The 10th Asia-Oceania Symposium on Fire Science and Technology (10th AOSFST) was held in Tsukuba, Japan, 5–7 October 2015. The symposium was jointly hosted by the Building Research Institute (BRI), the Japan Association for Fire Science and Engineering (JAFSE), and Tokyo University of Science (TUS), and was supported by the National Research Institute of Fire and Disaster (NRIFD), and the National Institute for Land and Infrastructure Management (NILIM). About 250 registrants attended three parallel sessions in which 94 peer-reviewed papers and 6 invited lectures were presented. Also, one poster session was held at the symposium in which 61 posters were displayed. Delegates from 15 countries and regions joined: Australia, Canada, China, France, Hong Kong, Indonesia, New Zealand, Japan, Russia, Singapore, Sweden, South Korea, Taiwan, the United Kingdom, and the United States of America. Papers and poster abstracts were accepted on the basis of their quality and originality in fire science and technology. The opening ceremony was conducted by representatives from the host organizations and AOAFAST/IAFSS: Professor Wan-Ki Chow, president of AOAFAST, presented the greetings, Professor Patrick van Hees, president of IAFSS, made remarks, and local organizers gave welcome speeches.

Following the opening ceremony, Professor Andrew Buchanan from the University of Canterbury delivered a plenary lecture entitled “Fire Resistance of Multi-story Timber Buildings”. Five other invited lectures were also presented during the symposium by Professors Hiroyuki Suzuki, Jinhua Sun, Yulianto Sulistyo Nugroho, Wan-Ki Chow, and Brian Meacham.

Prior to the banquet, the Hirano Memorial Session was held by Professors Ritsu Dobashi, Kazunori Kuwana, and Lijing Gao. Professors Wan-Ki Chow, Bogdan Dlugogorski, and Jinhua Sun conveyed their sympathies for the great loss of one of important founders of AOAFAST.

At the awards reception during the banquet, Professor Naian Liu, Chair of the Symposium Awards Committee, presented the Lifetime Contribution Award to three dedicated leaders in fire science and technology in Asia-Oceania district: Professors Wan-Ki Chow, Takeyoshi Tanaka, and Yuji Hasemi.

At the closing ceremony, Professor Naian Liu, Chair of the Symposium Awards Committee, presented four excellent paper awards, three excellent student paper awards, and four excellent poster awards. Professor Takeyoshi Tanaka delivered closing remarks as representative of the host country. The next AOSFST (11th AOSFST) was announced and Professor Kuang-Chung Tsai from National Kaohsiung First University of Science and Technology presented the potential date and place with appealing social events. In the final minutes, I, as the Chair of the Local Organizing Committee, conveyed my sincere thanks to all attendees in the symposium.

The Local Organizing Committee would like to thank the Building Research Institute (BRI), the Japan Association for Fire Science and Engineering (JAFSE), the Tokyo University of Science (TUS), the National Research Institute of Fire and Disaster (NRIFD), and the National Institute for Land and Infrastructure Management (NILIM) for being the supportive sponsors of the symposium. Also the committee would like to express its gratitude to all the organizations, advisory board and all committee members, and other volunteers who assisted
in making this symposium successful. A special thanks is given to Professor Kazunori Harada, Chair of the Program Committee, for organizing and leading the committee on the selection of papers and posters, and all of the Program Committee Members including track chairs/co-chairs who interacted with authors and reviewers as well as reviewing final manuscripts to ensure all reviewers’ comments were properly addressed. Many thanks should go to Professor Ken Matsuyama, Chair of the Publication Committee for his great effort in checking the format of the papers and posters presented in this volume. Sincere efforts by Professor Naian Liu and the Awards Committee were highly appreciated to successfully select the best candidates for awards. Finally, all dedicated support and help contributed by members of the Logistics Committee, chaired by Dr. Tomohiro Naruse, are gratefully acknowledged.

Chair, Local Organizing Committee, 10th AOSFST
Director, Department of Fire Engineering
Building Research Institute, Japan

Ichiro Hagiwara, Dr. Eng.
Preface

This proceedings of the 10th Asia-Oceania Symposium on Fire Science and Technology (10th AOSFST) held in Tsukuba, Japan, October 5–7, 2015, collects selected contents of presentations at the symposium. This symposium covered a very wide range topics in the fire research field, and the final edition of the proceedings includes about 100 topics.

The editors acknowledge all those involved, including authors, reviewers, and volunteers, to successfully complete the 10th AOSFST and to publish this proceedings. In addition, the editors would like to explain the review and selection process of papers and the selection process of posters in 10th AOSFST. Also, we would like to introduce and congratulate all award recipients.

