Welcome Reception</i> (Cafeteria of AGNC Hotel)		
<b>October 18 Thursday</b>			
<i>Registration</i> (AGNC Hotel, Room 715)			
8:00			
8:20-9:00	<i>Open ceremony</i> (Gaosu Lounge) Weicheng Fan, <i>Director of SKLFS, USTC</i> Takeyoshi Tanaka, <i>9th AOSFST TC Chair</i> Naiian Liu, <i>9th AOSFST PC Chair and Host Committee Executive Chair</i> Session Chair: Yaping He	Bogdan Dlugogorski, <i>Chairman of the IAFFSS</i> Tao Liu, <i>NSFC</i>	
9:00-9:45	<i>Plenary speech</i> (Gaosu Lounge): Mechanism of buoyant turbulent diffusion flames John L. de Ris, <i>Factory Mutual Global, USA</i> Session Chair: Bogdan Dlugogorski		
9:45-10:15	<i>Coffee break</i>		
	Longqing Lounge	Taichang Lounge	Yongle Lounge
10:15-10:50	<i>Invited speech</i> Session Chair: Greg Baker 1A00 10:15-10:50 Experiment and modeling of microscopic movement characteristic of pedestrians Weiguang Song, <i>State Key Laboratory of Fire Science, China</i>	<i>Invited speech</i> Session Chair: Jinhua Sun 1B00 10:15-10:50 Material flammability: A combustion science perspective James T'ien, <i>Case Western Reserve University, USA</i>	<i>Invited speech</i> Session Chair: Francesco Tamadini 1C00 10:15-10:50 Fire safety design for tall buildings José Torero, <i>University of Edinburgh, UK</i>
			Gaosu Lounge
			<i>Invited speech</i> Session Chair: Weicheng Fan 1D00 10:15-10:50 The integrated strategies for fire safety of long road tunnels in Taiwan Falin Chen, <i>National Taiwan University</i>
10:50-12:05	<b>Evacuation Modelling</b> Session Chairs: Greg Baker 1A01 10:50-11:15 Calculation of mixed evacuation of stair and elevator using EVACNET4 Yonglin Min and Yanfei Yu.	<b>Toxic and Hazardous Products</b> Session Chairs: Jinhua Sun, Bogdan Dlugogorski 1B01 10:50-11:15 Comparative study on the formation of toxic species from 4-chlorodiphenyl in fires: effect of catalytic surfaces Song Hou, John Mackie, Eric Kennedy and	<b>Building and Compartment Fires I</b> Session Chairs: Francesco Tamadini, Longhua Hu 1C01 10:50-11:15 Review on fire safety of exterior wall claddings in high-rise buildings in China Lei Peng, Zhaopeng Ni and Xin Huang.
			<b>Tunnel Fires</b> Session Chairs: Weicheng Fan, Falin Chen 1D01 10:50-11:15 The reduced-scale experimental research on tunnel fire with natural ventilation Zhongyuan Yuan, Bo Lei, Ahmed Kashef.

	1A02 11:15-11:40	Bogdan Dlugogorski.	1B02 11:15-11:40	1C02 11:15-11:40	1D02 11:15-11:40	Rescue route reselection model and algorithm for the unexpected accident	Research on the phenomenon of plug-holing under mechanical smoke exhaust in tunnel fire	
	Xiaoge Wei, Wei Lv and Weiguo Song.	A model to predict carbon monoxide of woods under external heat flux-part I: theory	Long Shi and Michael Yit Lin Chew.	Investigating the merging behavior at the floor-stair interface of high-rise building based on computer simulations	Linjie Li, Zihe Gao, Jie Ji, Jianyun Han and Jinhua Sun.			
	1A03 11:40-12:05	1B03 11:40-12:05	1C03 11:40-12:05	1D03 11:40-12:05	Experiment and modelling for pedestrian following behavior using velocity-headway relation	A model to predict carbon monoxide of woods under external heat flux-part II: validation	No Presentation	
	Wei Lv, Zhiming Fang, Xiaoge Wei, Weiguo Song and Xuan Liu.	Long Shi and Michael Yit Lin Chew.	Bong-Chan Kim and Young-Jin Kwon.	An experimental study on the combustibles investigation and fire growth rate for predicting initial fire behavior in building	Dong-Goo Seo, Dong-Eun Kim,			
12:10-13:35	<b>Lunch (Cafeteria of AGNC Hotel)</b>							
	Longqing Lounge	Taichang Lounge	Yongle Lounge	Kaiyuan Lounge				
13:40-15:45	<b>Fire Service</b>	<b>Extinction and Fire Extinguishment</b>	<b>Building and Compartment Fires II</b>	<b>Industrial Safety I</b>				
	Session Chairs: George Hadjisophocleous, Edwin Claridge	Session Chairs: Richard K.K. Yuen, Alvin Si-Xian Loo	Session Chairs: Takeyoshi Tanaka, Cunfeng Zhang	Session Chairs: Eric Guillaume, Ran Vijay Kumar Singh				
	1A04 13:40-14:05	1B04 13:40-14:05	1C04 13:40-14:05	1D04 13:40-14:05	Fire safety provisions for aged concrete building structures	On the self-extinction time of pool fire in closed compartments	Facade flame heights from enclosure fires with side walls at the opening	Influence of the protective layer of polyvinylchloride resin on failure of LPG vessel caused by heat radiation
	Grant Wang, David Barber, Peter Johnson and Man-Cheung Hui.	Jiaqing Zhang, Shouxiang Lu, Changhai Li, Man Yuan and Richard K. K. Yuen.	Kaihua Lu, Longhua Hu, Fei Tang, Michael Delichatsios, Xiaochun Zhang and Linghui He.	Dongliang Sun, Guangtuan Huang, Juncheng Jiang, Mingguang Zhang and Zhirong Wang.				
	1A05 14:05-14:30	1B05 14:05-14:30	1C05 14:05-14:30	1D05 14:05-14:30	Upgrading fire safety strategies for the existing non-residential occupancies in Taipei city	Vent size effect on self-extinction of pool fire in a ceiling vented compartment	An experimental study on fire spread over polyurethane block receiving heat feedback from adjacent walls	Comparison of the maximum gas combustion pressure of hydrogen/oxygen/nitrogen-between chemical equilibrium calculations and experimental data
	Shen-Wen Chien, Ying-Yueh Chen, Ching-Yuan Lin, Tzu-Sheng Shen and Po-Ta Huang.	Qize He, Changhai Li and Shouxiang Lu.	Junghoon Ji, Kazuhiko Ido, Kazunori Harada, Yoshifumi Ohmiya and Masaaki Noaki.	Gang Tao and Daniel Crowl.				



