

Ir Dr. Ho-Cheung HO 何浩祥博士

Principal Research Fellow

Department of Civil and Environmental Engineering

Deputy Executive Secretary

Chinese National Engineering Research Centre for Steel Construction
(Hong Kong Branch)

The Hong Kong Polytechnic University
Hung Hom, Kowloon
Hong Kong SAR



Tel : (852) 2766 4485

Email : hc.ho@polyu.edu.hk

Website: <https://www.polyu.edu.hk/cee/people/academic-staff/dr-hc-ho/>

Google Scholar: https://scholar.google.com/citations?user=v_uT6eQAAAAJ&hl=en

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=36777868300#>

Orcid: <https://orcid.org/my-orcid?orcid=0000-0002-9332-5511>

Areas of interest

Constructional Materials, Steel and Composite Structures, Testing and Instrumentation, High Performance Steel, Codes and Standards, Structural Fire Engineering, Product Developments.

Academic and Professional Qualifications

MYMC, HKA	Hong Kong Academy of Engineering, Young Member Section	2024
MHKIE	The Hong Kong Institution of Engineers Materials Division	2021
Ph.D.	Department of Civil and Structural Engineering The Hong Kong Polytechnic University, Hong Kong SAR	2005
B.Eng.	Department of Civil and Structural Engineering The Hong Kong Polytechnic University Hong Kong SAR	2000

Professional Experiences

Sep 2004 to Feb 2006	Research Associate, Department of Civil and Structural Engineering, The Hong Kong Polytechnic University (PolyU)
Mar 2007 to Nov 2015	Postdoctoral Fellow, Department of Civil and Structural Engineering, PolyU
Dec 2015 to Mar 2020	Senior Project Fellow , Department of Civil and Environmental Engineering, PolyU Deputy Secretary General , Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch), The Hong Kong Polytechnic University
Apr 2020 to July 2023	Research Assistant Professor , Department of Civil and Environmental Engineering, PolyU Deputy Executive Secretary , Chinese National Engineering Research Centre for Steel Construction (HK Branch), The Hong Kong Polytechnic University
Aug 2023 to the Date	Principal Research Fellow , Department of Civil and Environmental Engineering, PolyU Deputy Executive Secretary , Chinese National Engineering Research Centre for Steel Construction (HK Branch), The Hong Kong Polytechnic University

Summary of Awards received since 2020		Contribution
2026	Grand Prize, Innovative Construction Materials Awards 2026 Materials Division, The Hong Kong Institution of Engineers Project title: Effective Use of S690 and S960 High Strength Steel for Bridge Construction – Welding Technology and Fatigue Performance	2 out of 12
2026	Silver Medal, the 51st International Exhibition of Inventions Geneva, Mar 2026. Leading Expert Advisor for Jumbo Construction Technology Ltd. for a project entitled “JCT Smart Welding Robot V1.0 – "Soudage robotisé automatique grâce à l'intégration de la vision par ordinateur et du balayage laser" ”	1 out of 6
2026	Silver Prize on AI Award 2026, Construction Industry Council , Project Name: JCT AI JUMbot: Pioneering Autonomous AI Welding for Hong Kong Construction, Category: AI Adoption – Robotics (Application No.: AI2026-V-0028)	1 out of 6
2025	Best Performance Award, the CIC Construction Robot Practical Competition (2025). Leading Expert Advisor for Jumbo Construction Technology Ltd. for a project entitled “JCT Smart Welding Robot V1.0”	2 out of 6
2023	Grand Prize on Innovative Applications of HKIE Grand Awards 2023 The Hong Kong Institution of Engineers	2 out of 12
2022	Grand Award Science and Technology Awards 2022 China Steel Construction Society 中国钢结构协会科学技术奖 2022 – 特等奖	3 out of 20
	Grand Award Innovative Construction Materials Awards 2022 Materials Division The Hong Kong Institution of Engineers	2 out of 9
2021	Faculty Awards 2021 in Knowledge Transfer Faculty of Construction and Environment, the Hong Kong Polytechnic University	4 out of 8
	Commendation Merit Award (R&D Project) Structural Excellence Award 2021 Structural Division The Hong Kong Institution of Engineers	2 out of 7
2020	Best Oral Presentation The Second International Conference on Metals and Alloys Organized by the University of Macao, 6-9th December 2020	

Awards

2023

***Grand Prize on Innovative Applications of HKIE Grand Awards 2023
The Hong Kong Institution of Engineers***

The research team of the CNERC for Steel Construction was selected to receive the **Grand Prize** in March 2023 for its excellent achievement in engineering research and innovative applications of high strength S690 steel in construction. The contribution of Dr. Ho to the research is ranked **second** in all these R&D projects, i.e. 2/12.

