

7th International Symposium on Fire-Retardant Materials & Technologies

March 17 - 19, 2023. Beijing, China

www.isfrmt.org



The Final Call of ISFRMT 2022

The 7th International Symposium on Fire-Retardant Materials & Technologies (ISFRMT 2022) will be held in Beijing, China on March 17 - 19, 2023!

With the rapid development of society and industry, fire safety has received extensive attention of the government, industry and society in general. Fire-retardant materials are more and more widely used in construction, automobile, electrics and electronics, aerospace, rail transportation, vessels and watercrafts for national economic and social fields. The fire retardancy performances, smoke toxicity and environmental impact have been further put forward higher request. At the same time, the booming development of cutting-edge technologies such as new energy, 5G communications, low carbon and big data has also brought new opportunities and challenges to the fire retardancy field. Over the past 20 years, China's standard systems of fire-retardant materials have gradually been in line with international ones. China has become a large country for production and consumption of fire retardant products with rapid development of the industry, and Chinese scholars have made a series of innovative achievements in the field of fire retardant theory and technology. Since 2010, ISFRMT international Conference has been successfully held in Chengdu, Hefei, Changchun, Hangzhou and Qingdao six times. It has promoted active exchanges between Chinese and foreign industry, academia and industry associations in the field of fire retardancy, accelerated the scientific and technological progress and industrial application of fire-retardant materials, and made important contributions to solve fire safety problems, becoming one of the most influential international conferences in the global fire retardant field.

At present, the global COVID-19 pandemic and the rising price of chemicals have impacted the industries involved with fire retardants and fire retarded materials, and adversely affected international academic exchanges in the field. Hence, it is time to hold another ISFRMT International Conference.

The 7th ISFRMT will be hosted by Beijing Institute of Technology in Beijing, China in 2022. The symposium themes include New fire retardant design, Bio-based/green fire retardancy, Fire-retardant polymeric materials and composites, Smoke, toxicity & environment impact, Standardization, regulation & assessment on fire retardancy, Fire retardant mechanisms and new concepts, Combustion behaviors, modelling and prediction, Fire safety in new energy field, Sustainable development and recycling of fire-retardant materials.

Looking forward to seeing the experts and scholars from industry, academia, industry associations, testing laboratories and management departments in the field of fire retardancy in Beijing or online, during ISFRMT 2022.

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Topics

- ◇ New fire retardant design
- ◇ Fire-retardant polymeric materials
- ◇ Smoke, toxicity and environment impact
- ◇ Standardization, regulation and assessment on fire retardancy
- ◇ Fire safety in new energy field
- ◇ Bio-based/green fire retardancy
- ◇ Fire-retardant composites
- ◇ Fire retardant mechanisms and new concepts
- ◇ Combustion behaviors, simulation and prediction
- ◇ Sustainable development and recycling of fire-retardant materials

Adviser and Organizers

Advised by

Chemical, Metallurgical and Materials Engineering Division, Chinese Academy of Engineering

Organized by

Beijing Institute of Technology

China Flame Retardant Society

Sichuan University

Co-organized by

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Prof. Yu-Zhong Wang, Academician of the Chinese Academy of Engineering, Sichuan University

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Conference Venue

Beijing Friendship Hotel

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International Scientific Committee (In alphabetical order of last name)