	1A06 14:30-14:55 Petrochemical plant multi-objective and multi-stage fire emergency management technology system based on the fire risk prediction Xuanya Liu, Qinglin Zhang and Xiaoyuan Xu.	1B06 14:30-14:55 Flame extinction in a ventilation controlled compartment Alvin Si-Xian Loo, Alexis Coppalle and Philippe Aine.	1C06 14:30-14:55 Comparison of fire induced and heat driven flows in vertical shafts Yincheng Guo and Lianyu Cao.	1D06 14:30-14:55 THEEF model evaluation for cables used in nuclear plants in Japan Marc Janssens, Stephen Turner and Susumu Tsuchino.
	1A07 14:55-15:20 Comparison of smoke extraction modes in underground channel fires Jie Ji, Chuangang Fan, Zihao Gao, Linjie Li and Wenxi Shi.	1B07 14:55-15:20 Analysis of fire spread and fire extinguishing agent distribution in nacelle of helicopter under no-ventilation condition Xuemini Niu, Yongqi Xie and Yuji Hasemi.	1C07 14:55-15:20 Study on the influence of ventilation condition on the heat release rate of the CRH passenger rail car Junmin Chen, Xiaolin Yao and Shaoping Li.	1D07 14:55-15:20 The influences of key factors on the consequences following the natural gas leakage from pipeline Hongya Zhu, Zhanli Mao, Qingsong Wang and Jinhua Sun.
	1A08 15:20-15:45 New Zealand fire service response times to structure fires Ed Claridge and Michael Spearpoint.	1B08 15:20-15:45 Synthesis and fire-extinguishing affection of monobromotrifluoropropene Xiang Jin, Xiaomeng Zhou, Guangxuan Liao and Jia Wang.	1C08 15:20-15:45 On determining density and specific heat of New Zealand medium density fibreboard Kaiyuan Li.	1D08 15:20-15:45 No Presentation
15:45-16:15	<i>Coffee break</i>			
	Longqing Lounge	Taichang Lounge	Yongle Lounge	Kaiyuan Lounge
16:15-17:55	<b>Structural Fire Safety I</b> Session Chairs: Takashi Tsuruda, Grant Wang	<b>Flammability/Thermal Degradation</b> Session Chairs: Oleg Korobeinichev, Qiang Xu	<b>Building and Compartment Fires III</b> Session Chairs: Tensei Mizukami, Lizhong Yang	<b>Industrial Safety II</b> Session Chairs: Marc Janssens, Qingsong Wang
	1A09 16:15-16:40 Numerical investigation of thermal responses of a composite structure in horizontally travelling fires using openses Yaqiang Jiang, Panagiotis Kotsovinos, Asif Usmani, Guillermo Rein and Jamie Stern-Gottfried.	1B09 16:15-16:40 Test flammability of PVC wall panel with cone calorimetry Qiang Xu, Cong Jin, Martin Zachar and Andreea Majlingova.	1C09 16:15-16:40 Analysis of compartment fires with a ceiling vent Bing Chen, Shouxiang Lu, Changhai Li and Man Yuan.	1D09 16:15-16:40 Experiment study of oil tank fire characteristics dependent on the opening of tank top Jingfu Guan, Jun Fang, Dan Zhang, Jinjun Wang and Yongming Zhang.
	1A10 16:40-17:05 The influence of tensile membrane action on fire-exposed composite concrete	1B10 16:40-17:05 Investigation of the flammability of different cables using pyrolysis combustion	1C10 16:40-17:05 Defining the difference between backdraft and smoke explosions	1D10 16:40-17:05 A mission-oriented risk assessment methodology for naval vessel fire caused by

