



Journal of Materials and Engineering Structures

Preface for special issue of the International Conference on Sustainability in Civil Engineering (ICSCE 2020)

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The year 2020 has been a difficult one for most of us; the coronavirus pandemic has not only affected our health and sanity, but has also had a lasting impact on our lives. Now as we enter the year 2021, the Journal of Materials and Engineering Structures (JMES) would like to wish you all a very happy and prosperous New Year. We appreciate the contributions and support from around the world to develop and improve JMES publications. We have received the complete trust and gratitude of the authors in the research communities; we promise to do the best we can not only to maintain the scientific excellence of JMES, but also to continue work to improve the best publication practices.

This special issue of Journal of Materials and Engineering Structures (JMES) includes manuscripts of some of the presentations at the third International Conference on Sustainability in Civil Engineering (ICSCE 2020), held during 26-27 November, 2020 at Hanoi, Vietnam. We believe that all the papers published in this special issue will be an opportunity for researchers to present recent works on Sustainability in Civil Engineering field.

The International Conference on Sustainability in Civil Engineering is very significant to the development of new ideas and the promotion of research into advanced in Sustainability in Civil Engineering field. ICSCE 2020 received more than 200 abstracts and 135 full paper were submitted and 23 were selected for publishing, from all over the world have been rigorously reviewed before being accepted for this special issue. According to their subject and their merit by professionals, twenty three of the best papers presented at the ICSCE 2020 Conference are included in the issue, from six different countries (Vietnam, Japan, Portugal, China, Australia and Malaysia).

The two first papers are keynote speakers. The first paper aims to improve the use of recycled aggregates prepared using the aggregate replacement method, reducing both the environmental burden and costs associated with concrete waste. The second paper gives a focus on the recent developments on the assessment and forecasting the performance of bridge and other structures including an overview of the different types of structures, especially those related to transportation infrastructure.

Some papers deal with the subject of durability relating to different themes of civil engineering, such as the performance of concrete reinforced with FRP, Properties of polymer concrete used for repairing portland cement and recycled concrete aggregate by cement.

Other topics, as important as they are diverse are also discussed in this issue such as prestressed concrete, steel corrosion, asphalt pavement,...

We would like to thank all the authors who contributed to this special issue. Below you will find important information on the Third International Conference on Sustainability in Civil Engineering, such as the purpose and scope and the main themes of ICSCE 2020.

1 History of the ICSCE (First, second and the third version)

1.1 *The first International Conference on Sustainability in Civil Engineering (ICSCE 2016)*

ICSCE 2016 was held on November 26-27th, 2016 in Hanoi, Vietnam. The conference welcomes papers in the aspects of Sustainability in Civil Engineering, especially concerning the following topics but not limited included sustainability on material and resources, construction management, planning and development of infrastructures, planning and development transport structures, and River, Estuary, and Coastal Engineering. The LOC of ICSCE 2016 received 105 abstracts and 80 full papers and posters from 9 countries and regions. The ICSCE 2016 received 6 keynote speakers from Hohai University - China, AIT - Thailand, Auburn University – USA, Tokyo Metropolitan University (TMU) – Japan, Nantes University, France, and Thuy Loi University – Vietnam. The conference welcomed 150 participants.

1.2 *The second International Conference on Sustainability in Civil Engineering (ICSCE 2018)*

ICSCE 2018 was held at University of Transport and Communications, Hanoi Vietnam on 24-25th November 2018. The theme of this conference is "Building an Ecosystem of Living".

The LOC of ICSCE 2018 received 143 abstracts from 13 countries and regions. Finally, LOC selected 82 full papers after peer-reviewed to accepted for publication in the conference proceeding and 8 posters for the exhibition. The conference welcomed 170 participants.

The ICSCE 2018 had 6 keynote speakers from KU Leuven-Belgium, Hohai University - China, Ruhr University Bochum-Germany, Kyoto University - Japan, and Auburn University - USA.

The conference divided into 5 sessions as following: Geotechnical Engineering; Water Resource, River, Estuary, and Coastal Engineering; Transportation, Infrastructure Development & Planning; Construction Materials and Bridges and Structures.

