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Special Issue on the 2023 World Transport Convention



2023 World Transport Convention set to propel intelligent and green transportation

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2023 World Transport Convention set to propel intelligent and green transportation



Opening ceremony of WTC2023
Photo credit: Official website of WTC

From June 14 to 17, the 2023 World Transport Convention (WTC2023) was held in Wuhan, Hubei Province, under the theme “Innovation, Low-Carbon, Intelligence and Sharing – More Sustainable Transportation.” Jointly hosted by the China Association for Science and Technology (CAST), China’s Ministry of Transport (MOT), the Chinese Academy of Engineering (CAE), and the Hubei Provincial Government, WTC2023 featured a total of 261 parallel forums and 44 thematic events. It focused on crucial technologies for sustainable transportation development and provided a platform to showcase the latest technologies and models from around the world.

Highlights included the Belt and Road International Transport Symposium (BRITS), the China-Japan Engineering Academicians Forum, the Engineering Science and Technology Forum on Smart Highway Development, and the live finals of the 2023 World University Students’ Bridge Design Competition. Additionally, the convention unveiled more than 20

technologies and industry guidelines from 15 think tanks.

(Source: news.cn)

Event Highlights

WTC2023 unveils new technologies and industry standards

The 2023 World Transport Convention organized several press conferences from June 15 to 16. These conferences showcased new technologies from more than 20 companies, demonstrating significant advancements in smart transportation, green transportation, construction equipment, infrastructure maintenance, rural roads, and industry guidelines. The presentations evoked considerable interest and attention from the convention participants.

During these press conferences, four main

themes stood out:



Press conference venue at WTC2023
Photo credit: Official website of WTC

1. A shared commitment to eco-friendly and sustainable growth with emphasis on smart transportation and energy-saving, low-carbon solutions

In the field of smart transportation, MC Technology unveiled a digital solution for quantity management of transportation construction projects that enables streamlined quantity calculation and BIM modeling. Hubei Communications Investment Group debuted an all-source, all-time, all-domain, all-weather smart expressway technology that serves user needs before, during, and after travel, significantly improving the public transportation experience.

A commitment to green and low-carbon development was highlighted in the newly released *Assessment System for the Green Degree of Transportation Infrastructure Construction Projects*. This research provides a framework for sustainable development in transportation infrastructure construction and defines green objectives and implications of such projects. The Shanghai Research Institute of Building Sciences (SRIBS) presented a movable intelligent device for bridge monitoring and measurement that promotes

green and low-carbon construction of bridges.

2. New industry guidelines enhance quality of infrastructure

The convention also brought the release of guidelines jointly designed by industry stakeholders, the China Highway & Transportation Society (CHTS), and other key industry bodies. Notably, the *Resilient Evaluation Index System of Transportation Infrastructure Construction Projects* is geared towards boosting disaster prevention and mitigation measures and enhancing the resilience, stability, and reliability of transportation networks. Hebei Qingwei Technology introduced a standard for unit I-beam sparse plate expansion joints for highway bridges, which is not only easy to operate but also aids in improving the durability of bridges and maintaining smooth traffic flow.

3. Advances in road construction equip-

ment and materials

Many companies demonstrated new equipment and materials for the road construction sector. Among them, Oriental Yuhong released *White Paper of Transportation Tunnel Waterproofing and New-type HDPE Waterproofing Technology and Applications under the Target of Carbon Peaking and Carbon Neutrality*, which drives sustainable growth and enhances waterproofing solutions for tunnel construction projects. CCCC Second Harbor Engineering Company unveiled pioneering technologies and equipment for intelligent walking-type incremental launch processes and ultra-high concrete bridge towers.

4. Harnessing digital intelligence for informed decision-making

Other companies showcased applications of digital intelligence through the internet, big data, and AR technology to empower conventional

transportation. Such integration has facilitated accurate positioning, multidimensional data integration, data tracking, real-time monitoring, and prompt status alerts, providing robust data support for in-depth data analysis and better-informed decision-making.