	floor-steel beams with web-openings Bernice Y.Y. Wong and Ian W. Burgess.	flow calorimeter Hua Yang, Qiang Fu, Xudong Cheng, Richard K.K. Yuen and Heping Zhang.	Charles Fleischmann, Zhijian Chen	non-contact explosions using Bayesian networks Jia Jia and Shouxian Lu.
	1A11 17:05-17:30 Fire resistance study of axially loaded high strength steel columns Wei-Yong Wang, Yoshi Ohnuya and Gao-Feng Ma.	1B11 17:05-17:30 A study on the pyrolysis of CHF <sub>3</sub> Pin Zhang, Liyang Cao, Renming Pan, Zefan Jiang, Kuang Qin and Quanwei Li.	1C11 17:05-17:30 A simplified formula for occurrence of flashover and corresponding heat release rate Sung-Chan Lee and Kazunori Harada.	1D11 17:05-17:30 Influencing factors of flammable refrigerants leaking in building air-conditioning system Quanyi Liu, Hui Zhang, Yi Liu, Hong Huang, Xiaole Zhang, Zhipeng Li and Wei Yao.
	1A12 17:30-17:55 Entire and partial heating tests of high strength concrete small columns Jae-Young Lee, Kannoni Harada, Sung-Goo Kang, Young-jin Kwon and Mashiro Yamazaki.	1B12 17:30-17:55 Thermal decomposition extent of forest duff due to surface forest fire Haixiang Chen, Weirao Zhao, Nalan Liu and Jianjun Zhou.	1C12 17:30-17:55 Analysis of influencing factors on flashover in the long-narrow confined space Weifeng Zhao, Ruowen Zong, Bin Yao, Jiabin Gao and Guangxuan Liao.	1D12 17:30-17:55 No Presentation
09:30-11:00	<i>Visit the State Key Laboratory of Fire Science</i> (Optional), Tourist Bus Arranged (will depart from the gate of AGNC Hotel at 9:30)			
15:30-17:00	<i>Visit the State Key Laboratory of Fire Science</i> (Optional), Tourist Bus Arranged (will depart from the gate of AGNC Hotel at 15:30)			
18:00-19:00	<i>Dinner</i> (Cafeteria of AGNC Hotel)			
19:30-20:30	<i>Performance of Traditional Chinese Music (USTC Student Orchestra of Nationalities Music)</i> (Gaosu Lounge)			
<b>October 19 Friday</b>				
8:00	<i>Registration</i> (AGNC Hotel, Room 715)			
	Longqing Lounge	Taichang Lounge	Yongle Lounge	Kaiyuan Lounge
8:20-8:55	<i>Invited speech</i> Session Chair: Asif Usmani 2A00 8:20-8:55 Fire performance of steel reinforced concrete (SRC) structures Linhai Han, <i>Tsinghua University, China</i>	<i>Invited speech</i> Session Chair: James S T'ien 2B00 8:20-8:55 Combustion chemistry and decomposition kinetics of forest fuels Oleg Korobeinichev, <i>Siberian Branch Russian Academy of Sciences, Russia</i>	<i>Invited speech</i> Session Chair: Sergey B Dorofeev 2C00 8:20-8:55 Accuracy (trueness and precision) of cone calorimeter tests with and without a vitiated air enclosure Damien Marquis, <i>Laboratoire Nationale de metrology et d'Essais, France</i>	<i>Invited speech</i> Session Chair: Vincent P Dowling 2D00 8:20-8:55 Experimentally simulating wind driven firebrand showers in Wildland-urban interface (WUI) fires: Overview of the NIST firebrand generator (NIST dragon) technology

