

# Concrete-Filled Steel Tubular (CFST) Structures: Research, Applications and Design Standards



## Prof. Lin-Hai Han

Guangxi University/ Tsinghua University

Date: 20/06/2024 (Thursday)  
Time: 9:00pm to 10:00pm  
Hong Kong time (GMT+8)  
Venue: Online. Zoom link will be provided after registration. Please register by 12/06/2024.

### Registration:

Online registration at

<https://forms.office.com/r/yCzw3Bha1V?origin=lprLink>

or by scanning:



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### Biography

Professor Lin-Hai Han is engaged in teaching and research in the field of structural engineering. He currently serves as President of Guangxi University, and is a tenured Professor at Tsinghua University. He has published 7 books and over 300 research papers. He has presided over the development of 6 technical standards on CFST structures, including the National Standard of China *Technical Standard for Concrete-Filled Steel Tubular Hybrid Structures*, GB/T 51446-2021. He is also presiding over the development of an international standard ISO/FDIS 16521 *Design of Concrete-Filled Steel Tubular (CFST) Hybrid Structures*. As the first author, he was awarded the *State Natural Science Award* (Second Prize) in 2019, and the *Natural Science Award of the Ministry of Education* (First Prize) in 2022. He was awarded the Prize for Scientific and Technological Innovation, Ho Leung Ho Lee Foundation in 2023.

### Abstract

As a high-performance structure, concrete-filled steel tubular (CFST) structure has become one of the preferred structural forms for China's current major civil engineering constructions. This report will present the nonlinear confinement effect in CFST structures, the life-cycle-based constitutive models of the core concrete, and the calculation framework for the resistances of CFST members. Concepts, main forms, and the life-cycle-based analysis and design framework for CFST hybrid structures will also be presented. Subsequently, the applications of the research outcome in the design of the main structures in some iconic constructions, including the CITIC Tower, the Canton Tower, and the Ganhaizi Mega Bridge, will be elaborated. Finally, the National Standard of China for CFST hybrid structures and the current development progress of the corresponding ISO standard will be introduced.

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