Name	Affiliation
Jenny Alongi	Università degli Studi Di Milano, Italy
Günter Beyer	Fire and Polymer, Belgium
Serge Bourbigot	ENSCL, France
Debes Bhattacharyya	University of Auckland, New Zealand
Giovanni Camino	Politecnico di Torino, Italy
Federico Carosio	Politecnico di Torino, Italy
Manfred Döring	Fraunhofer LBF, Germany
Sophie Duquesne	ENSCL, France
Bin Fei	Hong Kong Polytechnic University
Gaëlle Fontaine	University of Lille, France
Sabyasachi Gaan	EMPA, Switzerland
Jaime Grunlan	Texas A&M University, USA
Laia Haurie	Polytechnic University of Catalonia, Spain
Yuan Hu	University of Science and Technology of China, China
T. Richard Hull	University of Central Lancashire, UK
Baljinder Kandola	University of Bolton, UK
Jinhwan Kim	Sungkyunkwan University, South Korea
Oleg Korobeinichev	ICKC, Russia
Sergei V. Levchik	ICL-IP, Ardsley, USA
José-Marie Lopez-Cuesta	Ecole des Mines d'Alès, France
György Marosi	Budapest University of Technology and Economics, Hungary
Alexander B. Morgan	University of Dayton Research Institute, USA
Adrian Mouritz	RMIT University, Australia
Takafumi Noguchi	University of Tokyo, Japan
Masayuki Okoshi	Society of Flame Retardant Materials, Japan
Rudolf Pfaendner	Fraunhofer LBF, Germany
Doris Pospiech	Leibniz-Institut für Polymerforschung Dresden, Germany
Miriam Rafailovich	Stony Brook University (SUNY), USA
Berhard Schartel	BAM, Berlin, Germany
Kelvin K. Shen	FR Consultant, USA
Stanislav Stoliarov	University of Maryland, USA
Jürgen Troitzsch	Fire and Environment Protection Service, Germany
De-Yi Wang	IMDEA Materials Institute, Spain
Yu-Zhong Wang	Sichuan University, China
Hao Wang	University of Southern Queensland, Australia
Carl-Eric Wilen	Åbo Akademi University, Finland
Charles A. Wilkie	Marquette University, USA
Charles Yang	University of Georgia, USA
Rongjie Yang	Beijing Institute of Technology, China
Guan Heng Yeoh	University of New South Wales, Australia
Mauro Zammarano	NIST, Gaithersburg, USA

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Local Organizing Committee (In alphabetical order of last name)

Name	Affiliation
Kun Cao	Zhejiang University
Lizong Dai	Xiamen University
Jianhua Dong	National Natural Science Foundation of China
Zheng-Ping Fang	NingboTech University
Changjun Fu	Shanghai Antu Masterbatch Co.Ltd
Jianwei Hao	Beijing Institute of Technology
Yuan Hu	University of Science and Technology of China
Xianbo Huang	Kingfa Sci. and Tech. Co., Ltd
Pingkai Jiang	Shanghai Jiao Tong University
Bin Li	Northeast Forestry University
Jianjun Li	National Key Laboratory for Efficient Waste Plastic Development and High-quality Utilization, Kingfa Sci. and Tech. Co., Ltd
Jianjun Ma	Wuhan Second Ship Design and Research Institute
Jin Ma	National Natural Science Foundation of China
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Kang Shen	Beijing ADD-Tech Co., Ltd
Tao Tang	Changchun Institute of Applied Chemistry, CAS
Rui Wang	Beijing Institute Of Fashion Technology
Xu Wang	Zhejiang University of Technology
Yu-Zhong Wang	Sichuan University
Zhengzhou Wang	Tongji University
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Yunfeng Zhao	Aerospace Research Institute of Material & Processing Technology
Zhengmao Zhou	Beijing Institute of Technology
Jin Zhu	Ningbo Institute of industrial technology, CAS
Ping Zhu	Qingdao University

Youth Committee (In alphabetical order of last name)

Name	Affiliation
Li Chen	Sichuan University
Weizhao Hu	University of Science and Technology of China
Juan Li	NingboTech University
Jie Liu	Changchun Institute of Applied Chemistry, CAS
Yun Liu	Qingdao University
Ye-Tang Pan	Beijing Institute of Technology
Yong Qiu	Beijing Technology and Business University
Hongqiang Qu	Hebei University
Pingan Song	University of Southern Queensland, Australia
Jun Sun	Beijing University of Chemical Technology
Miaojun Xu	Northeast Forestry University
Yingjun Xu	Qingdao University
Anthony Yuen	University of New South Wales
Wenchao Zhang	Beijing Institute of Technology
Haibo Zhao	Sichuan University

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Invited Lectures (In alphabetical order of last name)