						Samuel Manzello, <i>NIST, USA</i>
8:55-10:10	<b>Structural Fire Safety II</b> Session Chairs: Asif Usmani, Linhai Han	<b>Flame Retardant</b> Session Chairs: James S T'ien, Yuan Hu	<b>Sprinkler Suppression</b> Session Chairs: Sergey B Dorofeyev, Guangxuan Liao	<b>Urban, WUI, Forest Fires I</b> Session Chairs: Vincent P Dowling, Samuel L Manzello		
	2A01 8:55-9:20 Fire resistance performance analysis of reinforced concrete members using Galerkin finite element method Young-Kin Kwon, Dong-Jun Kim, Seung-Goo Kang, Bong-Chan Kim, Byung-Chan Han, Jea-Young Lee and Kazunori Harada.	2B01 8:55-9:20 Effect of organically modified montmorillonite on thermal degradation mechanism of polycarbonate nanocomposites Junfeng Xiao, Shaofeng Wang, Ping Lu and Yuan Hu.	2C01 8:55-9:20 Assessing the reliance of sprinklers for active protection of structures Leong Poon.	2D01 8:55-9:20 CFD study of termination of fire whirls in urban fires Koyu Saroh, Naitan Liu, Kurbin Zhou and Xiaodong Xie.		
	2A02 9:20-9:45 Simple equations for predicting thermal resistance of mud-plastered wall Tensei Mizukami and Takeyoshi Tanaka.	2B02 9:20-9:45 Study on the flammability and thermal degradation of a novel intumescent flame retardant EPDM composites Gang Tang, Yuan Hu and Lei Song.	2C02 9:20-9:45 Analysis on practical thermal responsiveness of the glass bulb sprinklers Chung-Hwei Su, Hung-Yi Hou and Chien-Wei Wu.	2D02 9:20-9:45 Sequential decision analysis of fire emergency and rescue on urban successional building fires Deyong Wang, Tao Weng, Jiping Zhu, Lu Lu and Guangxuan Liao.		
	2A03 9:45-10:10 Improvement of fire resistance of concrete with steel slag aggregate Ivanka Netinger, Marija Jelčić Rukavina and Ana Mladenović.	2B03 9:45-10:10 Combination effect of organically modified montmorillonite and layered nickel hydroxide on the fire retardancy of poly (lactic acid) Ningning Hong, Lei Song, Weizhao Hu and Yuan Hu.	2C03 9:45-10:10 Numerical studies on the interaction of sprinkler and smoke layer Cunfeng Zhang and Wanki Chow.	2D03 9:45-10:10 Study on the influences of air-inlet width on fire whirl combustion characteristic Hanyuan Yu, Song Guo, Minjun Peng, Quanwei Li, Jifeng Ruan, Wei Wan and Chen Chen.		
10:10-10:40	<b>Coffee break</b>					
	Longqing Lounge	Taichang Lounge	Yongle Lounge	Kaiyuan Lounge		
10:40-12:30	<b>Invited speech</b> Session Chair: Charley Fleischmann	<b>Fire Chemistry</b> Session Chairs: Baljinder Kandola, Fei You	<b>Water Mist/Spray Suppression I</b> Session Chairs: Greg Griffin, Xishi Wang	<b>Urban, WUI, Forest Fires II</b> Session Chairs: Xiaorui Tian, Akihiko Hokugo		
	2A04 10:40-11:15 Probabilistic fire-risk-assessment function	2B04 10:40-11:05 Influence of triphenyl phosphate on	2C04 10:40-11:05 Experimental data on water mist	2D04 10:40-11:05 Preliminary analysis of slope and fuel bed		

	and its application in fire resistance design Yaping He, <i>University of Western Sydney, Australia</i>	degradation kinetics of ultrahigh-molecular-weight polyethylene in inert and oxidative media Oleg Korobeinichev, Alexander Paletsky, Munko Gonchikzhapov, Irina Shundrina, Hanxiang Chen and Nanan Liu.	suppression Jun Qin and Wanki Chow.	effect on jump behavior in forest fires Domingos Viegas, Jorge Raposo and António Figueiredo.
	<b>Evacuation Behavior</b> Session Chairs: Charley Fleischmann, Yaping He 2A05 11:15-11:40 Empirical characteristics of different types of pedestrian streams Jun Zhang and Armin Seyfried.	2B05 11:05-11:30 Differences between direct relation graph and error-propagation-based reduction methods for large hydrocarbons Jiangtao An and Yong Jiang.	2C05 11:05-11:30 Experimental study on fire extinguishing of water mist with a newly prepared multi-component additive Binbin Wu and Guangxuan Liao.	2D05 11:05-11:30 An modified model of direct estimation method for fine fuel moisture content prediction by considering crown density Jiping Zhu, Jingrui Jia, Jun Wu, Linhe Zhang and Jiajie Yao.
	2A06 11:40-12:05 Numerical investigation on the effects of human movements on smoke propagation in building fire Zhuayang Han, Wenguo Weng and Quanyi Huang.	2B06 11:30-11:55 Dangerous smoke classification using mathematical model of meaning Revaldo I.M. Zen, M. Rahmat Widyanto, Gandjar Kiswanto and Yulianto Nugroho.	2C06 11:30-11:55 On the fire intensification of pool fire with water mist Tianshui Liang, Wei Zhong, Richard K.K. Yuen, Shunning Lo and Guangxuan Liao.	2D06 11:30-11:55 The fire danger and fire regime for Daxinganling region within 1987-2010 Xiaorui Tian, Lifu Shu, Fengjun Zhao, Mingyu Wang and Liguang Chen.
	2A07 12:05-12:30 Automatic clustering method of abnormal crowd flow pattern detection Jian Ma and Weiguo Song.	2B07 11:55-12:20 No Presentation	2C07 11:55-12:20 No Presentation	2D07 11:55-12:20 No Presentation
12:00-13:35	<b>Lunch</b> (Cafeteria of AGNC Hotel)			
	Longqing Lounge	Taichang Lounge	Yongle Lounge	Kaiyuan Lounge
13:40-15:20	<b>Risk Analysis/Fire Safety Design</b> Session Chairs: José Torero, Patrick van Hees 2A08 13:40-14:05 Fire risk analysis of a 6-storey residential building by curisk	<b>Numerical Modelling</b> Session Chairs: Arnaud Trounev, Jie Ji 2B08 13:40-14:05 Large eddy simulation of vertical turbulent wall fires	<b>Fire and Smoke Detection</b> Session Chairs: Wolfgang Krull, Yuki Akizuki 2C08 13:40-14:05 A real-time video fire flame and smoke detection algorithm	<b>Effect of Pressure</b> Session Chairs: Kazunori Harada, Yuanzhou Li 2D08 13:40-14:05 Momentum-dominated methane jet flame at sub-atmospheric pressure

