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# ICSBM 2023

The 3rd International Conference on  
Sustainable Building Materials  
第三届可持续建筑材料国际会议

## Conference Manual 会议手册



24-27 September, 2023 | Wuhan · China

2023年9月24-27日 | 中国·武汉

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## Organizers

- Wuhan University of Technology  武汉理工大学
- Eindhoven University of Technology 
- Wuhan University  武汉大学  
WUHAN UNIVERSITY

## Supported by

- Réunion Internationale des Laboratoires et Experts des Matériaux,  
systèmes de construction et ouvrages 
- Asian Concrete Federation 

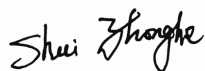
## ▶ ABOUT THE CONFERENCE

The building sector is by far the largest consumer of raw materials and producer of manmade materials. From a sustainability and circularity point of view, the effects of this demand can among others be mitigated using biogenic resources, smart material design, enhanced durability, functionalization, reuse and recycling, and the use of side streams (“waste”). The conference addresses this challenge starting from a scientific approach; building materials science being a syncretic discipline hybridizing mineralogy, ceramics, solid-state physics, chemistry, metallurgy and biology. Advanced characterization and treatment methods, together with novel technologies and modelling tools, are vital for the study and improvement of the complete life cycle of building materials, from raw materials, to production, use and recycling.

It is more important than ever before to accelerate innovation in cement and concrete sector and to improve the sustainability of building materials. The challenges in the design, characterization, performance and application of innovative and sustainable building materials are diverse and interdisciplinary. The primary goal of the conference is to address these challenges starting from a scientific approach, to present recent advances in research and application of sustainable building materials, and to provide further high-level platform for professional exchange of knowledge.

Following the success of the preceding conferences in Wuhan and Eindhoven, we are pleased to announce the organization of the 3rd International Conference on Sustainable Building Materials, ICSBM 2023, in Wuhan, China.

We hope you will enjoy your stay in Wuhan!



**Zhonghe Shui**  
Chairman  
Scientific Committee



**Wei Chen**  
Chairman  
Organizing Committee



**H.J.H. Brouwers**  
Co-Chairman  
Organizing Committee



**Qingliang Yu**  
Co-Chairman  
Organizing Committee

► CONFERENCE AGENDA

Date	Time	Agenda	Venue
24 <sup>th</sup> Sept	08:00-20:00	Registration	2 <sup>nd</sup> floor
	18:00-20:00	Welcome reception	9763 Bar
25 <sup>th</sup> Sept	08:30-08:40	Opening ceremony	4 <sup>th</sup> floor
	08:40-09:00	Group photo	1 <sup>st</sup> floor
	09:00-12:00	Keynote Speech	4 <sup>th</sup> floor
	12:00-13:30	Lunch	3 <sup>rd</sup> floor
	14:00-18:00	Parallel Sessions	5 <sup>th</sup> floor
	18:30-20:30	Welcome Banquet	Jiulong Hotel
26 <sup>th</sup> Sept	08:30-12:00	Parallel Sessions	5 <sup>th</sup> floor
	12:00-13:30	Lunch	3 <sup>rd</sup> floor
	14:00-18:00	Parallel Sessions	5 <sup>th</sup> floor
	18:30-20:30	Dinner	3 <sup>rd</sup> floor
27 <sup>th</sup> Sept	08:30-11:20	Keynote Speech & Closing ceremony	4 <sup>th</sup> floor
	11:30-13:30	Lunch	3 <sup>rd</sup> floor

\*Please see page 23 for the Venue details.

► CONFERENCE SCHEDULE

25 <sup>th</sup> Sept		Opening Address	Room 401
<b>Chairman: Wei Chen (Wuhan University of Technology)</b>			
1	<b>Opening speech</b> Prof. Fangbing Meng Deputy Secretary of the CPC Wuhan University of Technology Committee		08:30-08:40
2	Group Photo		08:40-09:00
<b>Keynote Speech</b>			
<b>Chairman: Feng Xing (Shenzhen University)</b>			09:00-10:00
1	<b>Calcined clay binders</b> Harald Justnes, SINTEF		9:00-9:30
2	<b>Ecological concrete recycling</b> C.S. Poon, The Hong Kong Polytechnic University		9:30-10:00
<b>Coffee break</b>			10:00-10:10
<b>Chairman: H.J.H. Brouwers (Eindhoven University of Technology)</b>			10:10-11:40
3	<b>Corrosion detection in reinforced concrete</b> Zongjin Li, Macau University of Science and Technology		10:10-10:40
4	<b>Current status of PCE superplasticizer</b> Johann Plank, Technical University of Munich		10:40-11:10
5	<b>New cement clinker</b> Jueshi Qian, Chongqing University		11:10-11:40
<b>Lunch</b>			12:00-13:30

<b>25<sup>th</sup> Sept</b>				
<b>S1: Advances in cementitious binders &amp; concrete</b>				<b>Room 501</b>
<b>Chairman: Qiu Li (Wuhan University of Technology)</b> <b>Hossein Karimi (Eindhoven University of Technology)</b>				<b>14:00-15:45</b>
<b>Invited speech, Study on carbonation mechanism of silicate minerals</b> <b>Jun Chang, Dalian University of Technology</b>				14:00-14:25
1	Effects of the electrical double layer on nanoscale chloride transport in alkali-activated slag materials	<b>Yong Zhang</b>	Fuzhou University	14:25-14:45
2	Applications of the half-calcined Na <sub>3</sub> PO <sub>4</sub> -doped dolomite in magnesium oxychloride cement	<b>Ju Huang</b>	Central South University	14:45-15:05
3	Enhancing mechanical properties of portland cement with blending CO <sub>2</sub> -intermixed high belite calcium sulfoaluminate cement	<b>Shuang Luo</b>	Hunan University	15:05-15:25
4	Alkalinity optimization and long-term life prediction for BFRP bars serving in simulated marine concrete environments	<b>Xiang Liu</b>	Wuhan University of Technology	15:25-15:45
<b>Coffee break</b>				15:45-15:55
<b>Chairman: Yong Zhang (Fuzhou University)</b> <b>Zhenming Li (The University of Sheffield)</b>				<b>15:55-18:00</b>
<b>Invited speech, Investigation of non-uniform deformation, stress, and crack in concrete</b> <b>Peng Gao, South China University of Technology</b>				15:55-16:20
1	High air purification efficiency photocatalytic cement paste with tiny dosage of photocatalysts	<b>Zixiao Wang</b>	Nanjing University of Science and Technology	16:20-16:40
2	Mechanical and ecological properties of CO <sub>2</sub> curing magnesium slag concrete	<b>Lu Zhang</b>	Xi'an University of Architecture and Technology	16:40-17:00
3	Effect of CO <sub>2</sub> curing on carbonation products and subsequent hydration of cementitious materials	<b>Congcong Ma</b>	Chongqing University	17:00-17:20
4	Pre-wet-carbonated 10% cement in the production of CO <sub>2</sub> -mixed cement pastes	<b>Ba Tung Pham</b>	Hunan University	17:20-17:40
5	Study of the rheological properties and flocculation mechanism of PAM on underwater non-dispersible slag/fly ash-based alkali-activated cementitious materials	<b>Ze Yu</b>	Dalian University of Technology	17:40-18:00
<b>Welcome Banquet</b>				18:30-20:30

