Greetings from the President

Prof Hiroshi Yokota
ACF President
Hokkaido University
Japan

ACF has hosted international conferences and symposia every two years. In addition to them, ACF has supported various events such as conferences, symposia, seminars and workshops. Those activities meet the objective of ACF that includes dissemination of useful information on concrete and concrete structures. As a representative of ACF, I have recently attended some events where I have given brief introductions and information of ACF to the participants. Some of them are summarized in this newsletter.

From November 4, the ACF’s big event, 8th International Conference will be held in Fuzhou, China. I hope that many people come to join and exchange latest information there. Also we will have a GA (General Assembly) during the conference. Representative, individual and organization members are kindly requested to attend the meeting, where various opinions and ideas about ACF will be shared. I am looking forward to seeing the members there.

The 8th International Conference of ACF, Fuzhou, China

Dr Baochun Chen
Chairman of the Local Organizing Committee
Fuzhou University, China

ACF would like to extend the appreciation particularly to those who participate in the 8th International Conference on Sustainability and Innovation in Concrete Materials and Structures at Fuzhou, China. The ACF 2018 aims to share and build on practical sustainable and innovative concrete materials and structures development. It is a platform for concrete professional community to share advanced concrete technologies, innovations, case studies and research development as well as the importance of the production and use of concrete in a more sustainable and innovative way with scientists, researchers, government officials, specification makers, project owners, constructors and others.

At the conference, 15 keynotes and 105 oral presentations will be given and 220 participants have been registered to date. On the last day of the conference, the technical tour to the construction of Pingtan cross-strait highway-railway bridge is planned. This 16-km long bridge is the first raid-road bridge in China linking Changle and Pingtan Island.

Since its establishment in 2004, ACF has held international conferences every 2 years in various Asian countries, and these conferences have served as a good venue for information exchange and other activities. Since the 7th Conference in Hanoi in 2006, the Organizing Committee has well prepared the conference to be successful. On behalf of the Organizing Committee, we wish all you would enjoy the series of the conference events.
ACF UHPC Technical Committee

Prof Caijun Shi
ACF Vice-President (Technical)
Hunan University, China

Ultra-high performance concrete (UHPC) is a new cement-based composite material with compressive strength greater than 120 MPa (According to ASTM C1856-17 Fabricating and Testing of Ultra High Performance Concrete), good ductility and excellent durability. It has been attracting wide attention worldwide due to its excellent performance.

Prof Caijun Shi launched an UHPC technical committee within ACF on November 23, 2017 in Chiang Mai, Thailand. The committee attracted more than 30 members from 9 Asian countries/regions. During the first committee meeting in Chiang Mai, Prof Caijun Shi overviewed the research progresses on UHPC and standardization in the world, and Prof Zhi Fang from Hunan University, China gave a presentation about his work on the structural design of UHPC. Then, the committee members discussed the goals and work plan of the committee. It was decided that it would complete "Guidelines for the Design of UHPC Materials" and "Guidelines for the Design of UHPC Structures" by the end of 2019. The committee was divided into two working groups: one on materials and the other on structure. Both groups would complete the draft of the guidelines before its second meeting, which would be held in Ipoh, Malaysia.

The second technical committee meeting was held in Ipoh, Malaysia between June 29-30, 2018. DURA Technology hosted the meeting. The main task of the meeting was to discuss the draft guidelines. Committee Chair Prof Caijun Shi chaired the meeting and went through the draft guidelines for materials and structure design first, then committee members discussed them one by one items, suggested the revisions for some items. During the lunch break, the committee members visited the precast plant of DURA Technology. All committee members were impressed by the process and products in the plant. On June 30, Dr. Yenlei Voo, the president of DURA Technology took the committee members to visit 5 bridges built with UHPC.
SIP Special Session at 2nd ACF Symposium

Dr Koji Matsumoto
University of Tokyo
Japan

SIP stands for Cross-ministerial Strategic Innovation Promotion Program, which is steered by Cabinet Office, Government of Japan. One of the projects of SIP is Infrastructure Maintenance, Renewal and Management Technology. International activities are a part of the scope of the SIP project, as well as development of new materials, inspection methods, information and communication technologies (ICT), robot technologies and asset management technologies. In the 2nd ACF Symposium held from 23rd to 25th November 2017 in Chiang Mai, Thailand, the SIP special session entitled Towards the Life-cycle Management of Concrete Structures was organized. Table 1 lists presentations given in the SIP special session. Nine presentations were given from Japanese and Thai universities and infrastructure managers. In addition to the latest technologies such as inspection and evaluation methods using drone and artificial intelligent (AI), some trials for social implementations were also introduced.