	Xiao Li, Xia Zhang and George Hadjisophocleous. 2A09 14:05-14:30 Developing probabilistic design fires for performance-based fire safety engineering Greg Baker, Colleen Wade, Michael Spearpoint and Charley Fleischmann.	Ning Ren, Yi Wang and Arnaud Trouve. 2B09 14:05-14:30 Numerical simulation of premixed methane-air flame propagating parameters in square tube with different solid obstacles Quan Wang, Honghao Ma, Zhaowu Shen and Zirui Guo.	Chunyu Yu, Zhibin Mei and Xi Zhang. 2C09 14:05-14:30 Optimal parameter of flame detection for outdoor fire under transverse airflow and illumination environments Dan Zhang, Jun Fang, Jingfu Guan, Jinjun Wang and Yongming Zhang.	Yi Zeng, Jun Fang, Jingwu Wang, Jie Li, Ran Tu and Yongming Zhang. 2D09 14:05-14:30 Characterization and comparison of flame fluctuation magnitude of a turbulent buoyant jet diffusion flame under reduced- and normal pressure atmosphere Qiang Wang, Longhua Hu, Fei Tang, Xiaochun Zhang and Michael Delichatsios.
	2A10 14:30-14:55 The use of lifts for emergency evacuation - a reliability study Daniel Turhanlar, Yaping He and Glenn Stone.	2B10 14:30-14:55 Large eddy simulation of fire smoke re-circulation in urban street canyons of different aspect ratios Xiaochun Zhang, Longhua Hu, Fei Tang.	2C10 14:30-14:55 A modified method of video-based smoke detection for transportation hub complex Jie Li, Wei Yuan, Yi Zeng and Yongming Zhang.	2D10 14:30-14:55 An experimental study on buoyant spilled thermal plume temperature profile from over-ventilated enclosure fires in a reduced air pressure Fei Tang, Longhua Hu, Qiang Wang, Xiaochun Zhang, Kaifua Lu and Michael Delichatsios.
	2A11 14:55-15:20 The optimal placement of sensors in square target regions with varying boundary length Sen Li, Xudong Cheng, Yanwei Chen and Heping Zhang.	2B11 14:55-15:20 Numerical modeling of liquid n-heptane pool fires based on heat feedback equilibrium Wei Yao, Jiusheng Yin, Xiaokang Hu, Jian Wang and Hui Zhang.	2C11 14:55-15:20 No Presentation	2D11 14:55-15:20 Influence of different low air pressure on combustion characteristics of ethanol pool fires Cuipeng Kuang, Yanzhou Li, Shi Zhu and Jian Li.
15:20-15:50	<i>Coffee break</i>			
15:50-16:50	<i>Poster Session</i> (Session Chair: Kaiyuan Li)			
09:30-11:00	<i>Visit the State Key Laboratory of Fire Science</i> (Optional), Tourist Bus Arranged (will depart from the gate of AGNC Hotel at 9:30)			
15:30-17:00	<i>Visit the State Key Laboratory of Fire Science</i> (Optional), Tourist Bus Arranged (will depart from the gate of AGNC Hotel at 15:30)			
15:30-16:30	<i>AOFSST Committee Meeting</i> (Yongchun Lounge), Session Chair: Wanki Chow, <i>Chairman of the AOFSST</i>			
16:30-18:00	<i>IAFSS Committee Meeting</i> (Yongchun Lounge), Session Chair: Bogdan Dlugogorski, <i>Chairman of the IAFSS</i>			
15:30-17:30	<i>Visit the KDLian Safety Technology Co., Ltd.</i> (Sponsor) (Optional), Tourist Bus Arranged (will depart from the gate of AGNC Hotel at 15:30)			
18:30-21:00	<i>Welcome speech</i> (Session Chair: Takeyoshi Tanaka): Experience on implementing performance-based design in Hong Kong, Wanki Chow, <i>Chairman of the AOFSST</i> (Gaosu Lounge) <i>Banquet</i> (Session Chair: Naitan Liu) (Gaosu Lounge)			