25 <sup>th</sup> Sept				
<b>S2: Waste recovery, treatments and valorizations</b>				<b>Room 502</b>
<b>Chairman: Shengwen Tang (Wuhan University) Shuangxin Li (Northeast Forestry University)</b>				<b>14:00-15:45</b>
<b>Invited speech, Solidification mechanisms of lead in high ferrite cement clinker Yunsheng Zhang, Southeast University</b>				14:00-14:25
1	Fly ash as magneto-responsive additive for active rheology control of cementitious materials	<b>Dengwu Jiao</b>	City University of Hong Kong	14:25-14:45
2	Use of rice husk ash for mitigating the autogenous shrinkage of UHPC	<b>Hao Huang</b>	Delft University of Technology	14:45-15:05
3	Research and application on the performance of concrete prepared by sludge gasification slag	<b>Juntao Ma</b>	North China University of Water Resources and Electric Power	15:05-15:25
4	High performance bio-lightweight concrete using eco-aerogel coated miscanthus fibers	<b>Yuxuan Chen</b>	Wuhan University	15:25-15:45
<b>Coffee break</b>				15:45-15:55
<b>Chairman: Xinde Tang (Shandong Jiaotong University) Peipeng Li (Wuhan University of Technology)</b>				<b>15:55-18:00</b>
<b>Invited speech, Design, preparation, and performance of sustainable concrete incorporating solid waste Guangcheng Long, Central South University</b>				15:55-16:20
1	A novel method of co-disposal of steel slag and municipal solid waste incineration fly ash under alkali activation	<b>Yunqing Xing</b>	Dalian University of Technology	16:20-16:40
2	Solidification and stabilization of heavy metals in municipal solid waste incineration fly ash using nano-alumina by alkali-activated treatment	<b>Tianru Li</b>	Dalian University of Technology	16:40-17:00
3	Study on the effect of sewage sludge ash on the properties of cement paste and its water film thickness	<b>Zunrui Zheng</b>	Guangxi Minzu University	17:00-17:20
4	Evaluation of graphene oxide on microstructure and micromechanical properties of ultra-high performance concrete with recycled fine aggregate	<b>Kang Chen</b>	Wuhan Institute of Technology	17:20-17:40
5	Real-time sensor-based characterization of recycled coarse aggregates (RCA)	<b>Cheng Chang</b>	Delft University of Technology	17:40-18:00
<b>Welcome Banquet</b>				18:30-20:30



<b>25<sup>th</sup> Sept</b>				
<b>S3: Functionalizing building materials</b>				<b>Room 503</b>
<b>Chairman: Rui Yu (Wuhan University of Technology)</b> <b>Haoliang Huang (South China University of Technology)</b>				<b>14:00-15:45</b>
<b>Invited speech, Oxygen diffusion into unsaturated concrete and affecting chloride-induced corrosion of steel bars</b> <b>Zuquan Jin, Qingdao University of Technology</b>				14:00-14:25
1	Novel C-M/A/F-S-H seeds: Synthesis, characterization and the effect on cement hydration	<b>Chuanlin Hu</b>	Wuhan University of Technology	14:25-14:45
2	Limitation of innovation and sustainability - example of industrial floors in germany	<b>Chris Straub</b>	CSH CONCEPT GmbH	14:45-15:05
3	Microstructure characterization of (A/F)H3 phase with different Al/(Fe+Al) ratios based on calcium sulfoaluminate cement	<b>Jiangchuan Li</b>	Dalian University of Technology	15:05-15:25
4	Active ensemble learning model for predicting the early-age stress evolution in restrained concrete	<b>Minfei Liang</b>	Delft University of Technology	15:25-15:45
<b>Coffee break</b>				15:45-15:55
<b>Chairman: Chuanlin Hu (Wuhan University of Technology)</b> <b>Hongzhi Zhang (Shandong University)</b>				<b>15:55-18:00</b>
<b>Invited speech, Targeted healing system for marine concrete</b> <b>Biqin Dong, Shenzhen University</b>				15:55-16:20
1	Mechanism of Ba ion solution in LCCSB and its influence on carbonation reaction	<b>Jianping Zhu</b>	Henan Polytechnic University	16:20-16:40
2	Formation of gradient interface in concrete repair and its durability under load and marine environment coupling effects	<b>Haoliang Huang</b>	South China University of Technology	16:40-17:00
3	Enhancing the thermo-mechanical properties of ultra-high-performance concrete through synergistic flame-retardant polymer fibers	<b>Tong Zhang</b>	Northeastern University	17:00-17:20
4	Electromagnetic absorption characteristics of alkali-activated slag-fly ash composite cementitious material	<b>Peiqi Zheng</b>	University of Jinan	17:20-17:40
5	Experimental study on novel low carbon ultra-high performance concrete: mechanical properties and microstructure characterization	<b>Benhao Gao</b>	Wuhan University	17:40-18:00
<b>Welcome Banquet</b>				18:30-20:30

