

**Annual General Meeting Report of
Hong Kong Society of Theoretical and Applied Mechanics
April 13, 2019**

1 Main Activities (Since April 2018)

1.1 Distinguished Lectures

There were three Distinguished Lectures before the HKSTAM conference, and another five Distinguished Lectures are organized in the HKSTAM annual conference. Therefore, a total of **8 Distinguished Lectures** were organized in this year.

The three Distinguished Lectures organized before the HKSTAM conference are:

1. Distinguished Lecture 1 by Prof. Yeong-Bin Yang (Member, Chinese Academy of Engineering; Foreign Member, Austrian Academy of Sciences; Honorary Dean of Civil Engineering, Chongqing University; Professor Emeritus, National Taiwan University) on 9 July 2018 (Joint seminar with HKUST CIVL)
2. Distinguished Lecture 2 by Prof. Feng Jin (Changjiang Chair Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China) on 9 July 2018 (Joint seminar with HKUST CIVL)
3. Distinguished Lecture 3 by Associate Professor Ching Tai NG (School of Civil, Environmental and Mining Engineering, Faculty of Engineering, Computer and Mathematical Sciences, The University of Adelaide) on 27 February 2019

Please find detail report of each lecture in the following sub-sections.

1.1.1 Distinguished Lecture 1: Vehicle Scanning Method for Bridges (Prof. Yeong-Bin Yang)

Prof. Yeong-Bin Yang is currently Honorary Dean of Civil Engineering, Chongqing University. He is Member, Chinese Academy of Engineering; Foreign Member, Austrian Academy of Sciences; and Professor Emeritus, National Taiwan University. The seminar started at 10:00am on 9 July 2018 (Monday) in LT-E of HKUST. The seminar was chaired by Dr Wang Gang, and there were over **60 participants**. The seminar was well organized and informative. There were a lot of discussions after the presentation.

The lecture is mainly about the idea of extracting bridge frequencies from the dynamic response of a moving test vehicle and verified the technique by a field test, which was later extended to the construction of mode shapes and damage identification of bridges. This technique was grossly referred to as the indirect method for bridge measurement, since it requires no vibration sensors to be installed on the bridge, but a small number of vibration sensors mounted on the test vehicle. When compared with the conventional direct method that relies fully on the response of the bridge fitted with vibration sensors and data acquisition system, the advantage of the indirect method is obvious: mobility, economy, and efficiency.

Figure 1 shows a photo about a tour after the seminar. HKSTAM EC members, Dr Wang Gang (left) and Dr Huang Duruo (right), are accompanying Prof YB Yang (middle).



Figure 1: Distinguished Lecture 1 by Prof Yeong-Bin Yang.

1.1.2 Distinguished Lecture 2: Rock-filled Concrete Technology: Innovation and Application in Dam Engineering (Prof. Feng Jin)

Prof. Feng Jin is Changjiang Chair Professor, Department of Hydraulic Engineering, Tsinghua University, Beijing, China. The seminar started at 11:00am on 9 July 2018 (Monday) in LT-E, HKUST. The seminar was chaired by Dr. Wang Gang. There were over **60 participants**.

Rock-Filled Concrete (RFC) technology is an innovative, sustainable mass concrete technology invented by Prof. Jin and his colleagues in Tsinghua University. RFC can be formed by pouring self-compacted concrete onto the surface of an assembly of large rocks, called “rockfill”. Since 2005, more than 70 dams have been constructed or under-constructed using this technology. In this lecture, Prof. Jin introduced the invention, research innovation and engineering application of this technology.

