



## Half Day Seminar on

# Applications of High-Performance Steel Materials and Design

Organized by

Hong Kong Institute of Steel Construction

Supported by

Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University

Department of Construction and Quality Management, Hong Kong Metropolitan University

Structural Division, The Hong Kong Institution of Engineers

Date:	19 May 2023, Friday
Time:	1:50PM (registration) for 2:00PM to 5:00PM
Venue:	PQ304, The Hong Kong Polytechnic University

### **Background**

In recent years, steel has gained increased prominence in the construction industry of Hong Kong and the Mainland China. Recent advancements in research and manufacturing have led to the development and availability of high-performance steel materials, including high-strength steel and stainless steel. These materials are being utilized more frequently, offering sustainable, durable, and cost-effective solutions for a range of applications, such as modular integrated construction (MiC) and others. The adoption of high-performance steel materials is expected to continue growing in popularity as their benefits become more widely recognized.

### **Scope and objectives**

This half-day seminar aims to offer engineers valuable insights into the structural characteristics, applications, and design of high-performance steel materials in building construction. Experts in applied research will elaborate on the popular high-performance steel materials, namely high-strength steel and stainless steel. Additionally, the second-order direct analysis method, an innovative design approach specifically tailored to address the design challenges associated with high-performance steel materials, will be discussed. This seminar will equip engineers with a deeper understanding and practical knowledge of these materials and design methods, enhancing their ability to create more efficient and sustainable structures.

### **The Speakers**

**Dr Yan-Bo Wang** is a professor of structural engineering in Civil Engineering Department at Tongji University. He is an active member in the National Research Centre for Prefabricated Construction which is supported by the Ministry of Science and Technology of the People's Republic of China (MOST). He received his Ph.D. degree from Tongji University in 2012. Prior to joining Tongji University in 2017, he was a Research Fellow/Senior Research Fellow of Department of Civil and Environmental Engineering at the National University of Singapore. His principal research interests lie in the areas of high-performance steel and composite structures, constitutive model of advanced constructional materials and modular construction (called MiC in Hong Kong). The research achievements were adopted by two design codes and were directly applied to the design and construction of some key projects such as the National Exhibition and Convention Center (Shanghai).

**Ir Dr. Yancheng CAI** is the Civil Engineering Program Leader at Hong Kong Metropolitan University (HKMU). He obtained his doctoral degree in structural engineering from The University of Hong Kong (HKU) in 2013. He then worked in the engineering industry and HKU for the practice and research in structural engineering during 2014-2020. In July 2020, he took up the position of research assistant professor at The



Hong Kong Polytechnic University. He joined HKMU as an assistant professor in August 2022. Dr. CAI's research focuses on behaviour and design of high performance steel (including stainless steel and high strength steel) structures at room and elevated temperatures. His specialties include the combination of experimental design, numerical modelling and theoretical analysis in investigation, stability and connection details of high performance steel structures and steel modular systems. Dr. Cai received the Grand Prize of the HKIE Innovation Awards for Young Members in 2018 and, the "Commendation Merit - R&D Award by Joint Structural Division of Structural Division of HKIE and the IStructE in 2017, etc.

**Dr. Siwei Liu** is an assistant professor in CEE at PolyU. His research mainly focuses on computational structural engineering and advanced design of modern steel structures. He received a Grand Award in Research in 2020 from HKIE, a Commendation Award in Research in 2018 from HKIE and another Grand Award in Research in 2016 from joint structural division of HKIE and IStructE. He has co-developed structural analysis and design software, including RCD2016 and NIDA10. His work is both practical and academically advanced, and he has worked as a principal member in specialist teams for leading structural consultants, government departments and contractors in Hong Kong.

### Official Language

English will be the official language of the seminar.

### Fee & Registration

The registration includes half-day CPD certificate, please follow the registration procedure below.

YMG HKISC Member	HKIE or HKISC member:	Group of 5+:	Non-member:
HK\$ 250	HK\$ 600	HK\$ 500	HK\$ 700

### CPD Certificates

This seminar is recommended for **3** CPD hours. An attendance certificate will be issued.



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Time	Programme
1:50 pm	Registration
2:00 pm	<p><b>Behaviour and Design of High Strength Steel Structures</b></p> <p>Prof. Yan-Bo Wang <i>Professor, Tongji University</i></p>
3:00 pm	<p><b>Behaviour and Design of Lean Duplex Stainless Steel Structures</b></p> <p>Ir Dr. Yancheng CAI <i>Assistant Professor, Hong Kong Metropolitan University</i></p>
4:00 pm	<p><b>Direct Analysis for Design of Contemporary Structures using High-Performance Steel Materials</b></p> <p>Dr Siwei Liu <i>Assistant Professor, The Hong Kong Polytechnic University</i></p>
5:00 pm	End of Seminar

## REGISTRATION FORM

*(To be replied on or before 17 May 2023)*

Please follow the 2 steps registration procedure:

1. Email the completed registration form to Mr. Sam Chan (Email: [samchan@hkisc.org](mailto:samchan@hkisc.org)) for preliminary registration.
2. Post the completed registration form together with a crossed cheque payable to **Hong Kong Institute of Steel Construction Limited** to Mr. Sam Chan, at:  
**HKISC c/o Unit 209B, Photonics Centre, No. 2 Science Park East Avenue, Hong Kong Science Park, Shatin, NT.**

Registration fee can also be paid by ATM or bank in to HKISC bank account at Hang Seng Bank. Our **Hang Seng Bank** account number is **222-049918-001** and account name is "Hong Kong Institute of Steel Construction Limited". Please email the ATM transfer advice or deposit form to [samchan@hkisc.org](mailto:samchan@hkisc.org) for record after transferred.

Places are limited. Please send the completed registration form to **Mr. Sam Chan, Secretary of the Institute of Steel Construction, c/o Unit 209B, Photonics Centre, No. 2 Science Park East Avenue, Hong Kong Science Park, Shatin, NT.** by **12:00 noon, 17 May 2023.** or through email: [samchan@hkisc.org](mailto:samchan@hkisc.org). For more technical information, please contact Miss Cat Lam at 3595 6150 or [man@hkisc.org](mailto:man@hkisc.org).

### A. Personal Details:

Title	Name in full (Block Letter)	Name of company	Tel.	E-mail address	Institution/ Membership No.
1.					
2.					
3.					
4.					
5.					
Postal Address (for official receipt):					

### B. Registration Details:

	Item	Registration Fee	Total no. of registration	Sub-total
1.	Regular registration (Member*price)	HK\$ 600 each x	_____ person(s)	= HK\$ _____
2.	Regular registration (Non-member*price)	HK\$ 700 each x	_____ person(s)	= HK\$ _____
3.	Group registration (at least <b>5</b> people)	HK\$ 500 each x	_____ person(s)	= HK\$ _____
4.	HKISC YMG registration	HK\$ 250 each x	_____ person(s)	= HK\$ _____
			<b>Total amount:</b>	<b>HK\$ _____</b>

*Note: The registration fee includes e-copy of lecture notes and CPD certificate*

*\*Member refers to HKIE or HKISC member*

I enclosed a crossed cheque (cheque no. \_\_\_\_\_) with the sum of HK\$ \_\_\_\_\_ for the registration fee of the captioned Seminar.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**CPD Certificates of Attendance** Please tick the appropriate box to indicate your choice:

Yes, I/we would like to have CPD certificate(s)  Not requested for certificate(s).

*The Hong Kong Institute of Steel Construction Limited HKISC is a non-profit making organization certified by qualified accountant yearly and it serves to disseminate latest technology in construction.*