25 <sup>th</sup> Sept				
S4: Green products & Bio-based materials				Room 504
<b>Chairman: Shaohua Li (Wuhan University)</b> <b>Jianxin Lu (The Hong Kong Polytechnic University)</b>				<b>14:00-15:45</b>
<b>Invited speech, Performance and phase evolution of potassium magnesium phosphate cement under deicing salt erosion</b> <b>Pengkun Hou, University of Jinan</b>				14:00-14:25
1	Synthesis of aragonite whisker from recycled concrete waste by carbonation method	<b>Peiliang Shen</b>	The Hong Kong Polytechnic University	14:25-14:45
2	Preparation and performance control of recycled tyre fiber reinforced concrete	<b>Meng Chen</b>	Northeastern University	14:45-15:05
3	Mechanical property, microstructure and anti-acid rain erosion performance of red mud-slag-based geopolymer	<b>Xiaohai Liu</b>	Zhengzhou University	15:05-15:25
4	Effect of steel slag powder on the properties of magnesium phosphate cement	<b>Xiangrui Meng</b>	Shanghai Jiao Tong University	15:25-15:45
<b>Coffee break</b>				15:45-15:55
<b>Chairman: Xinhua Cai (Wuhan University)</b> <b>Gang Liu (Xi'an Jiaotong University)</b>				<b>15:55-18:00</b>
<b>Invited speech, CO<sub>2</sub> utilization for both accelerated carbonation curing of cement mortar and pretreatment of mineral admixtures</b> <b>Xiaojian Gao, Harbin Institute of Technology</b>				15:55-16:20
1	Coupled thermodynamic modelling and experimental study of alkali-activated slag cement under combined attack of chloride and sulfate salts	<b>Yibing Zuo</b>	Huazhong University of Science and Technology	16:20-16:40
2	New insights in the preparation of artificial aggregates: towards sustainable concrete	<b>Yunpeng Liu</b>	Wuhan University of Technology	16:40-17:00
3	The role of mineral wool waste in geopolymer: the cementing properties and environmental impact	<b>Yan Luo</b>	Eindhoven University of Technology	17:00-17:20
4	Thermal responsive clay-hydrogel composite for additive construction	<b>Haidong huang</b>	Wuhan University of Technology	17:20-17:40
5	Study on the deterioration of interfacial bond strength between LWAC and OC under the coupling effect of sulfate erosion and dry-wet cycle	<b>Zhenghao Fu</b>	Wuhan University of Science and Technology	17:40-18:00
<b>Welcome Banquet</b>				18:30-20:30

<b>26<sup>th</sup> Sept</b>				
<b>S1: Advances in cementitious binders &amp; concrete</b>				<b>Room 501</b>
<b>Chairman: Jiangxiong Wei (South China University of Technology)</b> <b>Dengwu Jiao (City University of Hong Kong)</b>				<b>8:30-9:55</b>
<b>Invited speech, Low-carbon utilization of waste Sulphoaluminate cement design, performance and application</b> <b>Jian Zhou, Hebei University of Technology</b>				8:30-8:55
1	Spin, orbital, charge ordering, and elastic properties of ferrite cement C <sub>4</sub> AF	<b>Neng Li</b>	Wuhan University of Technology	8:55-9:15
2	Evolution of crack fractal characteristics of polypropylene fiber geopolymer during flexural fracture	<b>Li Li</b>	Northwest A&F University	9:15-9:35
3	Characterization of N-(C)-A-S-H gels: insight from molecular dynamics and experimental study	<b>Yun Chen</b>	Delft University of Technology	9:35-9:55
<b>Coffee break</b>				9:55-10:05
<b>Chairman: Neng Li (Wuhan University of Technology)</b> <b>Huali Hao (Wuhan University)</b>				<b>10:05-11:50</b>
<b>Invited speech, The pathway to low-carbon development: Chinese cement industry</b> <b>Jiayuan Ye, China Building Materials Academy Co., Ltd.</b>				10:05-10:30
1	Feasibility of preparing carbonated fly ash as supplementary cementitious material	<b>Hongzhi Zhang</b>	Shandong University	10:30-10:50
2	Mixture design theory of ultra-high performance concrete (UHPC): From particle packing model to artificial intelligence technique	<b>Dingqiang Fan</b>	The Hong Kong Polytechnic University	10:50-11:10
3	Study on optimization of instant microwave curing regimes of Ultra-High performance concrete based on response surface method	<b>Yidi Liu</b>	Northeast Forestry University	11:10-11:30
4	Evaluation of chloride diffusion in recycled aggregate concrete including slag using PSO-BP and GA-BP neural network	<b>Xuan Liu</b>	Wuhan Institute of Technology	11:30-11:50
<b>Lunch</b>				12:00-13:30

26 <sup>th</sup> Sept				
<b>S2: Waste recovery, treatments and valorizations</b>				<b>Room 502</b>
<b>Chairman: Yibing Zuo (Huazhong University of Science and Technology) Zhuqing Yu (Nanjing Tech University)</b>				<b>8:30-9:55</b>
<b>Invited speech, Developing Sustainable Building Materials through Utilization of Steel Industrial Solid Waste: A Case Study of Sintering Flue Gas Desulphurization Ash and Steel Slag Composite Cementitious Material</b> <b>Dongmin Wang, China University of Mining &amp; Technology, Beijing</b>				8:30-8:55
1	Overcoming the retardation effect of high concentration borate solution on cement hydration	<b>Qiu Li</b>	Wuhan University of Technology	8:55-9:15
2	Reactivity and Microstructure of De-chlorinated Ti-Extracted Residues	<b>Shuping Wang</b>	Chongqing University	9:15-9:35
3	Lightweight, deformable, and water-resistant cement mortars with recycled plastics enabled by in-situ polymerization	<b>Ahmed Al-Mansour</b>	Zhejiang University	9:35-9:55
<b>Coffee break</b>				9:55-10:05
<b>Chairman: Peiliang Shen (The Hong Kong Polytechnic University) Yuxuan Chen (Wuhan University)</b>				<b>10:05-11:50</b>
<b>Invited speech, Effect of the activation agents on the properties of the obtained geopolymers from high-calcium fly ash</b> <b>Katarzyna Zarębska, AGH</b>				10:05-10:30
1	Prediction of deformations of alkali-activated slag concrete under semi-adiabatic condition	<b>Zhenming Li</b>	The University of Sheffield	10:30-10:50
2	Phosphorus removal improvement of porous concrete using highly adsorptive aggregates	<b>Fan Wu</b>	Eindhoven University of Technology	10:50-11:10
3	Synthesis of Novel Shrinkage-reducing Polycarboxylate Superplasticiser and its Performance on the workability and Shrinkage of Alkali-Activated Slag	<b>Shuo Yan</b>	Yunnan University	11:10-11:30
4	Design of Core-Shell Aggregates and Research on the Mechanism of Heavy Metal Stabilization in Red Mud	<b>Di Wu</b>	Qingdao University of Technology	11:30-11:50
<b>Lunch</b>				12:00-13:30