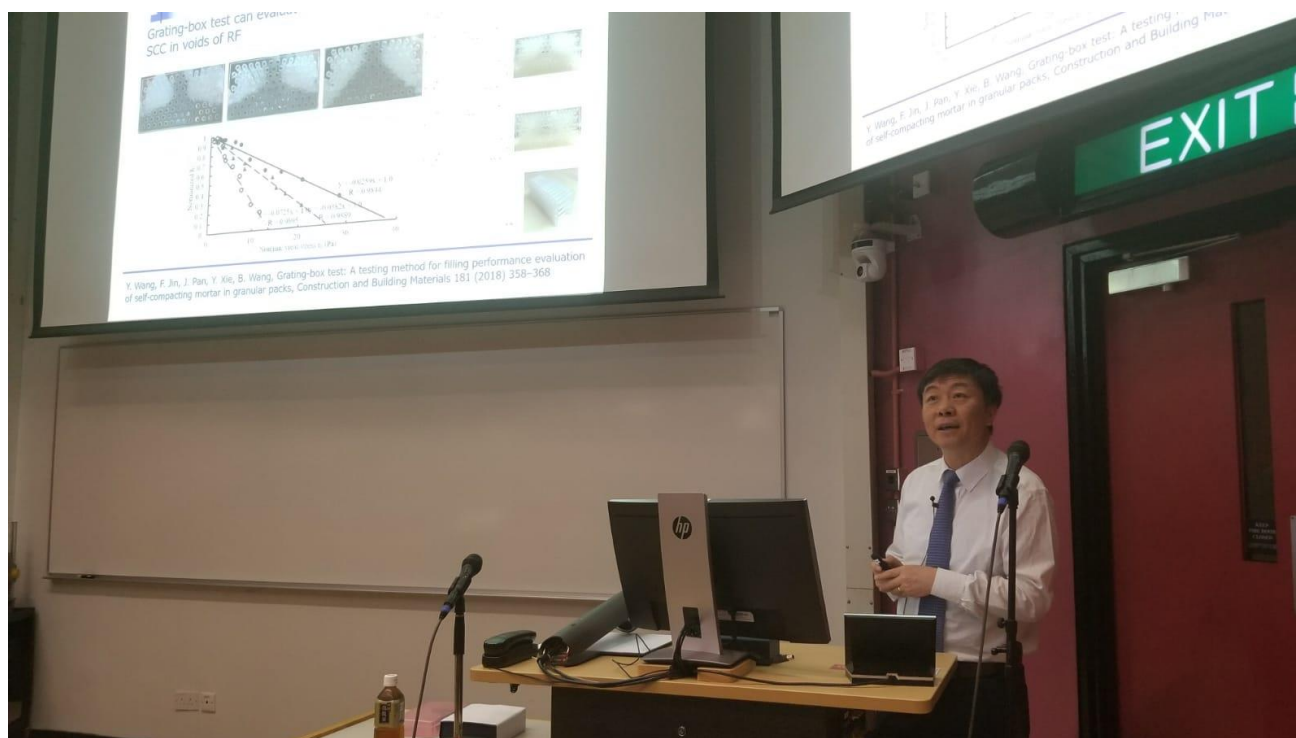


Figure 2: Distinguished Lecture 2 by Prof Feng Jin.

1.1.3 Distinguished Lecture 3: Structural Safety Inspection using Linear and Nonlinear Guided Waves (Associate Professor Ching Tai NG)

Associate Professor Ching Tai NG is from School of Civil, Environmental and Mining Engineering, Faculty of Engineering, Computer and Mathematical Sciences, The University of Adelaide. The seminar started at 2:00pm on 27 February 2019 (Wednesday) in Room Room 6606, Li Dak Sum Yip Yio Chin A Building, CityU. The seminar was chaired by Dr Paul Lam. There were more than **30 participants** in the seminar. The discussion was very enthusiastic.