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<th>Title</th>
<th>Presenter</th>
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<td>Life-cycle management and asset management for infrastructure</td>
<td>K. Matsumoto (University of Tokyo)</td>
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<td>Life-cycle management of port and harbor structures in Japan</td>
<td>Y. Kawabata (Port and Airport Research Institute, Japan)</td>
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<td>Life assessment of bridge decks by data assimilation and survival analysis</td>
<td>Y. Tanaka (University of Tokyo)</td>
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<td>Activities of Gifu University SIP implementation team for utilizing</td>
<td>R. Hasuike (Gifu University)</td>
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<td>Introduction of SIP development technology utilizing MICHIMORI system</td>
<td>H. Matsuda (Nagasaki University)</td>
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<td>and development of that system to Kyushu and Yamaguchi areas</td>
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<td>Sharing of infrastructure maintenance management knowledge for</td>
<td>C. Yamasaki (Hokkaido University)</td>
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<td>P. Wiwatrojananagul (Sirindhorn International Institute of Technology)</td>
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<td>RC structures using ground penetrating radar</td>
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<td>Analysis of bridge inspection data for the strategic infrastructure</td>
<td>T. Kashiwa (University of Tokyo)</td>
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<td>management in rural city in Japan</td>
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The SIP project is a 5-year project and going to finish at the end of March, 2019. We hope that technologies and know-how developed in the SIP project will be utilized for future infrastructure management in not only Japan but also the other countries especially in Asia, where many construction projects are currently going on.
Seminar on “Advances in Maintenance and Management of Concrete Infrastructures”

A one-day public seminar on “Advances in Maintenance and Management of Concrete Infrastructures” was held on September 7, 2018, at The Hong Kong Polytechnic University (PolyU). The seminar was jointly organized by Department of Civil and Environmental Engineering & Research Institute for Sustainable Urban Development of PolyU and supported by ACF, Hong Kong Concrete Institute and American Society of Civil Engineers, Hong Kong section. The seminar attracted more than 200 participants from local industry, universities, research institutes and government sectors.

The following 8 speakers (including 5 ACF members) were invited to deliver lectures for the seminar,

1. Hiroshi Yokota, ACF President and Professor of Hokkaido University, Japan  
   Lecture title: Asset management of infrastructures
2. Jian-Guo Dai, Chair of ACF Technical Board and Professor of PolyU, Hong Kong, China  
   Lecture title: Surface treatment technology for preventive maintenance of concrete infrastructure
3. Michael W. Henry, ACF member and Associate Professor of Hokkaido University, Japan
4. Kohei Nagai, ACF member and Associate Professor of Tokyo University, Japan
5. Koji Matsumoto, ACF member and Project Lecturer of Tokyo University, Japan
6. Quan-Wang Li, Associate Professor of Tsinghua University, China
7. You Dong, Assistant Professor of PolyU, Hong Kong, China

The seminar covered many technical issues from the life-cycle based maintenance concept to the state-of-the-art maintenance technologies in Hong Kong, Mainland China, Japan and the rest of Asia. Drs. Nagai and Matsumoto delivered the lectures on behalf of Prof Yokota and Dr Henry, respectively, who unfortunately could not attend the seminar due to the strong earthquake in Hokkaido. The seminar was well accepted by the audience. It is worth mentioning that promoting the life-cycle based maintenance strategies for concrete infrastructures in Asian countries one of the most important technical foci of the ACF community.
An impressive Concrete Conference

An international conference titled ‘Innovative World of Concrete’ (IWC) was started by Indian Concrete Institute (an RM of ACF) in 1993 at Bangalore. It is being held every 5 years. After being held in several cities, it was held this time again in Bengaluru (erstwhile Bangalore) from 19th to 22nd September, 2018. Asian Concrete Federation was one of the main supporting organizations. About 18 renowned speakers including industry experts, academicians and researchers presented keynote and invited lectures addressing various issues of construction industry. There were also about 70 exhibition stalls showcasing the latest technologies and equipment. Over 1000 delegates including practicing engineers, developers, consultants, architects, researchers, academicians and students representing various states of India and abroad were benefitted by this conference.

The deliberations focused on various new technologies used in housing and infrastructure sector like metro-rail, tall buildings, irrigation structures, affordable housing etc. The speakers stressed the need for using low carbon materials with less embodied energy leading to sustainable development. The issues which are hindering the implementation of new technology and materials were also discussed. Prof Hiroshi Yokota, President, Asian Concrete Federation from Japan, Mr Khalid Awad, Former President of American Concrete Institute, Mr Isaac Heng from Switzerland spoke on the topics viz. Life Cycle Management of Structures, Concrete for Super-tall Structures, Future of ND with IoT innovations, respectively. The President(-Elect) of Indian Concrete institute and a renowned bridge engineer, spoke about connectivity of metro and roads through elevated corridors.

IIT Professors KLV Subramaniam, Manu Santhanam, Radhakrishna Pillai spoke about the new materials like Self-levelling Geopolymer concrete, 3-D printing and Special grouts etc. All these materials would help the construction industry to address various new challenges in the field. Er. Umang Bhavsar gave excellent presentation on formwork and scaffolding technologies which is the need of hour. Many other speakers spoke about precast technology, structural health monitoring, real time data on sustainability, case studies on deep foundation, urban built environment and free play with concrete in architecture etc.

There were presentations by students and researchers as well. New product demonstrations were a special attraction of the event. In a format called Deminar (Demonstration cum Seminar), demonstrations on new concretes and admixtures carried out in open field outside the venue were live-streamed into the auditorium on huge screen. Every participant could get a very close view of the demonstrations and also ask questions to the demonstrators.