26 <sup>th</sup> Sept				
S3: Functionalizing building materials				Room 503
<b>Chairman: Jianping Zhu (Henan Polytechnic University)</b> <b>Yunpeng Liu (Wuhan University of Technology)</b>				8:30-9:55
<b>Invited speech, Dispersal mechanism and application technology of power ultrasound in cement based materials</b> <b>Chong Wang, Chongqing University</b>				8:30-8:55
1	Preparing energy conservation self-levelling mortar via fly ash cenospheres/paraffin using in floor radiant heating	<b>Wukui Zheng</b>	Xi'an University of Architecture and Technology	8:55-9:15
2	Understanding the role of carbon nanotubes in low-carbon concrete: from experiment to molecular dynamics	<b>Kai Cui</b>	Dalian University of Technology	9:15-9:35
3	Ambiently dried silica aerogel from waste glass, production and sustainability analysis	<b>Marina Borzova</b>	Eindhoven University of Technology	9:35-9:55
<b>Coffee break</b>				9:55-10:05
<b>Chairman: Lei Wang (Xi' an University of Architecture and Technology)</b> <b>Xiaowei Ouyang (Guangzhou University)</b>				10:05-11:50
<b>Invited speech, Key Technologies for multiple protection of concrete durability under severe environment</b> <b>Jinxiang Hong, Sobute New Materials Co., Ltd.</b>				10:05-10:30
1	Intelligent Grasping Planning of Decoration Waste Using Generative Grasping Convolutional Neural Network	<b>Zuohua Li</b>	Harbin Institute of Technology, Shenzhen	10:30-10:50
2	Development of Low-carbon Supersulfated Cement for Solidification and Stabilization of Hazardous Waste	<b>Jianxin Lu</b>	The Hong Kong Polytechnic University	10:50-11:10
3	The compressive fatigue performance of ultra-high performance cementitious composites with nanofillers	<b>Linwei Li</b>	Dalian University of Technology	11:10-11:30
4	Silica-aerogel composites for thermal insulation application: Characteristics and reinforcement evaluation	<b>Samuel Pantaleo</b>	Eindhoven University of Technology	11:30-11:50
<b>Lunch</b>				12:00-13:30

<b>26<sup>th</sup> Sept</b>				
<b>S4: Green products &amp; Bio-based materials</b>				<b>Room 504</b>
<b>Chairman: Meng Chen (Northeastern University)</b> <b>Xiaohai Liu (Zhengzhou University)</b>				<b>8:30-9:55</b>
<b>Invited speech, Design and Application Performance of Phase Change Heat Storage Aggregates and Concrete</b> <b>Hui Li, Xi'an University of Architecture and Technology</b>				8:30-8:55
1	Influences of carbonate sources on the performance of calcium carbonate-metakaolin-cement composites	<b>Gang Liu</b>	Xi'an Jiaotong University	8:55-9:15
2	Effects of lime content on properties of autoclaved aerated concrete made of circulating fluidized bed ash	<b>Lei Wang</b>	Xi'an University of Architecture and Technology	9:15-9:35
3	Compatibility evaluation on phosphogypsum-based cementitious binder and cold-bonded aggregates to conventional cements and concretes	<b>Gaoshang Ouyang</b>	Wuhan University of Technology	9:35-9:55
<b>Coffee break</b>				9:55-10:05
<b>Chairman: Hao Huang (Delft University of Technology)</b> <b>Yanfeng Fang (Shenyang Jianzhu University)</b>				<b>10:05-11:50</b>
<b>Invited speech, Air void structure as a random point process</b> <b>Shin-ichi Igarashi, Kanazawa University</b>				10:05-10:30
1	Heavy metal solidification and reaction mechanism in alkali-activated MSWI fly ash specimens with natural zeolite	<b>Xiong Zhang</b>	Dalian University of Technology	10:30-10:50
2	Mechanical and Thermal Performance of Electric Arc Furnace Slag-based Alkali Activated Mortar	<b>Anant Mishra</b>	BITS Pilani	10:50-11:10
3	Preparation and Characterization of Portland Cement Clinker Made by Non-traditional Raw Material	<b>Tao Lu</b>	Nanjing Tech University	11:10-11:30
4	Effect of different particle sizes of coarse aggregates on chloride diffusion by AC impedance spectroscopy	<b>Dongxing Cai</b>	Henan Polytechnic University	11:30-11:50
<b>Lunch</b>				12:00-13:30

<b>26<sup>th</sup> Sept</b>				
<b>S1: Advances in cementitious binders &amp; concrete</b>				<b>Room 501</b>
<b>Chairman: Yuwei Ma (Guangzhou University)</b> <b>Jian Huang (Wuhan University of Technology)</b>				<b>14:00-15:45</b>
<b>Invited speech, Geopolymers for Marine Construction and Resources</b> <b>Zuhua Zhang, Tongji University</b>				14:00-14:25
1	Machine learning based strength prediction model for cement clinker	<b>Zhongcheng Ma</b>	China Building Materials Academy	14:25-14:45
2	Utilising Low Al/Si Materials Manufacturing Ternesite - Ye'elimité Cement and its Long-age Performance	<b>Yangrui Li</b>	Chongqing University	14:45-15:05
3	Enhancing the early performance of BOFS-blended cement pastes by internal carbonation with 13X zeolite	<b>Zhikai Wang</b>	Hunan University	15:05-15:25
4	Effect of calcium leaching on the chloride-binding properties of Portland cement	<b>Hongfeng Di</b>	Henan Polytechnic University	15:25-15:45
<b>Coffee break</b>				15:45-15:55
<b>Chairman: Pei Tang (Wuhan University of technology)</b> <b>Zhongcheng Ma (China Building Materials Academy)</b>				<b>15:55-18:00</b>
<b>Invited speech, Long term development of mechanical properties of concretes with different water to cement ratio and internally cured concretes</b> <b>Vlastimil Bilek, VSB - Technical University of Ostrava</b>				15:55-16:20
1	Viscoelastic origin of cement gel	<b>Shengwen Tang</b>	Wuhan University	16:20-16:40
2	The Mechanism of Microwave Curing for Ultra-high Performance Concrete	<b>Shuangxin Li</b>	Northeast Forestry University	16:40-17:00
3	Study on the design of alkali-activated concrete and its bonding properties with steel rebar	<b>Qi Li</b>	Wuhan University of Technology	17:00-17:20
4	Effect of Volcanic Rock on the Properties of Cement Mortar under Sulfate Attack	<b>Yang Li</b>	Nanjing Tech University	17:20-17:40
5	Phase and Structure Evolution of MPC Hydration Products in NaCl Solution	<b>Jinguang Zhao</b>	University of Jinan	17:40-18:00
<b>Dinner</b>				18:30-20:30