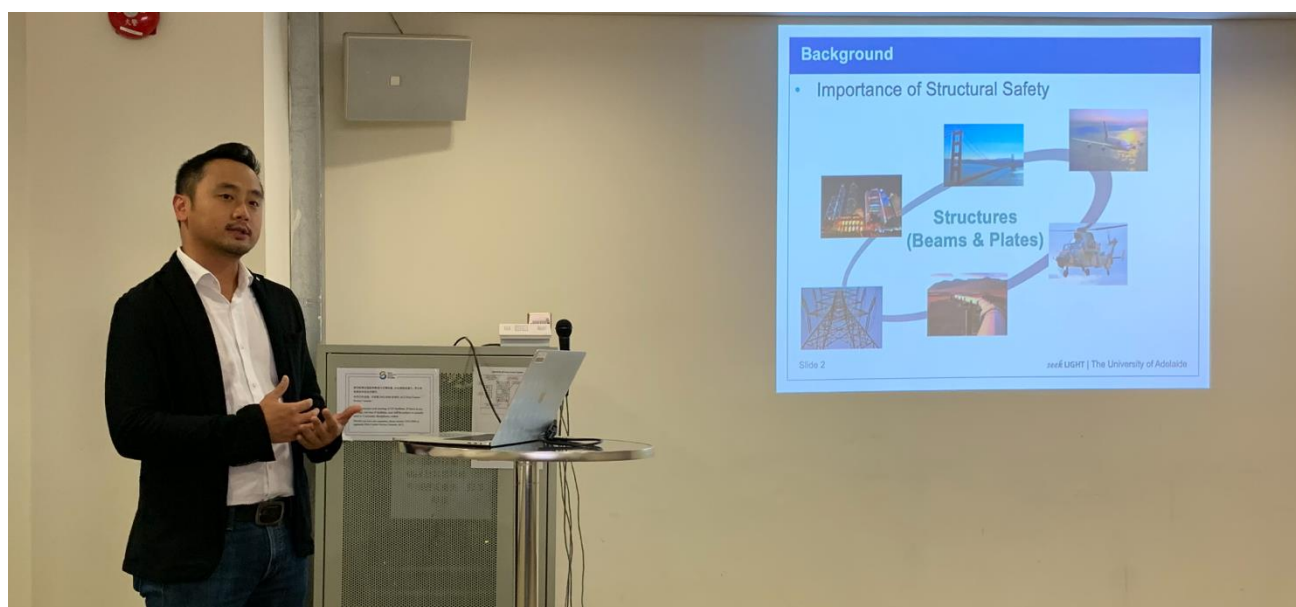


Figure 3: Distinguished Lecture 3 by Associate Professor Ching Tai NG.

1.2 HKSTAM Annual Conference

The 23rd Annual Conference of HKSTAM 2019 is organized in conjunction with the 15th Jiangsu-Hong Kong Forum on Mechanics and Its Application. The conference was held on April 13, 2019, Saturday, at the Hong Kong University of Science and Technology (HKUST). The conference aims to provide a platform for all scientists, engineers, and mathematicians working on mechanics and related areas to share, communicate and exchange ideas, and to enhance co-operations within relevant parties.

There are 5 Distinguished Lectures in the morning session and 61 presentations in 12 parallel sessions (A1 to F1 and A2 to F2). 31 out of 61 presentations are for the best student presentation awards (a total of 6 awards were presented).

The 5 Distinguished Lectures were offered by Prof Christopher KY Leung from Hong Kong University of Science and Technology (HKUST), Prof Qing-wen Ren from Jiangsu Society of Theoretical and Applied Mechanics (JSSTAM), Prof Ben Young from the Hong Kong Polytechnic University (PolyU), Prof Ding-guo Zhang from JSSTAM, and Prof Johnny CM Ho from Guangzhou University.

A total of **92 participants** in the conference including 14 EC members from HKSTAM, 27 JSSTAM members, 5 keynote speakers, 4 invited guests, 34 speakers from Hong Kong, Macau and Shenzhen, and 8 helpers.

1.3 International Events

1.3.1 The 25th Australasian Conference on Mechanics of Structures and Materials (ACMSM25)

HKSTAM organized a special session in the 25th Australasian Conference on Mechanics of Structures and Materials (ACMSM25) from 4 to 7 December 2018, in Brisbane, Australia. The conference was organized by the University of Queensland. The special session is “Research on Mechanics of Structures and Materials in Hong Kong” (see Figure 4). 6 papers were presented in this special session, and speakers are from Hong Kong and Macau.