(Source: Official website of WTC)

Events in Focus

WTC2023 Science and Technology Expo showcases innovative transportation technologies

On June 14, the WTC2023 Science and Technology Expo took place at the China Optics Valley Convention & Exhibition Center (COVCEC) in Wuhan. Covering an extensive area of 20,000 square meters, the expo showcased more than 300 technologies from around the world. These included groundbreaking solutions, cutting-edge technologies, and practical applications. The event highlighted remarkable advancements in smart engineering,



WTC2023 Science and Technology Expo
Photo credit: Official website of WTC

intelligent management, and intelligent manufacturing and featured new systems, equipment, materials, and solutions. Furthermore, it served as a platform for participants to share knowledge and stay updated on industry trends.

True to the convention theme, “Innovation, Low-Carbon, Intelligence, and Sharing - Forging More Sustainable Transportation,” CCCC Second Highway Consultants Co., Ltd. showcased innovative technologies and equipment that aim to make infrastructure construction green, intelligent, and industrialized. The company also presented several key national projects that spanned transportation, urban construction, and the environment. Among them were the Lion Ocean Channel, the Tianshan Shengli Tunnel in Xinjiang, and the Yanji Yangtze River Bridge in Hubei.

Hubei Communications Investment Group

unveiled a series of cutting-edge planning and design technologies. For instance, the highway service areas the group designed feature park-like aesthetics, low carbon emission strategies, digital technologies, and integrated energy solutions. Its Ezhou Airport Expressway project planned to adopt state-of-the-art smart technologies. The group also pioneered new surveying and mapping technologies to maximize accuracy. In the field of engineering, the group introduced smart transportation equipment, intelligent software, digital construction methods, comprehensive platform for highway construction, maintenance and management, digital bridge engineering techniques, and patented asphalt technologies.

(Source: Official website of WTC)

WTC2023 Engineering Science and Technology Forum on Smart Highway Development attracts wide industry attention

On June 15, the WTC2023 Engineering Science and Technology Forum on Smart Highway Development was held at the China Optics Valley Convention & Exhibition Center (COVCEC) in Wuhan. The



Participants at the Engineering Science and Technology Forum on Smart Highway Development
Photo credit: Official website of WTC

forum featured academicians and experts who were members of the Smart Highway Development Strategy project launched by the Chinese Academy of Engineering (CAE) in 2022. They conducted in-depth discussions on various aspects of smart highways including their features, goals, approaches, tasks, trends, and applications. The aim was to develop strategies that would ensure the healthy and sustainable development of the sector.

At the forum, Weng Mengyong, Chairman of the China Highway & Transportation Society (CHTS) and former Vice Minister of Transport, delivered a presentation titled “Reflections on Several Issues of Smart Highway Development Strategy.” He stressed the importance of implementing strategies gradually, setting up clear standards and guidelines, creating demonstration areas, promoting collabora-

tion and innovation, and ultimately constructing a smart highway system that is safe, efficient, innovative, and sustainable.

In his presentation titled “New Energy Vehicle Internet of Vehicles Big Data Platform Technology and Application,” Wang Zhenpo, Director of the National Engineering Research Center of Electric Vehicles at the Beijing Institute of Technology, shed light on the current state and emerging obstacles in the new energy vehicle industry. He also delved into the fundamental technologies driving the big data platform for new energy vehicles, emphasizing the innovative features and the positive impact they have demonstrated.

(Source: Official website of WTC)

International Students Forum of WTC2023 recap



Student participants on stage with Zhang Wei, Dean of the International Education School at Chang'an University
Photo credit: Official website of WTC

The International Students Forum of WTC2023 took place on June 16 with the theme “Interconnection, Development.” Seven international students from prestigious universities including Southeast Universi-

ty, Zhejiang University, and Chang'an University delivered presentations there.

Liu Wenjie, Secretary-General of the WTC Executive Committee, Vice President and Secretary-General of China Highway & Transportation Society (CHTS), and Vice President of the International Road Federation (IRF), highlighted how the WTC is a collaborative effort between China and the global community in his speech. Its main goal is to promote cooperation and exchange among international transportation professionals. China's transportation industry has greatly benefited from adopting advanced construction and management practices from neighboring countries over the past two decades. Liu expressed hope that the forum would provide a platform for students to learn from each other, establish friendships, and foster cooperation. He also encouraged students

from different countries to come together and contribute to the building of a global community of shared future.