1.3 *The third International Conference on Sustainability in Civil Engineering (ICSCE 2020)*

ICSCE 2020 was held at University of Transport and Communications, Hanoi Vietnam on 26-27th November 2020. The theme of this conference is "Building an Ecosystem of Living". The ICSCE 2020 conferences have been established as the top scientific events in the area of sustainable civil engineering and are highly-anticipated bi-annually by the international civil engineering community.

The Local Organizing Committee received more than 200 abstracts and 135 full papers were submitted and 124 were selected for publishing. In this special issue 25 high quality papers were selected to be published in Journal of Materials and Engineering Structures.

The ICSCE 2020 invited 7 keynote speakers from USA, Portugal, Japan, Singapore, Korea, China. They are internationally recognized experts in their field, promising delegates an exciting and challenging program.

2 Aim and scope of the ICSCE

The third International Conference on Sustainability in Civil Engineering (ICSCE 2020) will be continually held in Hanoi, Vietnam with the theme of this conference is "Building a Green Infrastructure for Living". The conference will bring together the key players in the sector from around the globe. We hope that our Conference will offer a unique opportunity for interesting and fruitful interactions to all participants, providing them with memorable and pleasant experiences.

3 Main topics of the conference

- Materials for construction
- Construction Engineering and Management
- Pavement Engineering
- Bridge and Highway Engineering

- Railway Engineering
- River, Estuary and Coastal Hydrodynamic and Engineering
- Geotechnical Engineering
- Water Resource Engineering
- Survey and Geographic Information System Engineering
- Environment Engineering
- Traffic, Transportation and Logistics Engineering
- Smart and Sustainable Cities
- Building Information Modeling
- Artificial Intelligence in Civil Engineering
- Mechanical and Automation in Civil Engineering
- Intelligent Transportation System
- Structural Engineering
- Structural Damage Detection and Health Monitoring
- Other related topics in Civil Engineering

4 List of the international scientific committee members

4.1 ICSC 2020 International Scientific Committee - Chair and Co-Chair

Prof. Nguyen Ngoc Long, University of Transport and Communications, Vietnam

Prof. Guido De Roeck, KU Leuven, Belgium

Prof. Matt Evans, Oregon State University, USA

Prof. Yasuhiro Dosho, Meijo University, Japan

Prof. Jinhai Zheng, Hohai University, China

Prof. Yasuyuki Nakagawa, Kyushu University, Japan

Prof. Jose Campos e Matos, Universidade do Minho, Portugal

Prof. Sang - Woong Lee, Gachon University, Korea

Prof. Cheong Siew Ann, Nanyang Technological University, Singapore

Prof. Nasser Khalili, University of New South Wales, Australia

4.2 Scientific Members

Prof. Anand J. Puppala, Texas A&M University, USA

Prof. Günther Meschke, Ruhr University Bochum, Germany

Prof. Hajime Mase, Kyoto University, Japan

Prof. Farid Asma, Mouloud Mammeri University of Tizi-Ouzou, Algeria

Prof. Hocine Hammoum, Mouloud Mammeri University, Algeria

Prof. Shimizu Norikazu, Yamaguchi University, Japan

Prof. Tatsunori Matsumoto, Kanazawa University, Japan

Prof. Torsten Schlurmann, Leibniz University Hannover, Germany
Prof. Watabe Yoichi, Hokkaido University, Japan
Prof. Yakun Guo, University of Bradford, UK
Prof. Zhang Jisheng, Hohai University, China
Prof. Zoubir Mehdi SBARTAÏ, Université de Bordeaux, France
Prof. Takeshi Katsumi, Kyoto University, Japan
Prof. Tran Hoai Nam, Auburn University, USA
Prof. MagdAbdelWahab, Gent University, Belgium
Prof. Zhang Chi, Hohai University, China
Assoc. Prof. Pham Huy Giao, Asian Institute of Technology, Thailand
Dr. Nguyen Anh Minh, ODE – DORIS Group Company, UK
Dr. Nguyen Mai Lan, IFSTTAR, Nantes, France
Dr. Nguyen Minh Hai, University of Texas at Arlington, USA
Dr. Samir Khatir, Gent University, Belgium
Dr. Tang Anh Minh, Ecole des Ponts ParisTech, France
Dr. Trinh Viet Nam, Egis Rail - Groupe Egis, France
Dr. Ho Manh Hung, Bentley, Singapore