Overall, the conference successfully achieved the goal of disseminating the current knowledge to the stakeholders.
JSPS Core-to-Core Program Seminar

“Deterioration of concrete structures and application of mineral admixture in hot weather conditions”

Dr Shingo Asamoto
Saitama University
Japan

The seminar entitled “Deterioration of concrete structures and application of mineral admixture in hot weather conditions” was carried out at National University of Civil Engineering, Vietnam in Hanoi on the 25th and 26th in September 2018. The seminar is an event of the project “Collaborative research network on standardization of design and construction for hot weather concreting based on Asian climate and materials”, which was accepted as a JSPS (Japan Society for the Promotion of Science) Core-to-core program (Asia-Africa Science Platforms) from FY2017 to FY2019 (Project coordinator: Dr. Shingo Asamoto).

The project focuses on the issues and measures for hot weather concreting in Asia and studies the initial defects, deterioration and application of mineral admixture sharing the information of the countries involved in the project such as Vietnam, Thailand, Sri Lanka and Japan. Over 100 people from Vietnam (including Vice Minister of Ministry of Construction, President and vice president of Vietnam Cement Association), Thailand (9 persons), Sri Lanka (13 persons), Indonesia (3 persons) and Japan (24 persons) attended the seminar. In the seminar, the JCI guidelines for control of cracking of mass concrete 2016, mineral admixture application in Vietnam, and ongoing researches related to hot weather concreting and mineral admixtures were presented. In panel discussion, the first ACF president, Prof Uomoto, introduced the history of ACF and the current president, Prof Yokota, presented the current situation of ACF. In addition, the ACF treasure, Prof Tangtermsirikul, explained the utilization of off-spec fly ash. The concrete issues and the effect of mineral admixtures in hot weather conditions were actively discussed among participants. The seminar was the second time (first one in Thailand) and third one will be carried out in Japan. If you are interested in the seminar, please check the project homepage (http://park.saitama-u.ac.jp/~asamoto/).
Long-term Perspectives in Concrete Engineering

Prof Hiroshi Yokota
ACF President
Hokkaido University
Japan

At Otaru Port, close to my hometown Sapporo, Hokkaido, Japan, there is a noteworthy breakwater. As one of the large national projects the breakwater started its construction in 1897 under the supervision of Dr. Isami Hiroi (1862-1928), a civil engineer. He began developing innovative construction techniques and theories including a formula for calculating the wave force acting on a breakwater, oblique stacking concrete blocks for the breakwater body, and mixing volcanic ash for strengthening concrete.

Since Dr. Hiroi had concerns about quality of concrete production, he decided to initiate long-term tests in the actual environments to evaluate the long-term performance and durability of concrete. He started producing mortar briquettes which are applied for tensile strength tests in 1896, a year before the construction started.

With 491 varieties including cement manufacturers, kinds and locations of volcanic ash, production areas of fine aggregates, and chloride concentrations in mixing water, the total number of the briquettes reached approximately 60,000. Its number is enough for the tests continued for the original target period of 50 years, and about 4,000 of which still remain today that wait for future tests.

His long-term perspectives suggest a way for engineers to go. Dr. Hiroi mentioned in his book that honor and humiliation of an engineer, that would be called in to question for one thousand years, depend on how the design is made.

Lots of new technologies, materials, methodologies, systems, etc. relating to concrete engineering have been developed recently. Our attitudes to them should be based on long-term perspectives because concrete infrastructure must be used for long time. It is hoped that ACF will be more activated based on its long-term perspectives.
The 3rd ACF Symposium
“Assessment and Intervention of Existing Structures”

Date: 10-11 September 2019
Venue: Hokkaido University, Sapporo, Japan
Organizer: Asian Concrete Federation
Sponsor: Japan Concrete Institute

The 3rd ACF Symposium: “Assessment and Intervention of Existing Structures” sponsored by Japan Concrete Institute will be held on 10-11 September 2019 at Hokkaido University, Sapporo, Japan. As a part of the Symposium, we will hold Prof Tamon Ueda Special Session that honors his accomplishments in his research fields and contributions to ACF. The organizers of ACF Symposium cordially invite the world’s researchers to share their unique outcomes and discussions regarding the maintenance/rehabilitation of existing concrete structures.

Official Website
http://www.eng.hokudai.ac.jp/acf2019/index.htm

Preliminary Invitation to 9th ACF Conference

ACF will organize the 9th ACF Conference in June/July of 2020 at Ulaanbaatar, Mongolia. The conference will be organized by Asian Concrete Federation (ACF), Ministry of Construction and Urban Development (MCUD), Mongolian Concrete Association (MCA), Mongolian Association of Civil Engineering (MACE) and Mongolian University of Science and Technology (MUST).

The detailed information on the conference can be found on the conference official website, which will be opened soon. The conference organizing committee warmly welcomes all of you to Ulaanbaatar.

Membership fee
Members are kindly reminded to pay their membership fee. Please contact the secretariat in case you have any query about your membership status.

Secretariat
Krittiya Kaewmanee
secretary@asianconcretefederation.org

www.asianconcretefederation.org