Name	Lecture Topic
Charles A. Wilkie	Opening speech
Serge Bourbigot	Fire barriers: evaluation, characterization and modeling
Giovanni Camino	Basic aspects in fire retardancy: past achievements and future perspectives
Kun Cao	Some thoughts on transparent intumescent flame retardant coatings
Federico Carosio	New green water-based approaches to FR materials
Lizong Dai	Design principles of organic-inorganic hybrid functional particle flame-retardants
Manfred Döring	Biobased Polymeric Flame Retardants with Different Phosphorus Groups and their Application in PLA
Sophie Duquesne	Development of FR HIPS formulation from WEEE
Bin Fei	Advancement in boron-based flame retardants
Gaëlle Fontaine	Aluminosilicates coatings for fire protection
Alberto Frache	Char formation in polyethylenes: effect of macromolecular architecture
Changjun Fu	The development in various flame retardant nylon polymers and the applications
Sabyasachi Gaan	Flame retardation of partially aromatic polyamides with bis-phosphine oxides
Jaime Grunlan	Water-based polyelectrolyte surface treatments for wood, textiles, and foam
Laia Haurie	Strategies to improve the fire behaviour of lignocellulosic materials
Yuan Hu	Fire safety design and application of polyurethane
Maude Jimenez	Biobased flame retardant self stratifying coatings
Baljinder Kandola	Natural fibre composites: effect of flame retardants on fibre-matrix adhesion
Oleg Korobeinichev	Development and study of fire-resistant epoxy composites reinforced with fiberglass
Sergei V. Levchik	Flame retardants and their daily uses in modern life: myths and reality
José-Marie Lopez-Cuesta'	3D printing of fire-retardant biopolymers, application to PLA and PLA/PA11 blends
Masayuki Okoshi	Flame-retardant technology in future-high functionality and circular economy-society of flame-retardant material
Bin Li	The new approach to halogen-free flame retardant polyamide materials
Jianjun Li	High quality recycling and utilization of waste flame retardant plastics
Jianjun Ma	Application status and prospect analysis of composite materials and non-metallic materials for ships
Masayuki Okoshi	Flame-retardant technology in future - high functionality and circular economy – society of flame-retardant material
Rudolf Pfaendner	Oxyimide radical generators – efficient synergists for flame retardant systems
Lijun Qian	From group aggregation to block copolymerization: Specific structure organization style enhanced material's properties
Miriam Rafailovich	Biopolymer flame retardants
Kelvin K. Shen	The effect of boron compounds on oxidative stability of carbon
Tatsuya Shimizu	Advanced halogen-free flame retardant system for polyolefin applications with additive combination technology
Jürgen Troitzsch	Passive fire safety in conventional and E-vehicles: an overview
De-Yi Wang	Fire-safe energy storage devices: big challenge, bigger opportunity
Hao Wang	Second wave of carbon fibre composites and the issues of flame retardancy

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Rui Wang	Carbon dots as smoke suppression agents for construction of complementary flame retardant system toward PET
Xu Wang	Preparation of reactive flame retardant and study on its flame retardancy of polylactic acid
Yanzhi Xia	Research progress and application of natural bio-based flame retardant materials
Mingshu Yang	Enhanced flame retardancy of polypropylene by the synergism between a phosphorus-containing polysiloxane and the intumescent flame retardant
Jinfei Yang	Design, synthesis and application of ionic liquid flame retardants
Anthony Yuen	Implementing atomistic modelling approach for pyrolytic fire development and gas evolutions of flame retardant polymer composites
Mauro Zammarano	High performance fire barriers for upholstered furniture with low flammability and cigarette ignition resistance
Sheng Zhang	The flame retardancy and UV resistance of polypropylene composites
Yunfeng Zhao	High temperature resistant resin matrix composite material and its aerospace application
Jianhe Zhao	Research on fire resistance test technical standards for manned spacecraft

Youth Forum (In alphabetical order of last name)

Name	Lecture Topic
Li Chen	Versatile flame-retardant epoxy vitrimers and their carbon fiber composites via catalyst-free transesterification
Weizhao Hu	An insight into pyrolysis and flame retardant mechanism of unsaturated polyester resin with different polymeric organic phosphorus structure
Juan Li	Flame retardant bamboo fiber reinforced polylactic acid composites regulated by interfacial silicon aerogel
Jie Liu	Synergistic effect between phosphorus-containing flame retardants and metal-based catalyst in epoxy resin
Yun Liu	The construction of flame-retardant cellulose-based textiles used bio-based materials
Ye-Tang Pan	Improving the fire safety of epoxy resin with novel metal-POSS organic frameworks
Yong Qiu	Carbonization-oriented synergistic effect in flame retardant flexible polyurethane foam
Pingan Song	Designing bioinspired fire retardant coatings for diverse fire protections
Jun Sun	Life cycle design of fully bio-based poly(lactic acid) composites with high flame retardancy, UV resistance, and degradation capacity
Yingjun Xu	Flame retardation of vinyl ester resins and their composites via phosphorus-containing 1-vinylimidazole salts
Miaojun Xu	Investigation of synergistic flame retardant and smoke suppression polyolefin composites
Anthony Yuen	Implementing atomistic modelling approach for pyrolytic fire development and gas evolutions of flame retardant polymer composites
Wenchao Zhang	Research on intrinsically flame retardant vinyl resin and its composite materials
Haibo Zhao	Design and fabrication of high-performance fire-safety polymeric foams