4.3 Local Organizing Committee (LOC)

Assoc. Prof. Bui Tien Thanh, University of Transport and Communications, Vietnam (Chair)
Assoc. Prof. Nguyen Viet Thanh, University of Transport and Communications, Vietnam (Co-Chair)
Dr. Nguyen Xuan Tung, University of Transport and Communications, Vietnam, Co-Chair
Assoc. Prof. Nguyen Duy Tien, University of Transport and Communications, Vietnam
Assoc. Prof. Nguyen Thi Tuyet Trinh, University of Transport and Communications, Vietnam
Assoc. Prof. Do Anh Tu, University of Transport and Communications, Vietnam
Assoc. Prof. Nguyen Chau Lan, University of Transport and Communications, Vietnam
Dr. Bui Ngoc Dung, University of Transport and Communications, Vietnam
Dr. Dang Minh Tan, University of Transport and Communications, Vietnam

4.4 Secretariat

Dr. Nguyen Quang Tuan, University of Transport and Communications (Chair)
Assoc. Prof. Tran Thu Hang, University of Transport and Communications
Dr. Dang Hong Lam, Geotechnics Section, UTC
Dr. Ta Duy Hien, Section of Structural Mechanics, UTC
Dr. Tran Anh Tuan, Bridge and Tunnel Engineering Section, UTC
Dr. Le Van Hien, Geodesy Section, UTC

Dr. Mai Quang Huy, Hydraulics and Hydrography Section, UTC
Dr. Vu Ngoc Linh, Mechanics of Material, UTC
Dr. Pham Van Phe, Section of Structural Mechanics, UTC
Dr. Nguyen Trong Hiep, Section of Highway and Airfield Engineering, UTC
Dr. Le Vinh An, Highway Engineering Section, UTC
Msc. Tran Ngoc Hoa, Bridge and Tunnel Section, UTC
Msc. Nguyen Ngoc Lan, Bridge and Tunnel Section, UTC
Msc. Nguyen Thi Mai Anh, Accounting Department, UTC
Msc. Nguyen Thanh Minh, Administration section, UTC
Msc. Pham Phuong Thao, Administration section, UTC

4.5 Advisory Committee Members

Prof. Bui Xuan Cay, Highway Section, UTC
Prof. Pham Huy Khang, Highway and Airfield Engineering, UTC
Prof. Tran Duc Nhiem, Bridge and Tunnel Section, UTC
Prof. Pham Van Ky, Railway Section, UTC
Assoc. Prof. La Van Cham, Highway Section, UTC
Assoc. Prof. Le Hai Ha, Railway Section, UTC
Assoc. Prof. Nguyen Quang Phuc, Highway Section, UTC
Assoc. Prof. Hoang Ha, Urban Transport and Marine-Coastal Engineering Section, UTC
Assoc. Prof. Tran The Truyen, Bridge and Tunnel Section, UTC
Assoc. Prof. Luong Xuan Binh, Mechanics of Material, UTC
Assoc. Prof. Ho Anh Cuong, Transport-Public Works and Environment Section, UTC
Assoc. Prof. Ho Lan Huong, Geodesy Section, UTC
Assoc. Prof. Ngo Van Minh, Bridge and Tunnel Section, UTC
Assoc. Prof. Nguyen Trung Kien, Structural Mechanics Section, UTC
Assoc. Prof. Pham Hoang Kien, Informatics in Civil Engineering, UTC
Dr. Tong Anh Tuan, Hydraulics and Hydrography Section, UTC
Dr. Phung Duc Long, VSSMGE
Assoc. Prof. NGUYEN Thanh Sang, Section of Building Materials, UTC
Assoc. Prof. NGUYEN Xuan Huy, Section of Structural Engineering, UTC

4.6 Scientific Committee Members of the selected papers of this special issue

Assoc. Prof. Dr. Thanh Bui-Tien, University of Transport and Communications, Hanoi Vietnam
Assoc. Prof. Dr. Nguyen Viet Thanh, University of Transport and Communications, Hanoi Vietnam
Dr. Nguyen Xuan Tung, University of Transport and Communications, Hanoi Vietnam
Dr. Nguyen Quang Tuan, University of Transport and Communications, Hanoi Vietnam

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