26 <sup>th</sup> Sept				
<b>S3: Functionalizing building materials</b>				<b>Room 503</b>
<b>Chairman: Yanfei Yue (Chongqing univeristy)</b> <b>Juntao Ma (North China University of Water Resources and Electric Power)</b>				<b>14:00-15:45</b>
<b>Invited speech, Bio-inspired design of cementitious materials for 3D printing</b> <b>Zhengyao Qu, Wuhan University of Technology</b>				14:00-14:25
1	Nanoscale Mechanisms of C-S-H Decalcification in Seawater	<b>Yong Tao</b>	The Hong Kong Polytechnic University	14:25-14:45
2	Surface Characterization of Carbonated Recycled Concrete Fines and Their Impact on Cement-Based, Lime-Based, and Alkali-Activated Materials	<b>Xiaowei Ouyang</b>	Guangzhou University	14:45-15:05
3	Mechanical properties and underlying mechanisms of nickel coated carbon nanotubes reinforced ultra-high performance cementitious composite	<b>Danna Wang</b>	Dalian University of Technology	15:05-15:25
4	Enhancing Chloride Migration Resistance of Cement Mortar with Fly Ash Through the Addition of Nano-Metakaolin	<b>Qiuchao Li</b>	Dalian Maritime University	15:25-15:45
<b>Coffee break</b>				15:45-15:55
<b>Chairman: Yong Tao (The Hong Kong Polytechnic University)</b> <b>Zixiao Wang (Nanjing Tech University)</b>				<b>15:55-18:00</b>
<b>Invited speech, Future fossil-free steelmaking slags – prospect for sustainable use in building materials</b> <b>Sieger Van der Laan, Eindhoven University of Technology</b>				15:55-16:20
1	Atomistic mechanisms of calcium silicates hydration	<b>Yunjian Li</b>	Macau University of Science and Technology	16:20-16:40
2	Effect of surface modification on the compressive properties of green mortar incorporating recycled plastic	<b>Huali Hao</b>	Wuhan University	16:40-17:00
3	Effects of nano SiO <sub>2</sub> on the hydration and hardening properties of Limestone Calcined Clay Cement (LC3)	<b>Qingming Liu</b>	University of Jinan	17:00-17:20
4	Self-sensing properties of alkali-activated materials	<b>Fangjie Li</b>	Guangzhou University	17:20-17:40
5	Synergistic effects of nano SiO <sub>2</sub> and air entraining agent (AEA) on frost-resistance of supersulfate cement	<b>Ruoyu Wang</b>	University of Jinan	17:40-18:00
<b>Dinner</b>				18:30-20:30



27 <sup>th</sup> Sept		Closing Address	Room 401
<b>Keynote Speech</b>			
		<b>Chairman: Qingliang Yu (Wuhan University)</b>	8:30-10:00
1	<b>Precursors for alkali activated materials</b> Ángel Palomo, Spanish National Research Council		8:30-9:00
2	<b>UHPFRC</b> Caijun Shi, Hunan University		9:00-9:30
3	<b>Metallurgical slag in concrete</b> Qiang Wang, Tsinghua University		9:30-10:00
		<b>Coffee break</b>	10:00-10:10
		<b>Chairman: Wei Chen (Wuhan University of Technology)</b>	10:10-11:10
4	<b>Modelling the reaction process, microstructure development and durability of alkali-activated materials</b> Guang Ye, Delft University of Technology		10:10-10:40
5	<b>Concrete mix design</b> H.J.H. Brouwers, Eindhoven University of Technology		10:40-11:10
		<b>Closing ceremony</b>	11:10-11:20
		<b>Lunch</b>	11:30-13:30

## ► CONFERENCE COMMITTEES

Scientific Committee -----

### Chairman:

Prof. Zhonghe Shui, Wuhan University of Technology, China

### Committee Members:

Prof. Mark Alexander, University of Cape Town, South-Africa

Prof. Sofiane Amziane, Université Clermont Auvergne, France

Dr. María de los Milagros Ballari, INTEC (UNL-CONICET), Argentina

Prof. Maria Bignozzi, Università di Bologna, Italy

Prof. Vlastimil Bilek, VSB-Technical University of Ostrava, Czech Republic

Prof. Jos Brouwers, Eindhoven University of Technology, Netherlands

Prof. Chris Cheeseman, Imperial College London, Great Britain

Prof. Wei Chen, Wuhan University of Technology, China

Prof. Xin Cheng, University of Jinan, China

Prof. Martin Cyr, LMDC, France

Prof. Nele de Belie, Ghent University, Belgium

Prof. Yong Du, Central South University, China

Prof. Maria Aristides Founti, National TU Athens, Greece

Prof. Christoph Gehlen, Technische Universität München, Germany

Prof. Shin-ichi Igarashi, Kanazawa University, Japan

Prof. Mirja Illikainen, University of Oulo, Finland

Committee Members:

Prof. Ole Mejlhede Jensen, Technical University of Denmark, Denmark

Prof. Zhengwu Jiang, Tongji University, China

Prof. Vanderley M John, University of São Paulo, Brazil

Prof. Harald Justnes, SINTEF, Norway

Prof. Kamal H Khayat, Missouri University of Science and Technology, United States

Prof. Konstantin Kovler, Israel Institute of Technology, Israel

Prof. Zongjin Li, Macau University of Science and Technology, China

Prof. Yue Li, Beijing University of Technology, China

Prof. Laibao Liu, Southwest University of Science and Technology, China

Prof. Barbara Lothenbach, EMPA, Switzerland

Prof. Horst-Michael Ludwig, Bauhaus-Universität Weimar, Germany

Prof. Ángel Palomo, Instituto Eduardo Torroja, Spain

Prof. C.S. Poon, Hong Kong Polytechnic University, China

Prof. Johann Plank, Technische Universität München, Germany

Prof. Mikhail Alekseevich Proskurnin, Moscow State University, Russia

Prof. John L Provis, University of Sheffield, Great Britain

Prof. Jueshi Qian, Chongqing University, China

Prof. Hans-Wolf Reinhardt, University of Stuttgart, Germany

Prof. Surendra P. Shah, Northwestern University, United States

**Committee Members:**

Prof. Erik Schlangen, Delft University of Technology, Netherlands

Prof. Caijun Shi, Hunan University, China

Prof. Jørgen Skibsted, Aarhus University, Denmark

Prof. Mohammed Sonebi, Queen's University, Great Britain

Prof. Mark Tyrer, Coventry University, Great Britain

Prof. Alex M. van Herk, Eindhoven University of Technology, Netherlands

Prof. Chong Wang, Chongqing University, China

Prof. Dongmin Wang, China University of Mining & Technology (Beijing), China

Prof. Fazhou Wang, Wuhan University of Technology, China

Prof. Jiangxiong Wei, South China University of Technology, China

Dr. Frank Winnefeld, EMPA, Switzerland

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Prof. Yan Yao, China Building Materials Academy, China