Paper Submission and Selection Process

The papers were solicited and selected by a peer-review process. The first call for papers was issued in June 2014, followed by second call in September 2014. Papers were submitted during October and December 2014 in the regular submission period. During this time, 84 papers were submitted. In the extended period, up to 14 January 2015, 43 more papers were submitted.

All the submitted papers were allocated to 1 of 14 tracks, then subjected to review by multiple reviewers. Selection of papers was based on their quality, but priority was given to papers submitted during the regular submission period. In total, 96 papers were selected but two papers were withdrawn during the finalization process. As a result, 94 papers were selected for presentation at the symposium.

Selection of Posters

Poster presentations were also accepted at the symposium. The program committee received 64 poster abstracts. As poster presentations aim to exchange ideas on ongoing research, selection was mostly based on the clarity of the contents. Of the submissions, 61 posters were accepted for presentation. The poster abstracts are not included in this book, however.

Excellent Paper Award and Excellent Student Paper Awards

The award committee selected excellent papers and excellent student papers by voting. The recipients of excellent paper awards were:

- Heisuke Yamashita, Toru Yoshida, and Takeo Hirashima. Influence of Water Content on Total Strain of Super-high-strength Concrete Under Elevated Temperature (Japan Testing Center for Construction Materials)
• Yi-chul Shin, Yoshifumi Ohmiya, Shin-ichi Tsuburaya, Yuki Yoshida, Kazumasa Tashima, and Jun-ichi Suzuki. Study on Fire Plume Behavior in Vertical Shafts of Buildings (Tokyo University of Science)

• Tatyana Bolshova, Sergey Yakush, Vladimir Shvartsberg, Andrey Shmakov, Oleg Korobeinichev, and Anatoly Chernov. Development and Validation of Skeletal Mechanism for Flame Inhibition by Trimethylphosphate (Institute of Chemical Kinetics and Combustion, Russia)

• Charles Fleischmann. Defining the Heat Release Rate per Unit Area for Use in Fire Safety Engineering Analysis (University of Canterbury, NZ)

The recipients of excellent student paper awards were:

• Wei Gao, Naian Liu, Xieshang Yuan, Yueling Bai, Linhe Zhang, and Koyu Satoh. Neutral Plane and Length Scale of Spill Fire Plume Considering the Effects of Cross-Ventilation (SKLFS, USTC, China)

• Toichiro Okawa, Wataru Ebina, Hiroyoshi Naito, and Akira Yoshida. Inhibition of Propane/Air Premixed Flame by Water Mist, (Tokyo Denki University)

• Fietrysia Leonita, Harfan Sakti, and Yulianto Sulistyo Nugroho. Study of the Overall Movement Speed on Medium and High-Rise Buildings in Indonesia (Universitas Indonesia)

Excellent Poster Awards

Excellent poster awards were decided in terms of the on-site performance of the poster presentations. Ballots were collected from all participants during the Poster Session. Final decisions were made by the ballots for each poster. The recipients were:

• Supan Wang, Xinyan Huang, Haixiang Chen, Naian Liu, and Guillermo Rein. Expandable Polystyrene Foam Spot Fire Ignition by Hot Metal Particle (SKLFS, USTC, China)

• Ken Mizutani, Kyosuke Miyamoto, Nozomu Hashimoto, and Osamu Fujita. Comparison of Limiting Oxygen Concentrations of Spreading Flame over Different Electric Wire Insulations in Microgravity (Hokkaido University, Japan)

• Cheng-Chun Lin and Liangzhu (Leon) Wang. Real-Time Forecasting of Building Fires Using Data Assimilation (Concordia University, Canada)

• Ping Ping, Qingsong Wang and Jinhua Sun. Study of the Fire Behavior of High-Energy Lithium-Ion Batteries with Full-Scale Burning Test (SKLFS, USTC, China)

Lifetime Contribution Awards

To recognize their lifetime contribution to fire science and technology, the following three leaders were given awards:

• Professor Wan-Ki Chow, Polytechnic University of Hong Kong

• Professor Emeritus Takeyoshi Tanaka, Kyoto University

• Professor Yuji Hasemi, Waseda University

Finally, the editors acknowledge the support of many organizations and committees to accomplish the success of 10th AOSFST.
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Also, during the review and selection process, immeasurable time was spent by track chairs and reviewers. The editors would like to thank all the chairs and reviewers for their time and expert service. English mentors were allocated to some of the papers to help non-native English authors. The Chairman of the International Association for Fire Safety Science, IAFSS, supported the process of English mentoring by nominating volunteers. Special thanks go to the following:

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Sincerely yours,

Editors
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