

# Program for the 2016 ISSST

## Overview of the program

<b>Date</b> <b>Time</b>	<b>October 18</b>	<b>October 19</b>			
<b>7:00</b>	<b>Breakfast</b>	<b>Breakfast</b>			
<b>8:30-12:00</b>	<b>Opening Ceremony Group photo session (9:00)</b>	<b>Session A1</b>	<b>Session B1</b>	<b>Session C1</b>	<b>Session D</b>
	<b>Invited plenary presentation 1</b>	<b>Session A2</b>	<b>Session B2</b>	<b>Session C2</b>	
<b>12:00-13:30</b>	<b>Lunch</b>	<b>Lunch</b>			
<b>13:30-18:30</b>	<b>Invited plenary presentation 2</b>	<b>Session A3</b>	<b>Session B3</b>	<b>Session C3</b>	
	<b>Poster session(15:15-15:40) Invited plenary presentation 3</b>	<b>Session A4</b>	<b>Session B4</b>	<b>Session C4</b>	
	<b>Supper (18:00)</b>	<b>Closing Ceremony and Banquet (19:00)</b>			

- Accommodations are arranged at the Wenhui Hotel (文汇酒店).
- On-site registration will be held in the lobby of the Wenhui Hotel 13:00–22:00 on October 17.
- Venue for Breakfast, Lunch, Supper, Banquet: Banquet Hall(宴会厅), the 2<sup>nd</sup> floor, Wenhui Hotel.
- Venue for opening ceremony and invited papers presentation: Auditorium (演讲厅), 2<sup>nd</sup> floor, C. C. Wu Hall (伍集成会堂).
- Venue for session A: Room 301, 3<sup>rd</sup> floor, C. C. Wu Hall (伍集成会堂).
- Venue for session B: Room 302, 3<sup>rd</sup> floor, C. C. Wu Hall (伍集成会堂).
- Venue for session C: Room 303, 3<sup>rd</sup> floor, C. C. Wu Hall (伍集成会堂).
- Venue for session D: Room 401, 4<sup>th</sup> floor, C. C. Wu Hall (伍集成会堂).
- Group photos and participants list will be distributed before the end of the symposium.
- The badges of volunteers are in orange color.
- Page number of each paper/extended abstract is marked after the title of presentation.

## **October 18**

### **7:00 Breakfast**

### **8:30-9:00 Opening Ceremony**

**Venue: Auditorium (演讲厅), 2<sup>nd</sup> floor, C. C. Wu Hall (伍集成会堂)**

**Chair: Prof. WANG Cheng (China)**

### **9:00-9:30 Group photo session & Coffee break**

### **Invited Plenary Presentation 1**

**Chair: Prof. Piotr WOLAŃSKI (Poland)**

**Prof. LIU Dabin(China)**

**9:30-10:05** West Fertilizer Company Fire and Explosion: A Summary of the U.S. Chemical Safety and Hazard Investigation Board Report (609)

*Prof. Ronald J. WILLEY (USA)*

**10:05-10:40** Numerical Investigation on DDT in Industrial Explosion

*Prof. WANG Cheng (China)*

**10:40-11:15** On Recent Developments of Chemical Kinetics and Fire Field Model for Typical Furniture Materials(294)

*Prof. Richard Kwok Kit YUEN(Hong Kong of China)*

**11:15-11:50** Technical Analysis for Tianjin 812 Accident

*Prof. QIAN Xinming(China)*

### **12:00 Lunch**

### **Invited Plenary Presentation 2**

**Chair: Prof. FENG Changgen (China)**

**Prof. Ronald J. WILLEY (USA)**

**13:30-14:05** Safety of Atmospheric Industrial Tanks: Fragility Curves, Resilience and Sensitivity Analysis

*Prof. Ahmed MÉBARKI (France)*

**14:05-14:40** Engineering Aspects of the Preparation for Managing Accidental H<sub>2</sub>S Releases at a Process Site(223)

*Dr. Jan WINDHORST (Canada)*

**14:40-15:15** Fire Modelling Using Fire FOAM (292)

*Prof. Jennifer WEN (UK)*

**15:15-15:40 Coffee Break and poster presentation (Poster setup will be held at coffee break place )**

A Study of MESG of Ternary Flammable Gas Mixture (383)

*Junghwan BYEON*

Airflow Patterns of a Large Factory with Sided Natural Smoke Extraction System Using Scale Model Experiments (315)