It should be noted that Dr. Ho is Principal Co-Investigator of 12 research projects conducted at the CNERC since 2016, and he has made significant contributions in the areas of mechanics of steel materials, welding of high strength S690 steel, investigations into microstructural changes of heat-affected zones of welded sections, and hysteric behaviour of high strength S690 steel under seismic actions.

***First Prize of Science and Technology Award 2023 of Guangdong Engineering Survey and Design Industry Association
广东省工程勘察设计行业协会科学技术奖一等奖***

Dr. Ho served as a Committee Member for a Provincial Standard titled "Comfort Evaluation Standard and Control Technical Specification for Wind-Induced Vibration of Tall Buildings." He made substantial contributions to the design parameters for wind vibration under dynamic wind loads in the Greater Bay Area.

2022

***Grand Award, Science and Technology Awards 2022
China Steel Construction Society
中国钢结构协会科学技术奖 2022 – 特等奖***

The joint research team of the Hong Kong Polytechnic University, Tsinghua University, Imperial College London, the Steel Construction Institute, AECOM, China Road and Bridge Corporation, Nanjing Steel Group, Citic Pacific Special Steel Group and Gammon Construction received the Award in February 2023 for its excellent achievements in both academic research and engineering development of high strength S690 steel in construction. Wide applications of Chinese quality high strength S690 steel were successfully promoted in international construction markets. Dr. Ho is ranked **third** among all investigators of the Award, i.e. 3/20.

***Grand Award, Innovative Construction Materials Awards 2022
Materials Division
The Hong Kong Institution of Engineers***

The research team of CNERC for Steel Construction received the award in September 2022 for its successful engineering applications of high strength S690 steel in building construction. Dr. Ho is one of the key investigators, and contributed to the research work of developing constitutive models of S690 steel and their welded sections under various actions, microstructural changes of high strength steel after welding. Dr. Ho is ranked **second** among all investigators of the Award, i.e. 2/9.

2021

Faculty Awards 2021 in Knowledge Transfer**Faculty of Construction and Environment, the Hong Kong Polytechnic University**

The research team of CNERC for Steel Construction received the Award in June 2022 for a successful knowledge transfer of high strength S690 steel into practical engineering applications. Dr. Ho is one of the key investigators of the R&D project, i.e. 4/8.

Commendation Merit Award (R&D Project)***Structural Excellence Award 2021*****Structural Division****The Hong Kong Institution of Engineers**

The research team of CNERC for Steel Construction received the award in 2021 for a research project on attaining experimental evidence on structural adequacy of high strength S690 steel welded joints with different heat energy input.

Dr. Ho is ranked ***second*** among all investigators of the R&D project, i.e. 2/7.

2020

Best Oral Presentation**The Second International Conference on Metals and Alloys****Organized by the University of Macao, 6-9th December 2020**

Dr. Ho was awarded the “Best Oral Presentation” in the area of innovation engineering application of metals and alloys by Prof. M.A. Wahab, Chairman of the Conference and Head of FEM Research Group, Laboratorium Soete, Faculty of Engineering and Architecture, Ghent University, Belgium. The presented paper is entitled as “Determination of True Stress Strain Characteristics of Structural Steels using Instantaneous Area Method”.

Important Contributions

A) Technical Guidelines for Robotic Welding Operations of Structural Steel in Construction 2026, by Building Technology Research Institute

Dr. H. C. Ho and Prof. K. F. Chung have significantly advanced construction automation by co-authoring the "Technical Guidelines for Robotic Welding Operations of Structural Steel in Construction 2026." Their pioneering contribution bridges the critical gap between traditional manual welding standards and cutting-edge robotic fabrication. By developing this much-needed framework, they have empowered the industry to safely integrate automated welding into complex structural steel projects, directly addressing skilled labour shortages while enhancing precision and productivity.