1. AN EXPERIMENTAL MICROMECHANICAL STUDY ON THE SHEARING BEHAVIOR OF SOIL (Sandeep C.S., Senetakis K.)
2. DESIGN OF CRACK RESISTANT DENTAL COMPOSITE (Niu X., Ji H. and Chen B.)
3. INVESTIGATION OF FRACTURE IN GRAPHENE SHEETS BASED ON PERIDYNAMICS (Liu X.F., He X.Q., Wang J.B.)
4. EFFECT OF CARBON NANOTUBES TREATED AGGREGATES ON COMPRESSIVE STRENGTH OF CONCRETE (Zhou A., Qin R. and Lau D.)
5. TWO-DIMENSIONAL SOIL-STRUCTURE INTERFACE SHEARING CHARACTERISTICS BY DISCRETE ELEMENT METHOD (Zhou W.H. and Chen W.B.)
6. AN EFFICIENT MARKOV CHAIN MONTE CARLO METHOD FOR BAYESIAN SYSTEM IDENTIFICATION OF TOWER STRUCTURES (Yang J.H. and Lam H.F.)

Three HKSTAM EC members joined the conference, they are Dr Paul Lam, Dr Xinrui Niu and Dr Hannah Zhou. In the conference, the president of HKSTAM, Dr Paul Lam, won the Stan Shaw Best Paper Award (see Figure 5).