Dr. Guang Ye, Delft University of Technology, Netherlands

Prof. Qingliang Yu, Wuhan University, China

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Prof. Wensheng Zhang, China Building Materials Academy, China

Prof. Yamei Zhang, Southeast University, China

Prof. Yunsheng Zhang, Lanzhou University of Technology, China

Organizing Committee -----

**Conference Chairman:**

Prof. Wei Chen, Wuhan University of Technology

**Conference Co-Chairmen:**

Prof. H.J.H. Brouwers, Eindhoven University of Technology

Prof. Qingliang Yu, Wuhan University

**Conference secretariat:**

Dr. Bo Yuan, Wuhan University of Technology, China

Prof. Pei Tang, Wuhan University of Technology, China

Prof. Chuanlin Hu, Wuhan University of Technology, China

Prof. Qiu Li, Wuhan University of Technology, China

Dr. Yuxuan Chen, Wuhan University, China

Dr. F. Gauvin, Eindhoven University of Technology, Netherlands

Mr. Yanjie Tang, Eindhoven University of Technology, China

Dr. K. Schollbach, Eindhoven University of Technology, Netherlands

Dr. Shaohua Li, Wuhan University, China

## CONTACT DETAILS OF CONFERENCE SECRETARIAT

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Dr. Yuxuan Chen	+86 15927410958	yuxuan.chen@whu.edu.cn

**Conference info: [info@susbuildmat.com](mailto:info@susbuildmat.com)**

## MAIN TOPICS

**Advances in cementitious binders:** Carbonating binders, Carbon mineralization, Alkali activated materials, Geopolymer, Calcined clay cement, Magnesium Oxychloride Cement, Non-calcined cementitious binders, etc.

**Waste recovery, treatments and valorizations:** Processing, separating and recycling of building materials, Incineration ashes, Municipal solid waste incineration residues, Steel slags, Mine tailings, Supplementary cementitious materials, etc.

**Alternative reinforcements for concrete structures:** Basalt, Glass and Carbon fiber reinforced polymers, Plastic fiber reinforcement, aluminum alloy reinforcement, etc.

**Functionalizing building materials:** Nano-engineered, Self-healing, Self-cleaning, Self-compacting, Coated, Photocatalytic, Hydrophobic, etc.

**Green products:** Autoclaved aerated concrete, Lightweight concrete, Wood wool cement composites, Gypsum wallboards, Fired clay, Unconventional clays and aggregates, Alternative chemical admixtures, Low CO<sub>2</sub> options for concrete, etc.

**Bio-based materials:** Biofibers, Biomineralization, Bacteria, Bio-aggregates, Biodeterioration, Bio-deposition, Agricultural and biorefinery residues, etc.

## GENERAL INFORMATION

### CONFERENCE VENUE

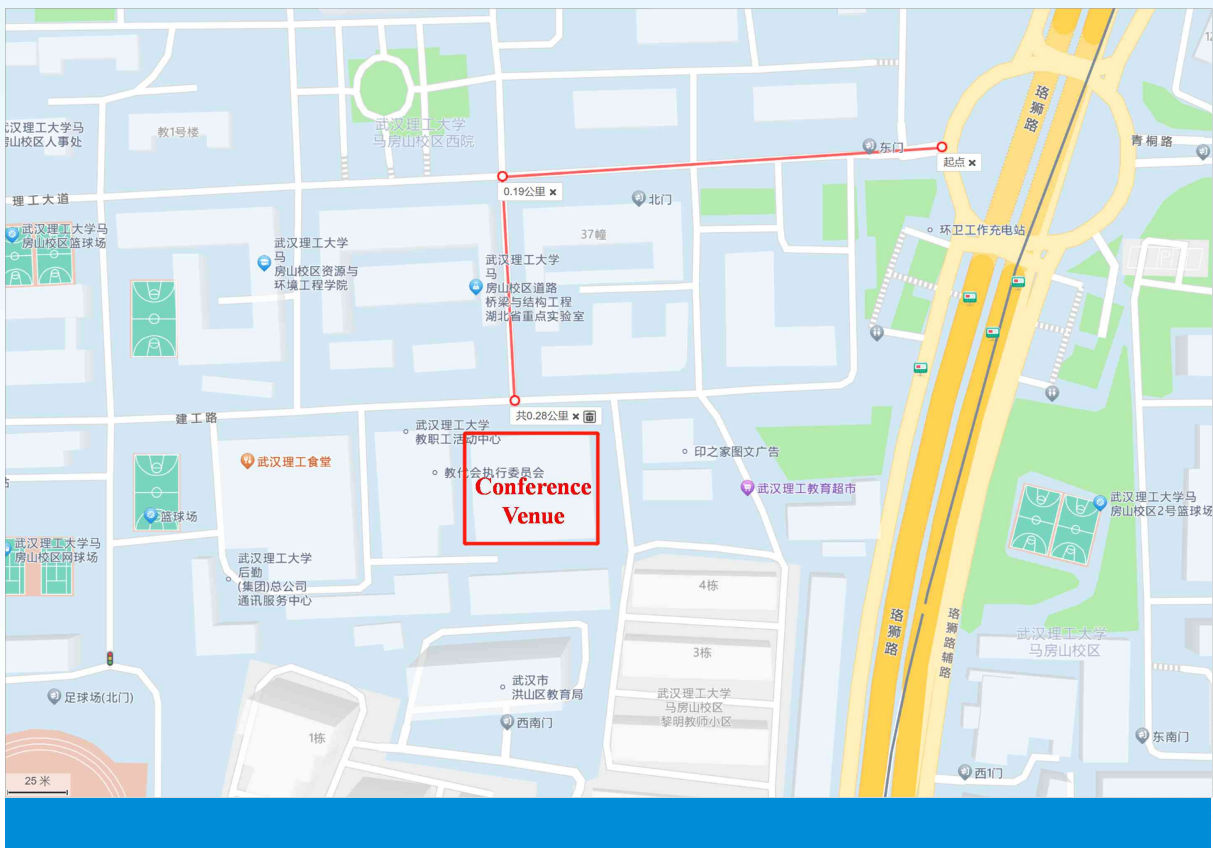
#### 会议地点

Venue: Construction Materials Building, West Campus (Mafangshan), Wuhan University of Technology

Address: No. 122 Luoshi Road, Hongshan District, Wuhan, Wuhan University of Technology

地点：武汉理工大学建筑材料实验楼（马房山校区西院）

地址：武汉市洪山区珞狮路122号，武汉理工大学



## MEETING ROOM

### 会场

**Main Room:** Room 401 (Meeting room), 4th floor, Construction Materials Building

**Parallel sessions:** Room 501-504, 5th floor, Construction Materials Building

**主会场:** 武汉理工大学西院建筑材料实验楼4楼401 (会议室)

**分会场:** 武汉理工大学西院建筑材料实验楼5楼501-504

## OFFICIAL LANGUAGE

### 官方语言

Language: English

语言: 英语

## PROCEEDINGS

### 论文集

Each registered conference attendee will receive a USB drive containing all conference abstracts.