*ChungHwei SU*

Hazard Analysis of Flood for Psychiatric Rehabilitation Institutions and Psychiatric Nursing Houses by Site Survey in Taiwan (231)

*ChungHwei SU*

Efficiency of Five Different Extinguishers on Trichlorosilane Fires

*Kuang-Yu LIAO*

**Invited Plenary Presentation 3**

**Chair: Prof. JING Guoxun (China)**

**Prof. Jennifer WEN (UK)**

**15:40-16:15** Passive and Active Ways of Explosion Suppression in Tubes and Galleries (392)

*Prof. Piotr WOLAŃSKI (Poland)*

**16:15-16:50** Realization of Virtual Device Network Using Internet of Things for Monitoring and Control of Indoor Air Quality(IAQ) in Subway Station (637)

*Prof. Gi Heung CHOI (Korea)*

**16:50-17:25** Flammability of Gases in Focus of European and US Standards (400)

*Dr. Maria MOLNARNE (Germany)*

**17:25-18:00** Airtight Explosion, Explosion Suppression, Explosion Venting in Interconnected Vessels

*Prof. WANG Zhirong (China)*

**18:00 Supper**

## October 19

### 7:00 Breakfast

<p><b>Session A-1 Theories and Methods of Safety Science</b></p> <p><b>Venue: Room 301, the 3<sup>rd</sup> floor, C. C. Wu Hall</b></p> <p><b>Chair: Prof. Rosa NOMEN (Spain)</b></p> <p><b>Prof. Wieslaw TARELKO (Poland)</b></p>	<p><b>Session B-1 Special Session on “Fire and Explosion Analysis for Prevention and Control” (1)</b></p> <p><b>Venue: Room 302, the 3<sup>rd</sup> floor, C. C. Wu Hall</b></p> <p><b>Chair: Prof. Jennifer WEN (UK)</b></p> <p><b>Prof. WANG Changjian(China)</b></p>	<p><b>Session C-1 Thermal Safety Analysis(1)</b></p> <p><b>Venue: Room 303, the 3<sup>rd</sup> floor, C. C. Wu Hall</b></p> <p><b>Chair: Dr. Jan WINDHORST (Canada)</b></p> <p><b>Prof. Horng-Jang LIAW (Taiwan of China)</b></p>
<p><b>8:30-9:00 Invited presentation</b> Research on the Establishment of Psychic Trauma Assessment Science (1) <i>WU Chao</i></p> <p><b>9:00-9:20 Similarity Safety Systematics Theory (3)</b> <i>JIA Nan</i></p> <p><b>9:20-9:40 Study of Human Safety Idea Connotations(5)</b> <i>OUYANG Qiumei</i></p> <p><b>9:40-10:00 Methodology of Theoretical Modelling in Safety Systems (7)</b> <i>HUANG Lang</i></p>	<p><b>8:30-9:00 Invited presentation</b> Investigations on the Smoke Movement and Flame Behavior in High-Rise Building Fires (302) <i>JI Jie</i></p> <p><b>9:00-9:30 Invited presentation</b> Experimental and Numerical Study of Human Thermal Physiological Responses from Fire(299) <i>WENG Wenguo</i></p> <p><b>9:30-10:00 Invited presentation</b> Large Eddy Simulation of Upward Flame Spread on PMMA Wall Based on a Fully Fluid-solid Coupled Approach (296) <i>Kazui FUKUMOTO</i></p>	<p><b>8:30-8:50 Quantitative Structure-Property Relationship Studies for Predicting the Gas-liquid Critical Temperature Based on Support Vector Machines (489)</b> <i>ZHOU Lulu</i></p> <p><b>8:50-9:10 A Novel Model for Predicting Lower Flammability Limits Using Quantitative Structure Activity Relationship Approach (419)</b> <i>Yueh-Chun GUO</i></p> <p><b>9:10-9:30 Flammability Characteristics of Ionic Liquid 1-Decyl-3-methylimidazolium Bis(trifluoromethylsulfonyl)imide (426)</b> <i>You-Nan CHEN</i></p> <p><b>9:30-9:50 Study of the Cause for the Variation of Flash Point After the Ionic Liquids Being Heated (436)</b> <i>Yu-Fang LIN</i></p> <p><b>9:50-10:10 Coal Transfer Facility Fire at Taichung Power Plant—a Case Study (688)</b> <i>Yi-Feng CHEN</i></p>