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✚ Important Dates

- Deadline of abstract: Dec.20, 2022.
- Deadline for early reduced registration: Mar. 5, 2023.
- Deadline for poster exhibition documents: Mar. 5, 2023.
- On-site registration: Mar. 17 (whole day), 2023.
- Symposium sessions: Mar. 18 - 19, 2023.

✚ Submission of Extended Abstract

Extended Abstract should be a brief description of your work, and it can highlight the main contribution of your presentations. Any graph, chart, diagram, scheme or table for better understanding of your work are highly encouraged. Due to the limitation on the number of pages that can be published in the proceedings, the length of the extended abstract is restricted to a maximum of two A4 pages. Attendees should submit the Extended Abstract of ISFRMT2022 through the symposium e-mail address: isfrmt@126.com. The submitted Extended Abstract will be subjected to the reviewing procedure by the invited members of Scientific Committee of ISFRMT2022. All the TEMPLATE for Extended Abstract will be shown on the conference website www.isfrmt.org.

✚ Poster Presentation

The 7th International Symposium on Flame Retardant Materials and Technology provides a chance to show your poster online, offline, and/or 1-minute oral presentation, finally we will select the "Best Poster Award".

Submission time: March 18 - 19 (Beijing time)

Participants: All participants who register and participate in the poster submission

Poster format: English; 120 cm high, 80 cm wide; JPG, PNG, GIF, PDF, etc.

Submission method: Please send the electronic version of your poster to isfrmt@126.com, and indicate that,

- a) do you participate in the 1-minute oral presentation?
- b) if you participate in a poster oral presentation, is it online or offline?
- c) do you participate in the paper version of the poster communication? If yes, please print and bring the paper version of your poster to the conference.

✚ Registration Fees

	Before Mar. 5, 2023	After Mar. 5, 2023.
Regular Participant	\$400	\$600
Student	\$300	\$400

Notes:

- 1) The registration fees for regular participants and students include the admission fee, conference material fee, coffee breaks, banquet, lunches and dinners during the symposium.
- 2) The cost of accommodation during the conference is not included in the registration fee.

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3) Bank remittance is recommended for the delivery of the registration fee. The relative information is as follows:

ACCOUNT Name: Beijing Institute of Technology

ACCOUNT Number: 0200007609014435495

BENE BANKER'S A/C NO. (收款行在该代理行的账号): 001043718

BENEFICIARY BANKER'S NAME (收款行名称): INDUSTRIAL AND COMMERCIAL BANK OF CHINA, BEIJING MUNICIPAL BRANCH, BEIJING, PRC (中国工商银行股份有限公司北京市分行)

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Remittance Message: ISFRMT2022

After remittance, please scan the bank slip and send it to the email addresses ("isfrmt2022@163.com" and "isfrmt@126.com"). Please indicate the name of the registrant and the company name of the registrant in the email.

4) On-site registration is also accepted.

ISFRMT2022 Sponsoring & Exhibiting

In order to make the conference conditions better, sponsoring is welcomed from related companies and individuals. Moreover, the companies/organizations are also welcomed to exhibit the novel FR products, FR technologies & instruments, and the FR technical service at the conference venue. Please contact us for more information.

Contact

Prof. Dinghua Li (86-13601038267)

Prof. Xiangmei Li (86-13641360384)

Prof. Wenchao Zhang (86-13811660813)

Prof. Ye-Tang Pan (86-13439010118)

Dr. Silu Chen (86-18801252991)

Prof. Zhishuai Geng (86-13621105946)

Address: National Engineering Research Center of Flame Retardant Materials,
Beijing Institute of Technology,
No.5 Zhongguancun South Street, Haidian District Beijing, China 100081

Phone/Fax: 86-010-68913066

E-mail: isfrmt@126.com