<b>October 20 Saturday</b>			
8:00	<i>Registration</i> (AGNC Hotel, Room 715)		
	Longqing Lounge	Taichang Lounge	Yongle Lounge
8:30-9:05	<i>Invited speech</i> Session Chair: Wanki Chow	<i>Invited speech</i> Session Chair: John L. de Ris	<i>Invited speech</i> Session Chair: Naian Liu
3A00 8:30-9:05	Mechanism of tsunami fires after the Great East Japan Earthquake 2011 and evacuation from the tsunami fires	3B00 8:30-9:05 Validation and verification of fire models for fire safety engineering	3C00 8:30-9:05 Nuclear power plant explosions at Fukushima-Daiichi
	Akihiko Hokugo, <i>Kobe University, Japan</i>	Patrick van Hees, <i>University of Lund, Sweden</i>	Takashi Tsuruda, <i>Akita Prefecture University, Japan</i>
9:05-10:20	<b>Fire Statistical Analysis</b> Session Chairs: Wanki Chow, Tao Chen	<b>Pool Fire and Fire Plume</b> Session Chairs: John L. de Ris	<b>Water Mist/Spray Suppression II</b> Session Chairs: Chung-Hwei Su
3A01 9:05-9:30	Influence of government on the power-law distribution of city fires in Jiangxi, China	3B01 9:05-9:30 Analysis of the combustion efficiencies and heat release rates of pool fires in ceiling vented compartments	3C01 9:05-9:30 Experimental study on suppression of n-heptane pool fire with water mist under longitudinal ventilation in long and narrow spaces
	Peng Mei, Guohui Li, Song Lu and Heping Zhang.	Man Yuan, Bing Chen, Changhai Li, Jiaqing Zhang and Shouxiang Lu.	Quanwei Li, Pin Zhang, Song Guo, Renming Pan, Jun Qin and Guangxuan Liao.
3A02 9:30-9:55	Time-scaling properties of high-casualty fires in China	3B02 9:30-9:55 Effects of cross air flow on mass loss rates of circular aviation fuel pool fires in large open space	3C02 9:30-9:55 Fire behavior and mist suppression of a room lined with glass reinforced polymer (GRP) panels
	Song Lu, Peng Mei, Guohui Li, Hui Yang and Heping Zhang.	Ping Jiang and Shouxiang Lu.	Greg Griffin, Qiang Xu, Christopher Preston, Glenn Bradbury and Nathan White.
3A03 9:55-10:20	Correspondence analysis: exploring the association between fire causes and influence factors	3B03 9:55-10:20 Influence of roof opening on gas temperature rise in an enclosure	3C03 9:55-10:20 Experimental study of water drop with additive impact on wood surfaces
		Qiang Li, Jiaqing Zhang and Shouxiang Lu.	Xianjia Huang, Pingping Chen, Meijuan
			Kaiyuan Lounge
			<i>Invited speech</i> Session Chair: Xi Jiang
			3D00 8:30-9:05 Spontaneous heating and fire in coal mines
			Ran Vijay Kumar Singh, <i>Central Institute of Mining &amp; Fuel Research, India</i>
			<b>Coal Fire</b> Session Chairs: Xi Jiang
			3D01 9:05-9:30 Optimization of ventilating energy distribution for controlling coal spontaneous combustion of sealed panel in underground coal mines
			Tao Yu, Ping Lu, Qingsong Wang and Jinhua Sun.
			3D02 9:30-9:55 Experimental study on the influence of initial pressure on explosion of methane-coal dust mixtures
			Yuan Li, Hongli Xu and Xishi Wang and Qiang Wang.
			3D03 9:55-10:20 Experimental study on characteristic parameters of coal spontaneous combustion
			Zhanti Mao, Hongya Zhu, Xuejuan Zhao,

	Guohui Li, Song Lu, Heping Zhang and Siuming Lo.		Lan, Xishi Wang and Guangxuan Liao.	Qingsong Wang and Jinhua Sun.
10:20-10:50	<i>Coffee break</i>			
	Longqing Lounge	Taichang Lounge	Yongle Lounge	Kaiyuan Lounge
10:50-12:30	<b>Evacuation Method</b> Session Chairs: Weiguo Song, Lijing Gao	<b>Fire Resistance/Fire Hindrance</b> Session Chairs: Lars Evers	<b>Optical Analysis of Smoke</b> Session Chairs: Yulianto Nugroho, Nai-Kong Fong	<b>Measurement and Testing</b> Session Chairs: Yi Wang, Dongliang Sun
3A04 10:50-11:15	Experimental study of the impact of personality traits on occupant exit choice during building evacuation Xin Zhan, Lizhong Yang, Kongjin Zhu, Xiaoming Kong, Ping Rao and Taolin Zhang.	3B04 10:50-11:15 The experimental study on combustion characteristics for polyurethane-aluminum composite insulation material under different heat flux Jun Xu and Tingyong Fang.	3C04 10:50-11:15 Scattering intensity of floor illuminance and surface luminance of smoldering smoke layer Yuki Akizuki, Naoya Hara, Kazunori Harada and Chunguang Lin.	3D04 10:50-11:15 Spectral study of the smoke optical density in non-flaming condition Julien Tissot, Martine Talbaut, Jerome Yon and Alexis Coppalle.
3A05 11:15-11:40	Reliability analysis of occupant safety evacuation in public assembly occupancies Zhanli Mao, Honglin Mu, Hahua Xiao, Jinhua Sun and Lijing Gao.	3B05 11:15-11:40 Thermal shock effect on the glass thermal stress response and crack propagation Qingsong Wang, Haodong Chen, Yu Wang and Jinhua Sun.	3C05 11:15-11:40 Prediction model for target luminance in fire smoke by taking into consideration the adhesion of smoke particles Yuki Akizuki and Takeyoshi Tanaka.	3D05 11:15-11:40 Analyzing the characteristics of unidirectional bicycle movement around a track based on digital image processing Xu Mai, Weiguo Song and Jiang Rui.
3A06 11:40-12:05	Experimental study of evacuation from a 4-storey building Tao Chen, Lili Pan, Hui Zhang, Satish Narayanan and Nicholas Soldner.	3B06 11:40-12:05 Simulating the thermal response of glass under various shading conditions in a fire Yu Wang, Qingsong Wang, Xuebao Fan and Jinhua Sun.	3C06 11:40-12:05 Investigation of the performance and improvement of optical smoke detectors Hing-Man To, Nai-Kong Fong.	3D06 11:40-12:05 Effects of moisture transfer and condensation in protective clothing based on thermal manikin experiment in fire environment Ming Fu, Wenguo Weng and Xuefeng Han.
3A07 12:05-12:30	No Presentation	3B07 12:05-12:30 The influence of K4[Fe(CN)6] aerosol on the flame speed of methane-air flame Oleg Korobeinichev, Andrey Smakov, Anatoly Chernov, Tatyana Bolshova, Yana Terenteva and Georgy Borisov.	3C07 12:05-12:30 Analysis of dust properties to solve the complex problem of non-fire sensitivity testing of optical smoke detectors Wolfgang Kruehl, Thorsten Schultze, Robert Tobera and Ingolf Willms.	3D07 12:05-12:30 The effect of flow approaching angle on the velocity measurement using bi-directional velocity probe Sung-Chan Kim and Jung-Yong Kim.
12:40-13:50	<b>Lunch</b> (Cafeteria of AGNC Hotel)			