### 10:00-10:20 Coffee Break

<p><b>Session A-2 Safety Assessment and Risk Analysis</b></p> <p><b>Venue: Room 301, the 3<sup>rd</sup> floor, C. C. Wu Hall</b></p> <p><b>Chair: Prof. WU Chao (China)</b></p> <p><b>Prof. Ahmed MÉBARKI (France)</b></p>	<p><b>Session B-2 Special Session on “Fire and Explosion Analysis for Prevention and Control” (2)</b></p> <p><b>Venue: Room 302, the 3<sup>rd</sup> floor, C. C. Wu Hall</b></p> <p><b>Chair: Prof. WANG Bing (China)</b></p> <p><b>Dr. Jianping ZHANG (UK)</b></p>	<p><b>Session C-2 Thermal Safety Analysis(2)</b></p> <p><b>Venue: Room 303, the 3<sup>rd</sup> floor, C. C. Wu Hall</b></p> <p><b>Chair: Prof. Chan-Cheng CHEN (Taiwan of China)</b></p> <p><b>Dr. Maria MOLNARNE (Germany)</b></p>
<p><b>10:20-10:40</b> Case Study of Stray Current Corrosion of Tall Ship Mast (643) <i>Wieslaw TARELKO</i></p> <p><b>10:40-11:00</b> Failure Rate Prediction Method Based on BP Neural Network and Two-Parameter Weibull Distribution—A Case Study of Liquid Chlorine Storage System (25) <i>LI Chenyang</i></p> <p><b>11:00-11:20</b> Overview and Analysis of Safety Risk Studies (76) <i>ZHANG Shu</i></p> <p><b>11:20-11:40</b> An Integrated Self-Assessment Module of Fire Rescue Safety in a Chemical Plant— a Case Study (89) <i>Shih-Fang TSAI</i></p> <p><b>11:40-12:00</b> Safety Analysis of Lithium-ion Battery Based on Fault Tree Method (103) <i>QI Chuang</i></p>	<p><b>10:20-10:50 Invited presentation</b> Performance-based Fire Safety Design for Long Road Tunnels (295) <i>Kuang-Chung TSAI</i></p> <p><b>10:50-11:20 Invited presentation</b> Experimental Study of the Boilover Fire under Cross Wind (303) <i>KONG Depeng</i></p> <p><b>11:20-11:50 Invited presentation</b> Hydrogen Mitigation Experiment with HYMIT Facility (395) <i>HU Po</i></p> <p><b>11:50-12:10</b> Validating the Current Fire Resistance Test for Over-sized Rolling Fire Shutter Door (394) <i>Wei-Ting CHUNG</i></p>	<p><b>10:20-10:40</b> Simulation of Coal Dust Deposits Self-Ignition in Oxy-Fuel Atmospheres (503) <i>Dejian WU</i></p> <p><b>10:40-11:00</b> Effects of Changing Ambient Temperature on Thermal Decomposition Reaction of Red Pyrotechnic Composition (481) <i>PAN Yu</i></p> <p><b>11:00-11:20</b> An Insight into Effects of Pore Diffusion on Kinetics of Coal Smoldering Fire Using A 4-step Chemical Reaction Model(466) <i>SONG Zeyang</i></p> <p><b>11:20-11:40</b> Experimental Study of Instability in a Lean Premixed Swirler-Stablized Dump Combustor (698) <i>ZHAO Xiaomin</i></p> <p><b>11:40-12:00</b> Analysis of Tianjin Port Fire and Explosion (617) <i>WANG Jianhao</i></p>