Presentations covered various topics such as real-time density monitoring of in-situ asphalt layer construction using intelligent compaction technology, velocity profile and safety evaluation based on microscopic behavioral data, a study of non-uniform settlement of the N-120 National Roadbed in Sindh Province, Pakistan, the latest innovations in digital twin technology, durability performance of second-order hierarchical honeycomb with structural unit rearrangement, a study on multi-parameter microfluidic particle sensors, and the establishment of an asphalt pavement interface shear strength prediction model based on the random forest algorithm.

The WTC International Students Forum plays an important role in

advancing international student education in the transportation sector. It helps develop talented individuals and supports research among students from different countries. It also encourages academic exchange and cooperation in transportation science and technology worldwide. Additionally, it contributes to the overall progress of the transportation sector.

(Source: Official website of WTC)

Awards Ceremony for 2023 World Footbridge Award held during WTC2023

The Awards Ceremony for the 2023 World Footbridge Award took place on June 17. It showcased cutting-edge technologies that revolutionize transportation practices and propel people towards a future of enhanced living.

The World Footbridge Award, launched in 2019 and organized by



Group photo of the 2023 World Footbridge Award recipients
Photo credit: Official website of WTC

the WTC Executive Committee, is a biennial global recognition that celebrates exceptional construction, design, and engineering companies and individuals who bring architectural plans to life. Since its inception, the award has received an enthusiastic response both nationally and internationally. Participants from

countries such as the United States, Germany, Italy, and Spain have also submitted projects for consideration alongside their Chinese counterparts. In 2023, a total of 26 submissions were carefully evaluated by the judging panel, resulting in the presentation of one gold medal, two silver medals, and three bronze medals.

(Source: Official website of WTC)

Past WTC Events



Photo credit: Official website of WTC

• WTC2017 •



The 2017 World Transport Convention took place in Beijing from June 3 to 6, 2017. It attracted nearly 4,000 participants from more than 40 countries and regions. The event featured various presentations, exhibitions, and competitions. Its main goal was to promote the sharing and spread of the latest scientific research and technological advancements in transportation. The convention also hosted the Belt and Road Roundtable Meeting for International Transport Cooperation.

◀ Opening ceremony of WTC2017
Photo credit: Official website of WTC

• WTC2018 •

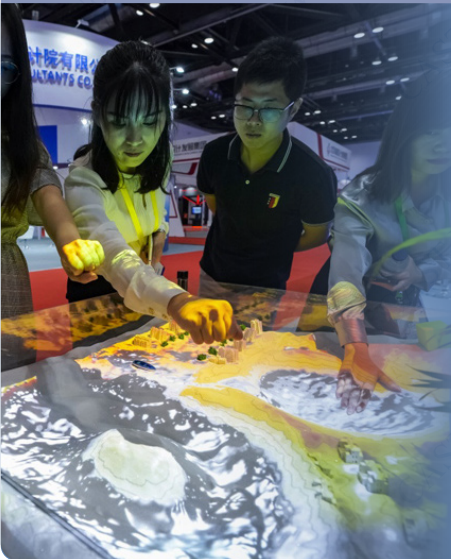
The 2018 World Transport Convention was held in Beijing from June 18 to 21, 2018, under the theme “Better Transport, Better World.” The event featured a wide range of academic presentations, exhibitions, press conferences, and awards ceremonies. At the convention, three important reports were released: *China Transportation 2017*, *China Green Highway Development Report*, and *China Highway Maintenance and Development Report*. Additionally, two influential industry standards were introduced.



