

JSCE Online Joint Seminar "Advanced technologies and issues related to thermal effect of concrete in Singapore and Japan"

The seminar held jointly by the JSCE Concrete Committee in cooperation with Nanyang Technological University was held on 26th Sept. 2022. Although still occurring every year, this seminar has been held online since 2020 as a consequence of the coronavirus pandemic. This year's theme, "Advanced technologies and issues related to thermal effect of concrete in Singapore and Japan", was selected because issues related to the quality control of concrete in hot weather are becoming more serious due to global warming. Lectures on issues relating to thermal effects, countermeasures and their practical application, and related advanced technologies were given by six leading experts in this field (Photo 1).

The seminar schedule is shown in Table 1. Dr. Yoshinobu Ooshima, chairperson of the Sub-committee on International Affairs, gave the opening remarks. He explained the background to the seminar and that solutions related to the quality control of concrete exposed to high temperatures had significant meaning. In the first morning session, Dr. Tan Kang Hai of Nanyang Technological University gave a lecture on the topic of fire damage and the fire resistance of fiber reinforced concrete. Next, Mr. Lu Jin Ping of the American Concrete Institute (Singapore Chapter) lectured on the issues related to mass concrete in Singapore and its applications. In the last talk of the morning session, Dr. Akira Hosoda of Yokohama National University described the contents of the JSCE standard specifications regarding the quality control of hot weather concrete and, as a practical application, presented numerical analysis for a bridge suffering from thermal cracks. The afternoon session began with a lecture by Mr. Takuya Ono of Taiheiyo Singapore Pte. Ltd. on the effects of fly ash and blast furnace slag when applied to prevent delayed ettringite formation, which can be a problem for hot weather concrete casting. Mr. Toshifumi Kikuchi of Shimizu Corporation then introduced some practical applications of low-heat concrete for mass concrete in Singapore and Dr. Takumi Sugamata of Pozzolite Solutions Ltd. described some practical applications of chemical admixtures that provide hot weather concrete with high slump retention. During the question and answer sessions, many participants asked questions about various aspects of the theme.

The nationality of seminar pre-registrants was varied, with approximately 20% from Singapore and Indonesia, 14% from Myanmar, and the remainder from over 20 countries such as China, Japan, Vietnam, Bangladesh and Pakistan (Table 2). This wide range of nationalities points to one of the advantages of holding the seminar online, without the limitations of a particular venue. With over 100 people taking part, the seminar ended on a high note.

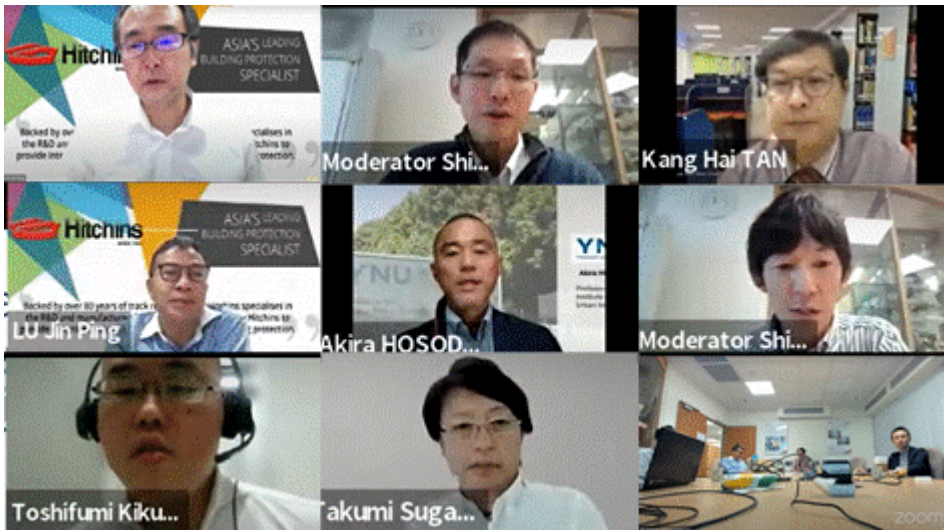


Photo 1 Lecturers

Table 1 Seminar schedule

Moderator: Dr. Shingo Asamoto (Saitama University)

Time GMT+7	GMT+9	Title	Presenter
09:00 ?	10:00 ?	Opening remarks: Dr. Yoshinobu Ooshima, chairperson, JSCE, Concrete Committee, Sub-committee on International Affairs	
09:10 ?	10:10 ?	Fire-resistant HPC and UHPC from materials to RC column performance under elevated temperature	Dr. Tan Kang Hai: Nanyang Technological University
09:40 ?	10:40 ?	Singapore experience on temperature control of mass concrete	Mr. Lu Jin Ping: American Concrete Institute – Singapore Chapter
10:10 ?	11:10 ?	Issues related to hot weather concrete and mass concrete cracking - JSCE standard specifications of concrete structures	Dr. Akira Hosoda: Yokohama National University
10:40 ?	11:40 ?	Q&A session	
11:10 ?	12:10 ?	Suppression effect of supplementary cementitious materials (SCMs) on delayed ettringite formation (DEF) expansion	Mr. Ono Takuya: Taiheiyo Singapore Pte. Ltd.
12:20 ?	13:20 ?	Application of low-heat fly ash cement to actual massive concrete	Mr. Toshifumi Kikuchi: Shimizu Corporation
12:40 ?	13:40 ?	Effectiveness of mid-range water reducer with super slump retention and setting retardation effect in hot weather concrete	Dr. Takumi Sugamata: Pozzolith Solutions Ltd.
13:00 ?	14:00 ?	Q&A session	
13:30 ?	14:30 ?	Closing remarks	
13:40 ?	14:40 ?		

Table 2 Breakdown of pre-registrations

Nationality	Number	Percentage (%)
Singapore	83	20.7
Indonesia	78	19.5
Malaysia	56	14.0
China	46	11.5
Japan	37	9.2
Vietnam	21	5.2
Bangladesh	12	3.0
Pakistan	11	2.7
India	8	2.0
Philippines	7	1.7
Sri Lanka	7	1.7
Others	35	8.7
Total	401	100.0