每位注册参会者将收到一个U盘，内容包括所有会议摘要。

## OPENING CEREMONY

### 开幕式

Date: Monday, 25<sup>th</sup> September, 2023

Time: 8:30-9:00

日期: 2023年9月25日, 星期一

时间: 8:30-9:00



## WELCOME RECEPTION

Date: Sunday, 24<sup>th</sup> September, 2023

日期：2023年9月24日，星期日

Time: 18:00-20:00

时间：18:00-20:00

Address: 9763 Bar, No.147 Luoshi Road, Hongshan District, Wuhan (150 meters walk from Jiedaokou Subway Station, Exit L).

You can search for "9763 Bar" on Amap to find directions and reach the destination.

地址：9763酒吧 武汉市洪山区珞狮路147号(街道口地铁站L口步行150米)

您可以在高德地图上搜索“9763 Bar”导航到达。

## WELCOME BANQUET

欢迎晚宴

Date: Monday, 25<sup>th</sup> September, 2023

日期：2023年9月25日，星期一

Time: 18:30-20:30

时间：18:30-20:30

Address: Jiulong Hotel No.272 Xiongchu Street, Hongshan District, Wuhan (Intersection of Xiongchu Avenue and Gongda Road)

地址：九龙大酒店 武汉市洪山区雄楚大街272号(雄楚大道与工大路交叉口)



## ► CONFERENCE TIPS

Delegates should wear their delegate badges when entering or leaving the conference venue.

参会代表需佩戴代表证进出会场

Please copy the PPT file to the computer before the conference session (16:9 aspect ratio recommended).

请报告人在会议报到时,提前将PPT拷到会场电脑 (PPT建议比例16:9)

Please switch off the mobile phones or put them on silent mode during the sessions.

会议期间请将手机关闭或调至静音模式

The conference may announce the latest conference information during the conference, which will be updated on the conference website: <https://susbuildmat.com> or WeChat Official Account.

会议期间将实时发布最新的会议信息,敬请关注会议网站:  
<https://susbuildmat.com> 或公众号可持续建筑材料国际会议

During the conference period from September 25th to 27th in the past three years, the average high temperature in Wuhan was 31°C, and the average low temperature was 21°C. Wuhan's weather fluctuates significantly, so please pay attention to adding or removing clothing accordingly and bring rain gear.

近三年9月25-27日会议期间平均高温31°C,平均低温21°C。  
武汉市天气变化较大,请注意增减衣物和携带雨具

## ► PRACTICAL INFORMATION

### TRANSPORTATION

#### 交通

#### From Wuhan Tianhe International Airport:

Approx. 50km to Wuhan University of Technology

By taxi: It takes about one hour and costs about RMB150 (USD 20.70).

By subway: Take Metro Line 2 to Jiedao Kou Metro Station, leave from Exit J and walk for about 400 metres to the Wuhan University of Technology.

**从武汉天河国际机场出发：距离武汉理工大学约50公里。**

**打车：大约需要一个小时，费用约为150元。**

**乘地铁：乘坐2号线到街道口地铁站，从J出口出站，步行约400米到达武汉理工大学。**



WUHAN TIANHE  
INTERNATIONAL AIRPORT

#### From Wuhan Railway Station:

Approx. 15km from Wuhan University of Technology

By taxi: It takes about 40 minutes and costs about RMB 45 (USD 6.21).

By subway: Take Metro Line 4 then transfer to Metro Line 2, get off at the Jiedao Kou Metro Station, leave from Exit J, and walk for about 400 metres to the Wuhan University of Technology.

**从武汉火车站出发：距离武汉理工大学约15公里。**

**打车：大约需要40分钟，费用约为45元。**

**乘地铁：乘坐4号线，然后换乘2号线，在街道口地铁站下车，从J出口出站，步行约400米到达武汉理工大学。**



WUHAN  
RAILWAY STATION

## TRANSPORTATION

### 交通

#### From Hankou Railway Station:

Approx. 16km from Wuhan University of Technology

By taxi: It takes about 50 minutes and costs about RMB 55 (USD 7.59).

By subway: Take Metro line 2 to the Jiedao Kou Metro Station, leave from Exit J, and walk for about 400 metres to the Wuhan University of Technology.

**从汉口火车站出发：距离武汉理工大学约16公里。**

**打车：大约需要50分钟，费用约为55元。**

**乘地铁：乘坐4号线，然后换乘2号线，在街道口地铁站下车，从J出口出站，步行约400米到达武汉理工大学。**



HANKOU  
RAILWAY STATION

#### From Wuchang Railway Station:

Approx. 6km from Wuhan University of Technology

By taxi: It takes about 15 minutes and costs about RMB20 (USD 2.77).

By subway: Take Metro line 2 to the Jiedao Kou Metro Station, leave from Exit J and walk for about 400 metres to the Wuhan University of Technology.

**从武昌火车站出发：距离武汉理工大学约6公里。**

**打车：大约需要15分钟，费用约为20元。**

**乘地铁：乘坐2号线到街道口地铁站，从J出口出站，步行约400米到达武汉理工大学。**



WUCHANG  
RAILWAY STATION

## HOTELS INFORMATION

### 酒店信息

#### Chutian Guangdong International Hotel

Address: No.181 Donghu Road, Wuchang District, Wuhan, Hubei, China

Telephone: +86 15527136164 (Qin Zhang)

#### 武汉楚天粤海国际大酒店

地址：武汉市武昌区东湖路181号

电话：+86 15527136164 (张琴)

#### Fairfield by Marriott Wuhan Wuchang

Address: No.1 Building, Lee residence, Gongda Road, Hongshan District, Wuhan, Hubei, China

Telephone: +86 13545011699 (Xuefei Wang)

#### 万枫酒店 (街道口理工大学店)

地址：武汉市洪山区工大路理工馆1号楼

电话：+86 13545011699 (王雪飞)

