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## The IOM3 Young Persons' Lecture Competition Award 2022 The Institute of Materials, Minerals and Mining – Hong Kong Branch

2022.07.11

We would like to announce that Mr. Yuen Ka Fai, one of our research members, participated in the **Young Persons' Lecture Competition 2022 of the Institute of Materials, Minerals and Mining – Hong Kong Branch** on 7 July 2022, and he was awarded the Second Runner-up for his presentation on:

### **Recent development on corrosion monitoring and protection for modular integrated construction (MiC) building in Hong Kong**



These Awards were given to young Scientists and Engineers (i.e. aged 28 years or under) who made a 15-minute presentation on their research topics in a highly professional manner.

The Competition was held once every year since 2005, and it aimed to provide a competitive but friendly atmosphere for candidates to present their research work, and practise their presentation skills. Topics for presentations covered any aspect of Materials, Minerals, Mining, Packaging, Clay Technology and Wood Science, Science and Engineering.

The Judging Panel of The IOM3 Young Persons' Lecture Competition Award 2022 consists of:

- Mr. Steven Williamson  
*Technical Director, AECOM Asia Co. Ltd.*
- Ms. Jennifer Haigh  
*Industrial Water Business Development Manager, Veolia Water China, and*
- Dr. Louis Wong  
*Associate Professor, Department of Earth Science, The University of Hong Kong*

The Competition was held on-line, and each participant was given 12 to 15 minutes to present their research work to the Judging Panel.



### **Synopsis of presentation**

Modular integrated construction (MiC) is a construction system where free-standing volumetric building components, usually completed with finishes and fixtures, are fabricated in a factory environment, and then transported to a construction site for installation. In the past, various studies have been conducted to investigate advantages of MiC comparing with the traditional cast-in-situ construction (TCC) approach. However, none of them discussed the potential durability problem of MiC. In most MiC buildings, the structural frames are typically made of steel sections. For exposed structural steelwork without any corrosion protection, it may corrode quickly under an atmospheric condition with a corrosion rate up to 89  $\mu\text{m}/\text{y}$ .

This presentation provided a detailed description on recent developments and techniques available for corrosion monitoring of MiC buildings in Hong Kong. Moreover, in order to quantify the level of corrosivity in these MiC buildings, a systematic corrosion monitoring has been conducted for a year, i.e. from January 2021 to January 2022, for the first MiC building installed in Hong Kong, namely, the InnoCell Building at the Hong Kong Science Park, Shatin. Based on the measured results, the corrosion rates of both external and internal structural steelwork in the MiC building were examined, and analyzed.