14:00-16:00	<i>Visit Anhui Museum</i> , Tourist Bus Arranged (will depart from conference hall at 14:00)
16:00-18:00	<i>Visit Huaiyuan Park and/or Expo Anhui Pavilion</i> , Follow the visit to Anhui Museum; Tourist Bus Arranged (will depart from the gate of Anhui Museum at 16:00)
18:30-20:30	<i>Farewell Dinner</i>



## Author Listing

Philippe Ainé	1B06	Chew	Zihe Gao	1D02	Longhua Hu	1C04, 2B10,
Yuki Akizuki	3C04, 3C05	Shen-Wen Chien	Munko	2B04		2D09, 2D10
Jiangtao An	2B05	Wanki Chow	Gonchikzhapov		Weizhao Hu	2B03
Greg Baker	2A09	Ed Claridge	Greg Griffin	3C02	Xiaokang Hu	2B11
David Barber	1A04	Alexis Coppalle	Jingfu Guan	2C09, 1D09	Yuan Hu	2B01, 2B02,
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Liyang Cao	1B11	Chuan Gang Fan	Jianyun Han	1D02	Xianjia Huang	3C03
Bing Chen	1C09, 3B01	Xuebao Fan	Linhai Han	2A00	Xin Huang	1C01
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Falin Chen	1D00		Zhuyang Han	2A06	Kazuhiko Ido	1C05
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Peter Johnson	1A04			3A03	Loo		Ivanka Netinger	2A03
Seung-Goo Kang	2A01	Jian Li	2D11	2D11	Kaihua Lu	1C04, 2D10	Zhaopeng Ni	1C01
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Bong-Chan Kim	1C03, 2A01	Qiang Li	3B03	3B03		1C09, 1D10,	Nugroho	
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Dong-Jun Kim	2A01		3C01	3C01	Song Lu	3B03	Yoshifumi	1C05
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Sung-Chan Kim	3D07	Shaoping Li	1C07	1C07		3A03	Alexander	2B04
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Kiswanto		Yuan Li	3D02	3D02	Gao-Feng Ma	1A11	Lili Pan	3A06
Xiaoming Kong	3A04	Yuanzhou Li	2D11	2D11	Honghao Ma	2B09	Renming Pan	1B11, 3C01
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Wolfgang Krull	3C07		2D02, 3C01,	2D02, 3C01,	Majlingova		Preston	
Cuipeng Kuang	2D11	Ching-Yuan Lin	3C03	3C03	Samuel Manzello	2D00	Jun Qin	2C04, 3C01
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Sung-Chan Lee	1C11	Xuan Liu	1A03	1A03	Yonglin Min	1A01	Jifeng Ruan	2D03
Bo Lei	1D01	Xuanya Liu	1A06	1A06	Tensei Mizukami	2A02	Jiang Rui	3D05
Changhai Li	1B04, 1B05,	Yi Liu	1D11	1D11	Ana Mladenović	2A03	Marija Jelčić	2A03
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Guohui Li	3A01, 3A02,	Alvin Si-Xian	1B06	1B06	Satish Narayanan	3A06	Koyu Satoh	2D01

