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Visit to the National University of Singapore – Woh Hup Distinguished Lecture 2024.03.27

Prof. K. F. Chung, Director of CNERC, visited the National University of Singapore on 27 March 2024, and he was the Keynote Presenter of **the Woh Hup Distinguished Lecture** organized by Prof. Richard Y. J. Liew and Dr. X. D. Qian. Dr. H. C. Ho, Deputy Executive Secretary, Dr. Y. F. Hu, Research Assistant Professor, and both Ms. M. F. Li and Mr. W. Chen were also invited to present on their recent research work. This event registered a close technical collaboration between CNERC and NUS on modern steel construction technology on high strength steel construction.



Prof. Chung taking a photo with Prof. Liew and Dr. Qian together with CNERC delegates

In this event, a total of 5 technical presentations were made to report recent developments on effective use of high strength S690 steel in construction, and key aspects on the structural behaviour of steel members and joints under various actions were reported.



“High strength S690 steel and research into their mechanical properties & structural behaviour”
by Prof. K.F. Chung

WOH HUP DISTINGUISHED LECTURE

High Strength S690 Steel and Research into Their Mechanical Properties & Structural Behaviour

Abstract

High-strength S690 steel offers huge advantages in construction because of reduced use of materials and improved productivity. However, there is a lack of a comprehensive understanding of the mechanical properties of their welded sections, and the also structural behaviour of their members.

This presentation describes several number of research projects conducted at CNERC over the past 7 years, and these include

- i) microstructural evolution within heat-affected zones of welded sections,
- ii) distributions of residual stresses in fabricated sections and within their thicknesses, and
- iii) local plate buckling as well as overall member buckling are examined.

Key findings of these projects contribute to the successful adoption of the high strength S690 steel in construction in both Hong Kong and Macau.

Speaker Biography

Professor Chung is an internationally renowned academic, researcher and structural engineer with established expertise in steel construction. Currently, he is a Professor at the Department of Civil and Environmental Engineering, and Founding Director of the Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch) at The Hong Kong Polytechnic University. He obtained his first degree from the University of Sheffield, and his doctoral degree from the Imperial College of Science, Technology and Medicine.

Prof. Chung works on a wide range of inter-disciplinary engineering investigations, analyses and simulations, especially on modern steel and steel-concrete composite structures. His research interests include mechanical properties and structural behaviour of high-strength steel, limit state analyses and performance-based design of structural systems, structural fire engineering and fire protection in buildings and tunnels, and design codification. In the recent years, with strong support from the construction industry and various government departments and regulatory agents, Prof. Chung has extended his applied research interests into the effective use of high-performance materials, sustainable infrastructure development, and corrosion protection of structural steelwork.

Prof. Chung serves as a Member of the Construction Industry Council in Hong Kong since 2018, and he was Vice President of the Institution of Structural Engineers in the U.K. from 2017 to 2020.

Professor Chung Kwok-Fai
The Hong Kong Polytechnic University
Hong Kong SAR, China



Host

A/Professor Qian Xudong

Department of Civil and Environment Engineering,
NUS

Date and Time

27 March 2024, Wednesday

10.00 am - 11.00 am

Venue

Lecture Theatre 427, SDE3
National University of Singapore
4 Architecture Drive
Singapore 117566

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25 Mar 2024, 2.30 PM

PDU points pending



Department of Civil &
Environmental Engineering
College of Design and Engineering

**Buffet lunch will be served after the Q&A session.
Registration is compulsory.**

Ductile fracture properties of high-strength structural steel

Speaker Biography

Dr Ho presently holds the position of Principal Research Fellow within the Department of Civil and Environmental Engineering at the Hong Kong Polytechnic University. Since the inception of the Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch) in October 2015, he served as its Deputy Secretary General. In 2020, he assumed additional responsibilities as the Deputy Executive Secretary of the CNERC and took charge of the CNERC Laboratory for Mechanics and Steel Materials. His areas of expertise encompass a wide range of fields including steel structures, cold-formed steel structures, bamboo structures, modular integrated construction, and fire-resistant design.

Dr Ho Ho Cheung
The Hong Kong Polytechnic University
Hong Kong SAR, China



Structural Behaviour and Application of Cold-formed High Strength S690 Steel Tubular Joints

Speaker Biography

Dr Hu Yi-Fei is the Deputy Laboratory-in-charge of the CNERC Laboratory for Mechanics and Steel Materials of the Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch). He is currently a Research Assistant Professor in Structural Engineering at the Hong Kong Polytechnic University. Dr Hu received his BEng degree from Tongji University in 2012, and his MSc degree from the Hong Kong Polytechnic University in 2013. He worked as a graduate structural engineer for an international engineering consulting firm in Hong Kong from 2013 to 2014. After he received his PhD degree from the Hong Kong Polytechnic University in 2019, Dr Hu joined the Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch) as a Postdoctoral Fellow. Dr Hu's research has been focused on high-performance steel materials and their structural behaviour.

Dr Dr Hu Yi-Fei
The Hong Kong Polytechnic University
Hong Kong SAR, China



Date and Time

27 March 2024, Wednesday
11.00 am - 12.00 pm

Venue

Lecture Theatre 427, SDE3
National University of Singapore
4 Architecture Drive
Singapore 117566

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Ductile fracture behaviour of S690 and S960 high-strength steel under monotonic tensile actions

Speaker Biography

Ms Li is a PhD student of the Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch) at The Hong Kong Polytechnic University. She obtained her master's degree from Tianjin University. Currently, she is working on the research topic of ductile fracture of high-strength steels and its applications on welded connections.

Ms Li Mengfei

The Hong Kong Polytechnic University
Hong Kong SAR, China



Fatigue performance of high-strength S690 steel and their welded sections

Speaker Biography

Mr Chen is a PhD student at the Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch) at The Hong Kong Polytechnic University. He received his BEng degree in Civil Engineering from Fuzhou University in 2019 and his MSc degree in Civil Engineering from the Hong Kong Polytechnic University in 2020. His research interest is the fatigue behaviour of high-strength S690 steel and its welded sections.

Mr Chen Wei

The Hong Kong Polytechnic University
Hong Kong SAR, China



Date and Time

27 March 2024, Wednesday
11.00 am - 12.00 pm

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