#### Atour Hotel Huhan Jiedaokou

Address: No. 222 Luosi Road, Hongshan District, Wuhan, Hubei, China

Telephone: +86 15825612554 (Hao Chen)

#### 亚朵酒店 (武汉理工大学店)

地址：武汉市洪山区珞狮路222号诚功新时代

电话：+86 15825612554 (陈浩)

## HOTELS INFORMATION

### 酒店信息

#### Vienna International Hotel Huhan Jiedaokou

Address: Building A Wuhan University of Technology No.122 Luoshi Road,  
Hongshan District, Wuhan, Hubei, China

Telephone: +86 17771880716 (Chengyang Guo)

#### 维也纳国际酒店（武汉街道口理工店）

地址：武汉市洪山区珞狮路122号武汉理工大学孵化楼A座

电话：+86 17771880716（郭承洋）

#### Ji Hotel

Address: No. 12 Gongda Road, Hongshan District, Wuhan, Hubei, China

Telephone: +86 13212762282 (Yan Ma)

#### 全季酒店（武汉理工大学店）

地址：武汉市洪山区工大路12号理工云创城1栋附103号

电话：+86 13212762282（马艳）

## Tours 旅游

On the evening of September 26th, the conference organizing committee contacted Wuhan Hanxiu Performing Arts. The main performance at Hanxiu Theater is "Hanxiu", a show co-produced by Wanda Group and world-renowned stage artist Frank Dikötter. "Hanxiu" is grounded in Chinese culture and adopts the popular global show art form to offer a new interpretation of entertainment culture in a blending of Chinese and Western styles. Tickets for Zone B at Wuhan Hanxiu cost 529 RMB. We will set up a desk next to the registration desk on the 24th to assist interested attendees in booking tickets for the Hanxiu show.

在9月26日晚上，会务组联系了武汉汉秀演出方。汉秀剧场主要的演出是《汉秀》，此演出是万达集团与全球享誉盛名的舞台艺术大师弗兰克·德贡共同制作的剧目。《汉秀》以中西合璧的方式立足中国文化，借助全球流行的秀文化为演出形式，对娱乐文化做了最新的演绎。武汉汉秀B区的门票价格为529元人民币。我们将在24日会场注册旁设立展位，协助有兴趣观看汉秀的参会者安排订票。

**Address:** No. 138, Building 2, Donghu Road, Shuiguohu Street, Wuchang District, Wuhan.

**地址:** 武汉市武昌区水果湖街东湖路138号2栋武汉万达汉秀剧场

The conference organizer have arranged transportation to the Wanda Han Show Theater in Wuhan.

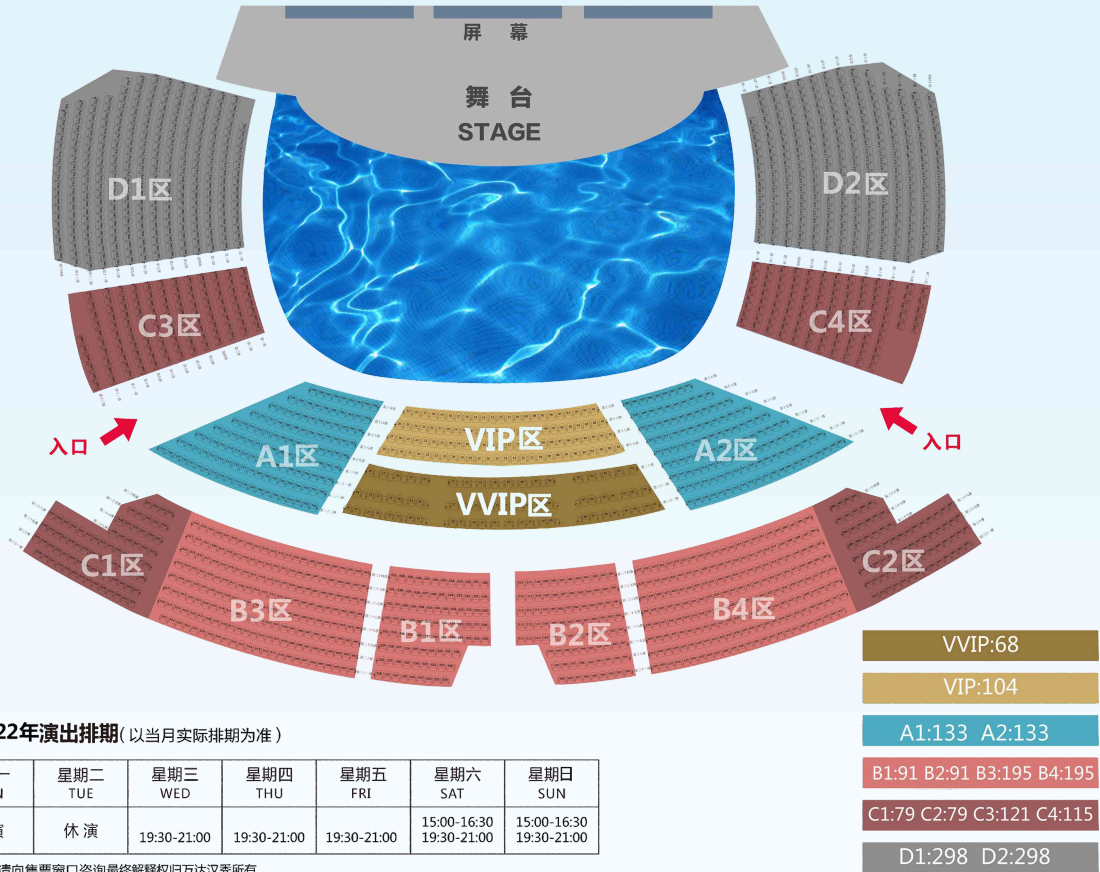
会务组安排车辆前往武汉万达汉秀剧场。

**Departure time:** 18:30, Tuesday, September 26, 2023

**发车时间:** 18:30, 2023年9月26日, 星期二

**Departure Venue:** In front of the Building Materials Laboratory, West Campus of Wuhan University of Technology (Mafangshan Campus)

**发车地点:** 武汉理工大学(马房山校区西院)建筑材料实验楼前



汉秀剧场2022年演出排期 (以当月实际排期为准)

演出日期	星期一 MON	星期二 TUE	星期三 WED	星期四 THU	星期五 FRI	星期六 SAT	星期日 SUN
演出时间	休演	休演	19:30-21:00	19:30-21:00	19:30-21:00	15:00-16:30 19:30-21:00	15:00-16:30 19:30-21:00

注：详细演出排期请向售票窗口咨询最终解释权归万达汉秀所有









