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Preface

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Abstract: With the development of smart technology and sustainable materials, civil and hydraulic engineering is developing rapidly. Innovations in automation and eco-design are shaping the future of resilient, efficient infrastructure. At the same time, civil and hydraulic engineering drives the development of modern infrastructure, integrating smart technologies and sustainable solutions. As a key enabler, intelligent construction management ensures the effective integration of digital technologies, fostering compliance and maximizing value in engineering projects. CHEIC 2024 serves as a global platform for researchers, engineers, and industry leaders to share breakthroughs in civil and hydraulic modeling, intelligent design, green materials, and automated construction. This conference aims to bridge academia and industry, promoting knowledge exchange and international partnerships to accelerate the adoption of smart, sustainable engineering practices worldwide.

Keywords: civil engineering; hydraulic engineering; intelligent construction; modern infrastructure; intelligent design

1. Conference introduction

International Conference on Civil, Hydraulic Engineering and Intelligent Construction (CHEIC) was successfully held from July 22 to 25, 2024, in Changsha, China. The conference was jointly organized by AcademiCenter. The event primarily focused on civil, hydraulic engineering and intelligent construction.

There were 13 keynote speakers for CHEIC. Their presentations shared new advances in civil, hydraulic engineering and intelligent construction. Over 50 scholars from different universities participated in the symposium by submitting papers and presenting their research, engaging in active discussions and exchanges. The evolution of civil and hydraulic engineering spans across historical eras, intelligent construction is the harmonious amalgamation of contemporary information technology and construction. They mirror the progress in science and technology.

1.1. Scope of this conference and keynote talk list

International Conference on Civil, Hydraulic Engineering and Intelligent Construction (CHEIC) invites researchers, scholars, practitioners, and industry professionals to participate in a comprehensive exploration of applied technical innovation and management across various domains. The scope of CHEIC encompasses, but is not limited to, the following areas:

- Geotechnical Engineering



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- Structural Engineering
- Geological Engineering
- Seismic Engineering
- Railway Engineering
- Highway Engineering
- River&Coastal Engineering
- Port and Waterway Engineering
- Smart construction
- Intelligent Construction
- Intelligent design
- Intelligent equipment
- Man-machine collaboration
- Intelligent construction system development and application practice
- Green construction technology and intelligence
- Intelligent construction equipment and robots

1.2. Peer review statement

All papers published in the proceedings were presented at the CHEIC, held from July 22 to 25, 2024, China. By submitting the proceedings, the proceedings editors certify that:

- The review process was managed by the proceedings editors to maintain high professional and scientific standards and took all reasonable steps to ensure the quality and integrity of the publication. Reviews were conducted by expert referees, who provided unbiased and constructive feedback aimed at improving the quality of the submissions.
- The final decisions on acceptance or rejection were made solely by the proceedings editors based on the merits of the work and its relevance to the conference

Proceedings editors:

Prof. Bing Liu, Guilin University of Technology, China

Type of review: single-blind review

Number of submissions received: 10

Number of submissions accepted: 5

Number of reviews received: 20

Number of reviewers: 10

Average number of reviews per paper: 2

2. Organization

2.1. General Chair

Prof. Lu Chen, Huazhong University of Science and Technology, China

2.2. Co-Chairs

Prof. Wei Ge, Zhengzhou University, China

2.3. Conference committee

Technical Chairs

Prof. Filipe Afonso, University of Saint Joseph, Macao SAR, China

Assis. Prof. Lisaia Daria, Shenzhen University, China

Program Chairs

Prof. Zhixiang Zhou, Shenzhen University, China

Technical Program Committee

Prof. Helin Fu, Central South University, China

Prof. Jiang He, Guangxi University, China

Prof. Yifeng Zhong, Chongqing University, China

Prof. Hongxia Qiao, Lanzhou University of Technology, China

Prof. Minjuan He, Tongji University, China

Prof. Dahai Huang, Beihang University, China

Prof. Shihu Shu, Donghua University, China

Prof. Binglin Guo, Hefei University of Technology, China

Prof. Jianbin Lv, Guangdong University of Technology, China

Prof. Guangchen Sun, Central South University of Forestry and Technology, China

Prof. Shujie Wen, Jiangxi University of Science and Technology, China

Assoc. Prof. Yunsi Liu, Hunan University of Science and Technology, China

Assoc. Prof. Zhen Huang, Guangxi University, China

Assoc. Prof. Xin Tan, Hunan University, China

Assoc. Prof. Jie Zhong, Sichuan University, China

Assoc. Prof. Chuhan Deng, Tianjin University, China

Assoc. Prof. Niannian Fan, Sichuan University, China

Assoc. Prof. Yinghai Li, China Three Gorges University, China

Assoc. Prof. Malik Adeel Umer, National University of Sciences and Technology, Pakistan

Assist. Prof. H Laldintluanga, Mizoram University, India

Dr. Asim Farooq, Pak-Austria Fachhochschule Institute of Applied Sciences and Technology, Pakistan

Dr. Tran Nguyen Hoang Hung, Ho Chi Minh City University of Technology, Viet Nam

Dr. Yang Jian, Shenzhen University, China

Acknowledgments

International Conference on Civil, Hydraulic Engineering and Intelligent Construction (CHEIC) would like to express sincere gratitude to all those who contributed to the success of this conference. We extend our deepest appreciation to AcademiCenter for their generous support in hosting this event. We are also

profoundly grateful to all the scholars for their active engagement, insightful discussions, and high-quality research contributions, which greatly enriched the conference. Additionally, we extend our appreciation to the TPC members and reviewers of the conference, whose diligent efforts ensured the high quality and rigor of the papers. Our heartfelt thanks also go to the distinguished speakers for delivering inspiring presentations that stimulated thought-provoking discussions. Last but not least, we appreciate our publisher for their support in disseminating the conference proceedings, helping share the presented knowledge far and wide.