Thorsten	3C07			3D03	Jian Wang	2B11	Junfeng Xiao	2B01
Schultze		Martine Talbaut	3D04	Jingwu Wang	2D08	Xiaodong Xie	2D01	
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Armin Seyfried	2A05	Fei Tang	1C04, 2B10, 2D09, 2D10	Mingyu Wang	2D06	Hongli Xu	3D02	
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Zhaoxu Shen	2B09					Qiang Xu	1B09, 3C02	
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Wen Xi Shi	1A07	Gang Tao	1D05			Mashiro	1A12	
Andrey Shmakov	3B07	Yana Terenteva	3B07	Quan Wang	2B09	Yamazaki		
Lifu Shu	2D06	Xiaorui Tian	2D06	Shao Feng Wang	2B01	Hua Yang	1B10	
Irina Shundrina	2B04	James T'ien	1B00	Wei-Yong Wang	1A11	Hui Yang	3A02	
Ran Vijay Kumar Singh	3D00	Julien Tissot	3D04	Xishi Wang	3C03, 3D02	Lizhong Yang	1C02, 3A04	
Nicholas Soldner	3A06	Hing-Man To	3C06	Yi Wang	2B08	Bin Yao	1C12	
Lei Song	2B02, 2B03	Robert Tobera	3C07	Yu Wang	3B05, 3B06	Jiajie Yao	2D05	
Weiguo Song	1A00, 1A02, 1A03, 2A07, 1D02, 3D05	José Torero	1C00	Zhirong Wang	1D04	Wei Yao	1D11, 2B11	
Michael	1A08	Arnaud Trouve	2B08	Xiaoge Wei	1A02, 1A03	Xiaolin Yao	1C07	
Spearpoint		Susumu Tsuchino	1D06	Tao Weng	2D02	Jiusheng Yin	2B11	
Mike Spearpoint	2A09	Takashi Tsuruda	3C00	Wenguo Weng	2A06, 3D06	Jerome Yon	3D04	
Jamie	1A09	Ran Tu	2D08	Nathan White	3C02	Chunyu Yu	2C08	
Stern-Gottfried		Daniel Turhanlar	2A10	M. Rahmat	2B06	Hanyuan Yu	2D03	
Glenn Stone	2A10	Stephen Turner	1D06	Widyanto	3C07	Tao Yu	3D01	
Chung-Hwei Su	2C02	Asif Usmani	1A09	Ingolf Willms	1A10	Yanfei Yu	1A01	
Dongliang Sun	1D04	Patrick van Hees	3B00	Bernice V.Y. Wong	2C05	Man Yuan	1B04, 1C09, 3B01	
Jinhua Sun	1D02, 1D07, 3A05, 3B05, 3B06, 3D01,	Domingos Viegas	2D04	Binbin Wu	2C02	Wei Yuan	2C10	
		Colleen Wade	2A09	Chien-Wei Wu	2D05	Zhongyuan Yuan	1D01	
		Wei Wan	2D03	Jun Wu	2D05	Richard Yuen	1B04, 1B10, 2C06	
		Deyong Wang	2D02	Huahua Xiao	3A05	Martin Zachar	1B09	
		Grant Wang	1A04					
		Jia Wang	1B08					

Revaldo I.M. Zen	2B06	Jiaqing Zhang	1B04, 3B01,	Xia Zhang	2A08	Wei Zhong	2C06
Yi Zeng	2C10, 2D08		3B03	Xiaochun Zhang	1C04, 2B10,	Jianjun Zhou	1B12
Xin Zhan	3A04	Jun Zhang	2A05		2D09, 2D10	Kuibin Zhou	2D01
Cunfeng Zhang	2C03	Linhe Zhang	2D05	Xiaole Zhang	1D11	Xiaomeng Zhou	1B08
Dan Zhang	1D09, 2C09	Mingguang Zhang	1D04	Yongming Zhang	1D09, 2C09,	Hongya Zhu	1D07, 3D03
Heping Zhang	1B10, 2A11,				2C10, 2D08	Jiping Zhu	2D02, 2D05
	3A01, 3A02,	Pin Zhang	1B11, 3C01	Fengjun Zhao	2D06	Kongjin Zhu	3A04
	3A03	Qinglin Zhang	1A06	Weifeng Zhao	1C12	Shi Zhu	2D11
Hui Zhang	1D11, 2B11,	Taolin Zhang	3A04	Weitao Zhao	1B12	Ruowen Zong	1C12
	3A06	Xi Zhang	2C08	Xuejuan Zhao	3D03		

## Posters

- P01 Zaixia Fan, Rujing Zhu, Wei Li, Lars Evers and Hao Yu. Method to Optimize Fabricating Process and FR Properties of Fiber Reinforced Unsaturated Polyester Composites
- P02 Kuang-Chung Tsai and Wei-Ting Chung. Effect of Fire on Compressive Strength of Early Cured Mortars with Ground Granulated Blast Furnace Slag (GGBFS)
- P03 Damien Marquis, Gildas Auguin and Philippe Barabinot. Fire resistance of sandwich composite materials
- P04 Dongliang Sun, Guangtuan Huang, Juncheng Jiang, Mingguang Zhang and Zhirong Wang. Influence of the protective layer of polyvinylchloride resin on failure of LPG vessel caused by heat radiation
- P05 Munko Gonchikzhapov, Alexander Paletsky, Oleg Korobeinichev, Sergey Lomakin, Lyudmila Novokshonova, Petr Brevnov and Inna Shundrina. Comparison of the influence of phosphorus flame retardant and graphite nanoplastes on the thermal decomposition and flammability of polyethylene
- P06 Kuang-Chung Tsai and Wei-Ting Chung. Predicting the Post-Flashover Temperature in a Compartment Fire Using Adiabatic Gas Temperature
- P07 Muhammad A Santoso, Agus S Pamitran, Raldi A Koestoeer and Yulianto S Nugroho. Simulation of the Effect of Ventilation Rate and Platform's Ceiling Height on Visibility in a Typical Underground Metro Station's Fire
- P08 Bernice Wong, Mark Yau. Fire Strategy for Shanghai Expo 2010 UK Pavilion