**12:10 Lunch**

<p><b>Session A-3 Safety Management</b></p> <p><b>Venue: Room 301, the 3<sup>rd</sup> floor, C. C. Wu Hall</b></p> <p><b>Chair: Prof. Gi Heung CHOI (Korea)</b> <b>Assoc. Prof. QING Li (China)</b></p>	<p><b>Session B-3 Special Session on “Fire and Explosion Analysis for Prevention and Control” (3)</b></p> <p><b>Venue: Room 302, the 3<sup>rd</sup> floor, C. C. Wu Hall</b></p> <p><b>Chair: Prof. Kuang-Chung TSAI (Taiwan of China)</b> <b>Prof. WENG Wenguo (China)</b></p>	<p><b>Session C-3 Prevention of Fire and Explosion</b></p> <p><b>Venue: Room 303, the 3<sup>rd</sup> floor, C. C. Wu Hall</b></p> <p><b>Chair: Prof. Ronald J. WILLEY (USA)</b> <b>Prof. WANG Zhirong (China)</b></p>
<p><b>13:30-13:50</b> Chinese PSM Core Elements and Corresponding Measures (128) FAN Lingpeng</p> <p><b>13:50-14:10</b> Application Technology of Big Data in Safety Production and its Prospect Analysis (134) ZHANG Hui</p> <p><b>14:10-14:30</b> Accident Analysis Method Based on Event Causality Diagram and “Three Elements” Safety Management System (144) ZHAO Yatong</p> <p><b>14:30-14:50</b> Risk Information Coding Manual for Integrated Product Accident Databases in Japan (162) Kun ZHANG</p> <p><b>14:50-15:10</b> Development of an Integrated Hazard Vocabulary Set for Toy Recall Text Mining (172) Jingsheng LIU</p> <p><b>15:10-15:30</b> Construction of Emergency Rescue and Protection System for Accident in Chemical Industry Park(252) KANG Jian</p>	<p><b>13:30-14:00 Invited presentation</b> Auto-ignition/Extinction and Combustion Modes in Shear Reactive Flows (597) WANG Bing</p> <p><b>14:00-14:30 Invited presentation</b> Characterization of Flammability and Fire Resistance of Carbon Nanofiber Reinforced Thermoset and Thermoplastic Composite Materials (410) Jianping ZHANG</p> <p><b>14:30-15:00 Invited presentation</b> Experimental Study of Spray Deflagration Mode in an Enclosed Compartment (566) WANG Changjian</p> <p><b>15:00-15:30 Invited presentation</b> Investigation of Gas Explosion Pattern in an Underground Mine Gob and Overlying Strata Using Physical Simulation Approach (554) CHENG Jianwei</p>	<p><b>13:30-13:50</b> Dust Explosion Propagation and Isolation (393) Jérôme TAVEAU</p> <p><b>13:50-14:10</b> Study on the Effects of Activation Time on Window Glass Protection with Water Mist Curtain under a Fire Scenario (366) TAN Qiong</p> <p><b>14:10-14:30</b> Study of Vent Area on Premixed Gas Explosion Venting in Linked Vessels (373) JIANG Fengwei</p> <p><b>14:30-14:50</b> Characteristic Analysis of Low-energy Arc Ignition at Different Oxygen Concentrations (378) LI Jie</p> <p><b>14:50-15:10</b> Influential Factors of Gas Explosion Venting in Linked Vessels (351) CUI Yangyang</p> <p><b>15:10-15:30</b> Studies on Dynamic Response and Damage Mechanism of Composite Blast Resistant Wall under Blast Loads (398) WANG Runan</p>