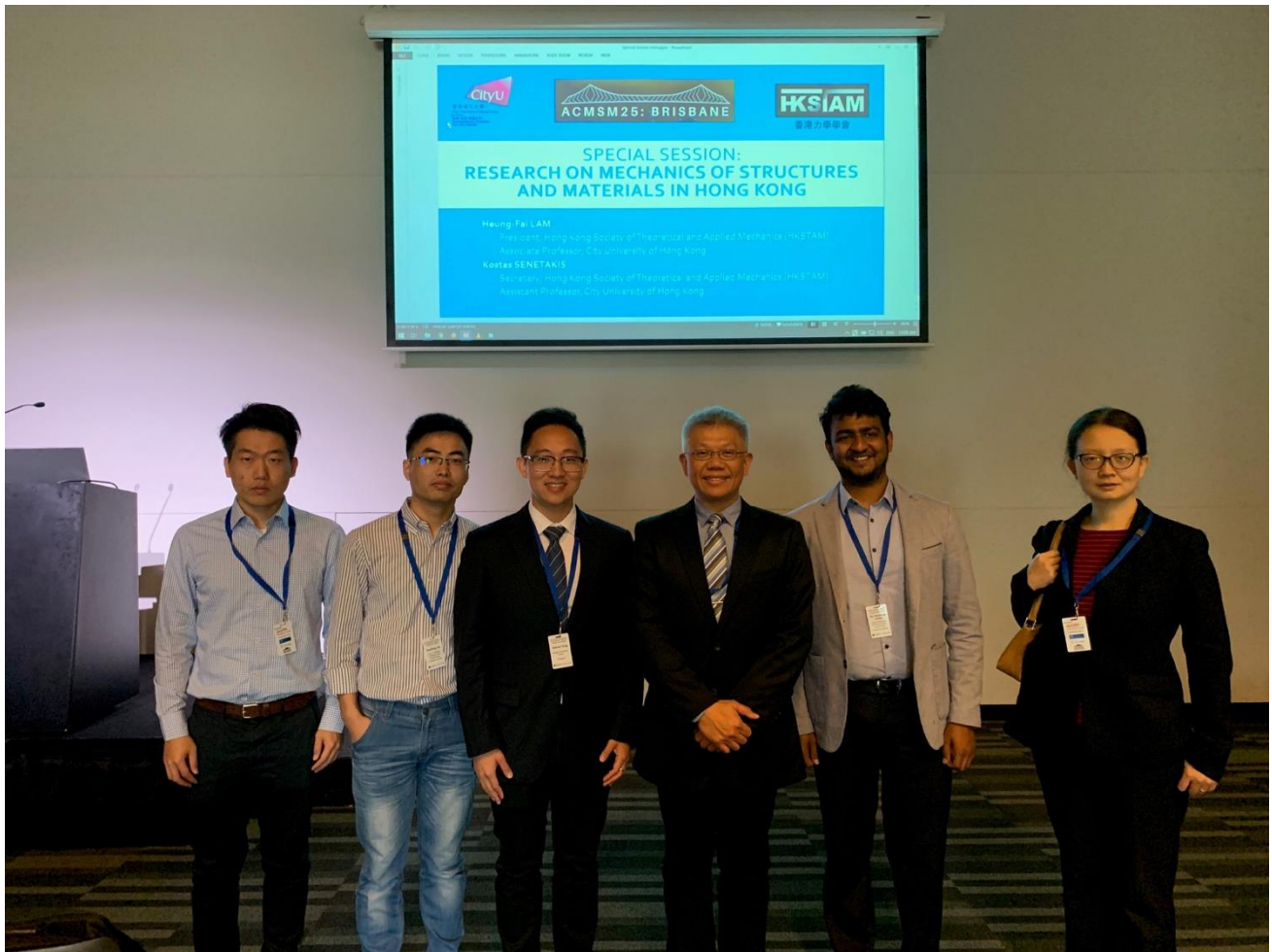


Figure 4: Speakers in the special session “Research on Mechanics of Structures and Materials in Hong Kong”.



Figure 5: HKSTAM president, Dr Paul Lam (middle) and Dr Yang JH (right) won the Stan Shaw Best Paper Award.

1.3.2 2018 Jiangsu Youth Forum on Mechanics cum 14th Jiangsu-HK Forum on Mechanics and Its Application

A HKSTAM delegation (Dr Paul Lam, Dr Wang Gang and Dr Duruo Huang) joined the 2018 Jiangsu Youth Forum on Mechanics cum 14th Jiangsu-HK Forum on Mechanics and Its Application (2018 江苏力学青年论坛 暨 第十四届苏港力学及其应用论坛) from 14 to 16 September 2018 in Yangzhou Industrial Vocational and Technical College (扬州工业职业技术学院). Dr Paul Lam gave the keynote in this conference (see Figure 6). Figure 7 shows the souvenir exchange between HKSTAM and JSSTAM.