Opening ceremony of WTC2018
Photo credit: Official website of WTC

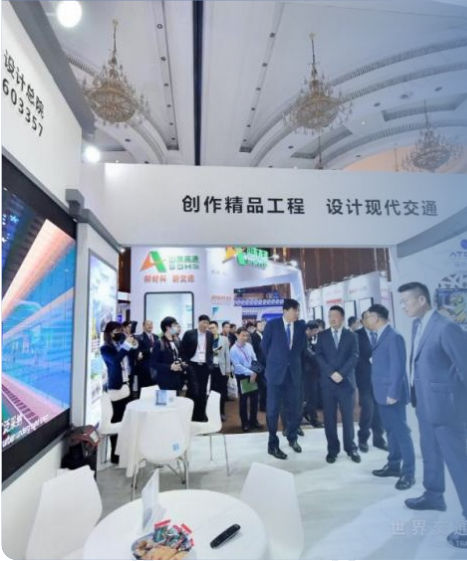
• WTC2019 •

The 2019 World Transport Convention took place in Beijing from June 13 to 16, 2019. The convention adopted the *Belt and Road Green Transport Development Action Plan*. It also expanded its network by signing membership framework agreements with 15 institutions and organizations from 10 countries. Various awards ceremonies were held including the live finals and the awards ceremony for the 2019 World University Students' Bridge Design Competition, the awards ceremony for the first World Footbridge Award, and the awards ceremony for the inaugural BIM Engineering Innovation Award. Additionally, nearly 20 think tank reports including the *China Transportation 2018* were unveiled.



Opening ceremony of WTC2019
Photo credit: Official website of WTC

• WTC2020 •



The World Transport Convention Chengdu Forum took place in Sichuan Province from November 8 to 10, 2020. It was the first time the convention was held outside Beijing. The event successfully promoted academic exchange and provided support for local transportation development. At the convention, the China Highway & Transportation Society (CHTS) announced the release of 10 industry standards, including the *2020 White Paper on Transportation Blockchain*, the *Management Service Guideline for Comfortable Expressway*, the *Inspection and Evaluation Criteria for Steel Structure Production and Installation of Highway Suspension Bridge and Cable-Stayed Bridge*, and the *Technical Guideline for Highway Application of Basalt Fiber and Its Composite Reinforced Concrete Pavement*.

Exhibition honoring renowned nuclear physicist Zhu Guangya at the China Science and Technology Museum in Beijing
Photo credit: Official WeChat account of KEXIE-GAIGEJINXINGSHI

• WTC2021 •

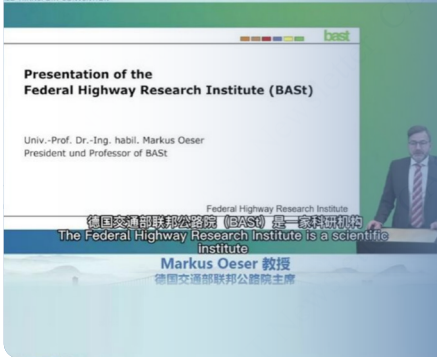
The 2021 World Transport Convention was held in Xi'an, Shaanxi Province, from June 15 to 18, 2021, under the theme "New Technologies, New Modes, and New Transport." It featured 124 academic forums, 132 poster sessions, and the live finals of the World University Students' Bridge Design Competition. Moreover, the convention held over 20 press conferences for new research reports, standards, and products and released the *Study Report on Technical Development Roadmap for Collaborative Automated Driving* and other publications.



Belt and Road International Transport Symposium (BRITS) of WTC2021
Photo credit: Official website of WTC

• WTC2022 •

2022 世界交通运输大会
11th TRANSPORT CONVENTION



The 2022 World Transport Convention was held virtually from November 29 to December 3, 2022. Themed “Innovation - Low Carbon - Cycling - Sharing - More Sustainable Transport,” it featured one keynote session, 13 thematic forums, and 170 specialized forums. The thematic forums invited over 20 international well-known experts who interacted with participants from around the world through online presentations. Notably, the International Transportation and Logistics Forum and the Technology Forum of Submerged Floating Tunnel gained significant attention from the global transportation community.

Professor Markus Oeser, President of the Federal Highway Research Institute (BAST), making an online presentation
Photo credit: Official website of WTC

(Sources: Official website of WTC and cn.chinadaily.com.cn)

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CAST is the largest non-governmental organization of scientific and technological professionals in the world. Through its 215 member societies and local branches all over the country, CAST maintains close ties with millions of Chinese scientists, engineers, and other professionals working in fields of science and technology.

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