**15:30-15:50 Coffee Break**

<b>Session A-4 Safety Monitoring and Supervision</b> <b>Venue: Room 301, the 3<sup>rd</sup> floor, C. C. Wu Hall</b> <b>Chair: Prof. QIAN Xinming (China)</b> <b>Dr. Wolfgang KRÜLL(Germany)</b>	<b>Session B-4 Gas and Dust Explosion</b> <b>Venue: Room 302, the 3<sup>rd</sup> floor, C. C. Wu Hall</b> <b>Chair: Assoc. Prof. CHENG Jianwei (China)</b> <b>Dr. Kazui FUKUMOTO (UK)</b>	<b>Session C-4 Fire Safety</b> <b>Venue: Room 303, the 3<sup>rd</sup> floor, C. C. Wu Hall</b> <b>Chair: Mr. J &amp; ôme TAVEAU(USA)</b> <b>Dr. ChungHwei SU (Taiwan of China)</b>
<p><b>15:50-16:10</b> Overview of Innovative Test Devices for Non-Fire Sensitivity Testing of Optical Smoke Detectors (192) <i>Wolfgang KRÜLL</i></p> <p><b>16:10-16:30</b> The Impact of Aging on the Response Threshold Value of Smoke Alarms in Office Environments (203) <i>Wolfgang KRÜLL</i></p> <p><b>16:30-16:50</b> Measurement of the Neutral Plane for an Unilateral Opening Space in Schlieren Photography Technique (208) <i>ShiuanCheng WANG</i></p> <p><b>16:50-17:10</b> The Optimization of Gas Leak Monitor Points Distribution in the Underground (221) <i>HOU Longfei</i></p> <p><b>17:10-17:30</b> Analysis of Arc Discharge Characteristics of Low-voltage AC Fault Arc (738) <i>LI Tan</i></p> <p><b>17:30-17:50</b> Bionic Stab Resistance Body Armor Manufactured Using 3D Printing Technology (764) <i>YUAN Mengqi</i></p> <p><b>17:50-18:10</b> Study on Integrated Desensitization of Fuel-rich Metallized Explosives (761) <i>TANG Ying</i></p> <p><b>18:10-18:30</b> Calculation of Sedimentation Potential in Oil Tanks after Filling Operation (680) <i>WANG Liangwang</i></p>	<p><b>15:50-16:10</b> Numerical Simulation on Structure Effects of Gas Explosions in Vessels (608) <i>YAN Chen</i></p> <p><b>16:10-16:30</b> Numerical Study on Hydrogen Explosion due to Leakage from a Car inside a Garage (544) <i>HUO Yan</i></p> <p><b>16:30-16:50</b> Numerical Simulation of Dense Maize Starch-Dust Explosions in Open Air (588) <i>LEI Peng</i></p> <p><b>16:50-17:10</b> Propagation Mechanism of Detonation in Rough Walled Tube (600) <i>LI Jian</i></p> <p><b>17:10-17:30</b> Numerical Simulation Analysis of Explosion Process and Destructive Effect for Gas Explosion Happened in Buildings (606) <i>WANG Dan</i></p> <p><b>17:30-17:50</b> Numerical Simulation of "4.10" Natural Gas Explosion Accident in Honglian South Community of Haidian District (607) <i>JI Tingchao</i></p> <p><b>17:50-18:10</b> Investigation on the Approach of Intercepting Fragments Generated by Vessel Explosion Using Barrier Net (626) <i>SUN Dongliang</i></p> <p><b>18:10-18:30</b> Numerical Simulation of the Formation of Shock Induced Particle Jets Using the Discrete Element Method(703) <i>XUE Kun</i></p>	<p><b>15:50-16:10</b> Small-scale Fire Experiments and Simulation of Tunnel with Vertical Shafts (255) <i>CHEN Xi</i></p> <p><b>16:10-16:30</b> Ignition Characteristics and Potential Fire Hazard Assessment of Typical Liquid Oils in Wind Turbine Nacelle (263) <i>LI Ping</i></p> <p><b>16:30-16:50</b> Effect of Temperature and Ventilation on the Emission of Toxic Gas in Polymer-fire Effluent (269) <i>HU Yanghui</i></p> <p><b>16:50-17:10</b> Experimental Study on Burning and Swelling Behaviors of Flame Retardant Cables in a Cylindrical Heating Chamber(276) <i>GONG Tai</i></p> <p><b>17:10-17:30</b> An Experimental Investigation of Flame Length of Alcohol and N-heptane Pool Fires under Air Cross Condition (322) <i>TAO Changfa</i></p> <p><b>17:30-17:50</b> Study on the Influence of Design of Lateral Smoke Vent on Smoke Control in Double Deck Tunnel (342) <i>YANG Juan</i></p> <p><b>17:50-18:10</b> Study on Fire Safety Characteristics in Extra-long Railway Tunnel Rescue Station (344) <i>YOU Wenjiao</i></p> <p><b>18:10-18:30</b> Temperature Characteristics and Impact Factors of RC Columns in Metro Stations under Fire Environment (672) <i>LIAN Suqian</i></p>

**19:00 Closing Ceremony and Banquet**

**October 19**

**Session D**

**Venue: Room 401, the 4<sup>th</sup> floor, C. C. Wu Hall**

**Chair: Assoc. Prof. YOU Fei (China)**

**Assoc. Prof. ZONG Ruowen (China)**

**8:30-8:50** Numerical Simulation Research on Hybrid Smoke Extraction Model for Underground Rail Transit Depot (339)

*WANG Zhilei*

**8:50-9:10** Research on Electromagnetic Environment Adaptability of Miniature Detonator (734)

*XIE Ruizhen*

**9:10-9:30** Effect of Ferric and Cupric Ion on Thermally Incompatible Risk of Aqueous Tert-butyl Hydroperoxide (498)

*ZHANG Wenxing*

**9:30-9:50** Study of Optimal Layout Based on PRA: Case in a Crude Oil Tank Farm(664)

*DOU Zhan*

**9:50-10:10** Research on the Shortest Path Applied in the Emergency Rescue of the Hazardous Chemicals Leakage Accident(183)

*YU Qian*