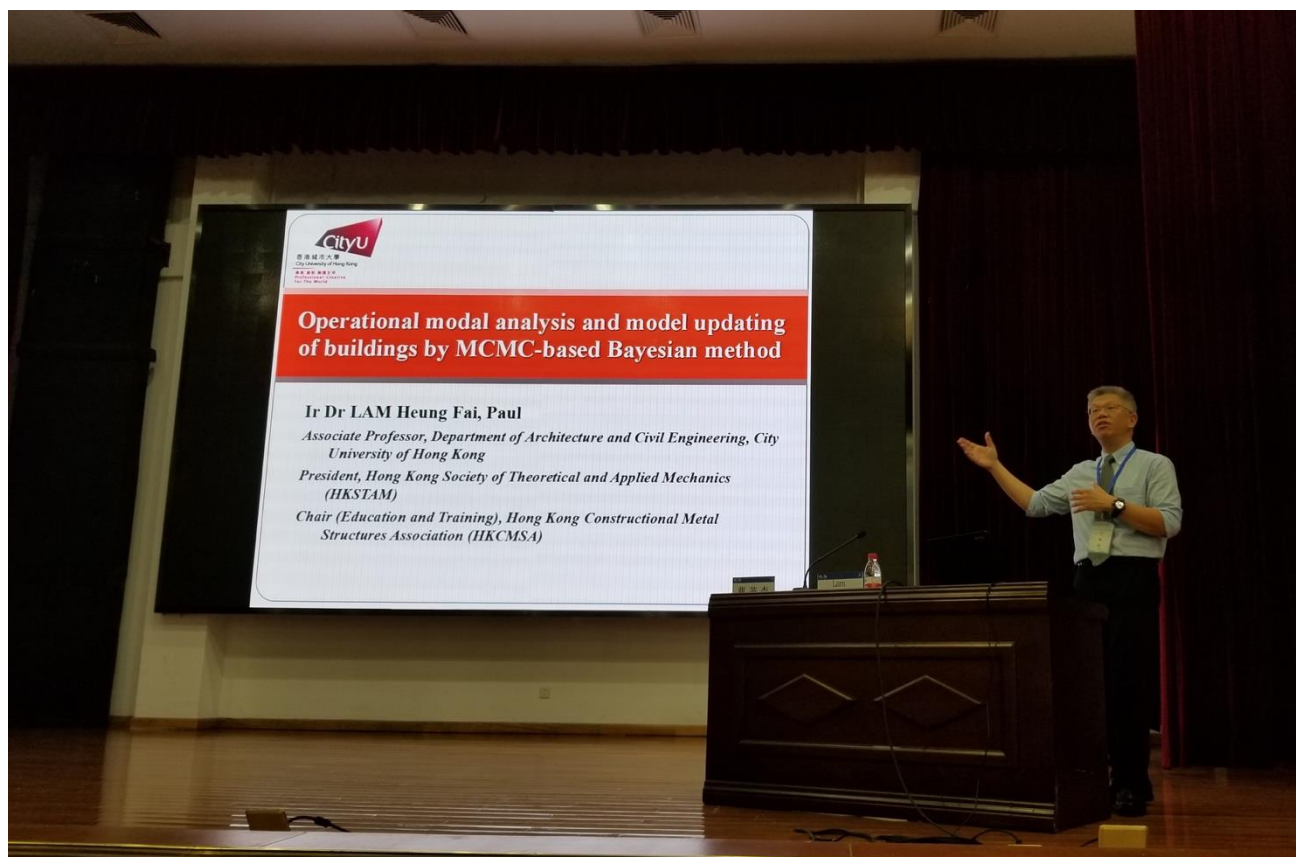


Figure 6: Keynote in the 14th Jiangsu-HK Forum on Mechanics and Its Application by Dr Paul Lam.



Figure 7: Souvenir exchange between HKSTAM and JSSTAM.

1.3.3 International Union of Theoretical and Applied Mechanics (IUTAM)

Prof. Q.P. SUN from Hong Kong University of Science and Technology continues to serve as the representative of HKSTAM in the IUTAM general assembly.

2 Current Status of HKSTAM

HKSTAM has 150 members including 40 life members. In this year, HKSTAM has 12 institutional members. They are:

1. Department of Architecture and Civil Engineering, City University of Hong Kong
2. Department of Mathematics, City University of Hong Kong
3. Department of Mechanical and Biomedical Engineering, City University of Hong Kong
4. Department of Physics and Materials Science, City University of Hong Kong
5. Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University
6. Department of Mechanical Engineering, The Hong Kong Polytechnic University
7. Department of Applied Mathematics, The Hong Kong Polytechnic University
8. Department of Mechanical Engineering, The University of Hong Kong
9. Department of Civil and Environmental Engineering, The Hong Kong University of Science and Technology
10. Department of Mechanical and Aerospace Engineering, The Hong Kong University of Science and Technology
11. Department of Civil and Environmental Engineering, University of Macau
12. Department of Electromechanical Engineering, University of Macau

3 Plan for Next Year

1. Basic activities:
 - a. A total of 8 Distinguished Lectures (including 5 in the next annual conference)
 - b. HKSTAM annual conference
2. Promote HKSTAM and attract more members (full, student and institutional)
 - a. Explore the possibility to run Continuous Professional Development (CPD) Seminars for local engineers
 - b. Attract international participants to HKSTAM annual conference.
3. Provide more training to student members
 - a. Best student presentation in HKSTAM annual conference
4. Provide more opportunities to young EC members. For example, to establish the best paper award in the HKSTAM annual conference.
5. Strengthen the collaboration with other universities in Guangzhou and Shenzhen under the development of the Guangdong-Hong Kong-Macao Greater Bay Area (大灣區).

4 Executive Committee of HKSTAM for 2018-2020

In the AGM on 13 April 2019, Dr Kostas Senetakis was resigned from the secretary (become a member-at-large), and the position of secretary was replaced by Dr Xinrui Niu in the term 2019 to 2020. The table below shows the Executive Committee of HKSTAM for 2019 to 2020.

President	Dr. Paul H. F. LAM (林向暉), Department of Architecture and Civil Engineering, City University of Hong Kong (Email: paullam@cityu.edu.hk, Tel: 34427303)
Vice President	Dr. Gang WANG (王剛), Department of Civil and Environmental Engineering, Hong Kong University of Science and Technology (Email: gwang@ust.hk, Tel: 23587161)
Secretary	Dr. Xinrui NIU (牛鑫瑞), Department of Mechanical and Biomedical Engineering, City University of Hong Kong (Email: xinrui.niu@cityu.edu.hk, Tel: 34428432)
Treasurer	Dr. Shuhuai YAO (姚舒懷), Department of Mechanical Engineering, Hong Kong University of Science and Technology (Email: meshyao@ust.hk, Tel: 23587205)
Immediate Past President	Prof. Li CHENG (成利), Department of Mechanical Engineering, The Hong Kong Polytechnic University (Email: mmlcheng@polyu.edu.hk, Tel: 27666769)
Members-at-large	Dr. Konstantinos (Kostas) SENETAKIS, Department of Civil and Architectural Engineering, City University of Hong Kong (Email: ksenetak@cityu.edu.hk, Tel: 34424312)
	Dr. C. W. LIM (林志華), Department of Civil and Architectural Engineering, City University of Hong Kong (Email: bccwlim@cityu.edu.hk, Tel: 34427285)
	Dr. Y. K. LEE (李貽昆), Department of Mechanical Engineering, Hong Kong University of Science and Technology (Email: meyklee@ust.hk, Tel: 23588663)
	Dr. Zhigang LI (李志剛), Department of Mechanical Engineering, Hong Kong University of Science and Technology (Email: mezli@ust.hk, Tel: 23587186)
	Dr. Wenjing YE (葉文菁), Department of Mechanical Engineering, Hong Kong University of Science and Technology (Email: mewye@ust.hk, Tel: 23587194)
	Dr. Jidong ZHAO (趙吉東), Department of Civil and Environmental Engineering, Hong Kong University of Science and Technology (Email: jzhao@ust.hk, Tel: 23588481)
	Dr. Chih-Yung Wen (溫志湧), Department of Mechanical Engineering, The Hong Kong Polytechnic University (Email: cywen@polyu.edu.hk, Tel: 23654703)
	Dr. Z. Q. SU (蘇眾慶), Department of Mechanical Engineering, The Hong Kong Polytechnic University (Email: mmsu@polyu.edu.hk, Tel: 67476317)
	Prof. C. K. CHAN (陳昌麒), Department of Applied Mathematics, Faculty of Applied Science and Textiles, The Hong Kong Polytechnic University (Email: ck.chan@polyu.edu.hk, Tel: 27666919)
	Dr. Wan-Huan ZHOU (周萬歡), Department of Civil and Environmental Engineering, University of Macau (Email: hannahzhou@umac.mo, Tel: +853 8822-2426)
	Dr. Yuan LIN (林原), Department of Mechanical Engineering, The University of Hong Kong (Email: ylin@hku.hk, Tel: 28597955)
	Dr. Duruo HUANG (黃杜若), Department of Civil and Environmental Engineering, Hong Kong University of Science and Technology (Email: huangdr@ust.hk, Tel: 23582684)
	Dr. Yang LU (陸洋), Department of Mechanical and Biomedical Engineering, City University of Hong Kong (Email: yanglu@cityu.edu.hk, Tel: 34424061)
	Dr. Hui Tang (唐輝), Department of Mechanical Engineering, The Hong Kong Polytechnic University (Email: h.tang@polyu.edu.hk, Tel: 27667815)
	Dr. Haimin YAO (姚海民), Department of Mechanical Engineering, The Hong Kong Polytechnic University (Email: haimin.yao@polyu.edu.hk, Tel: 27667817)
IUTAM Representative	Prof. Q. P. SUN (孫慶平), Department of Mechanical Engineering, Hong Kong University of Science and Technology (Email: meqpsun@ust.hk, Tel: 2358 8655)

Composed by Paul Lam

President of HKSTAM, Hong Kong SAR

13 April 2019