The Technical Guidelines serve as a comprehensive blueprint for modernizing steel construction. Key features include the establishment of stringent quality control metrics and specialized non-destructive testing (NDT) criteria tailored specifically for machine-executed welds. The framework details precise operational parameters for robotic calibration, adaptive control systems, and optimal welding sequences to handle material variations. Furthermore, it establishes rigorous safety protocols for human-robot collaboration in both off-site prefabrication hubs and dynamic on-site environments. By emphasizing real-time monitoring and seamless digital integration, the guidelines ensure exceptional structural integrity while driving the construction sector toward a highly efficient, automated future.

B) Technical Note on structural design of plate girder structures using ultra-high strength 960 MPa steel (2025 Edition), by CEDD, the Government of Hong Kong SAR

Dr. H. C. Ho and Prof. K. F. Chung have played pivotal roles in the advancement of structural design involving ultra-high-strength S960 steel, particularly with the co-authorship of the Technical Note designed for its application. This essential document serves as a comprehensive framework that addresses the unique mechanical properties of 960 MPa steel, effectively bridging traditional design codes, such as Eurocode 3 and the Hong Kong Steel Code, with innovative new applications. Their collaborative efforts led to the successful implementation of the world's first S960 steel pedestrian footbridges—Footbridges F4 and F6—in the Fanling North New Development Area.

The Technical Note outlines fundamental design rules that are crucial for engineers and practitioners working with high-strength materials. Key features include detailed guidelines on material constraints that help ensure the durability and reliability of structures, proactive measures for preventing buckling to enhance stability, and stipulations for the integrity of welded connections to maintain structural strength. Additionally, the document emphasizes sustainable practices and lightweight design principles, encouraging efficiency without compromising safety. Dr. Ho and Prof. Chung's contributions not only advance the field of steel construction but also establish a solid foundation for future engineering projects using S960 steel, setting a high standard for innovative design in urban infrastructure. Their work showcases the critical intersection of research and practical application, enhancing the efficiency and sustainability of modern engineering practices.

C) Code of Practice of the Structural Use of Steel 2011 (2023 Edition)

The CNERC for Steel Construction serves as a Member of the Technical Committee of the Buildings Department for the Code since January 2021. In November 2021, it was proposed by the CNERC to upgrade the Code to include high strength S690 steel for normal use in building construction of Hong Kong SAR.

Dr. Ho was responsible for compilation of comprehensive changes to the Code in materials requirements, design methodology and parameters for practical design, and also on various practical aspects on welding and associated quality assurance. Moreover, Dr. Ho provided

many clarifications and justifications to various comments from government departments and professional bodies during a number of internal consultations over a period of 8 months. The upgraded Code was released by the Buildings Department on 13 March 2023.

D) Application of high strength S690 steel in public works projects

The CNERC for Steel Construction was appointed by the Project Strategy and Governance Office of the Development Bureau of the Government of Hong Kong SAR in December 2021 to provide application of high strength S690 steel in public works projects. A total of 18 construction projects of various works departments including Architectural Services Department, Civil Engineering and Development Department, Drainage Services Department and Highways Department were under reviewed. Re-engineering of the following projects has been completed:

- Kowloon Tsai Swimming Pool Redevelopment (re-design completed, and construction commenced)
- Yuen Long Stadium (re-design completed, and construction commenced)
- Kowloon Bay 48 m long footbridge (under review)
- North New Territories Fanling East By-pass (under review)

Phase I of the consultancy project is HK\$500,000 for a period of 6 months, and its Phase II is extended to HK\$1,200,000 for a period of 12 months. Approval for Phase III with a sum of HK\$2,000,000 is underway. Dr. Ho is the Principal Co-Investigator and Project Manager of the consultancy project.

E) CNERC Laboratory on Mechanics of Steel Materials (LMSM)

Dr. Ho is appointed as the Laboratory in Charge since September 2021, and he has made significant impact on the following academic areas:

- Constitutive models and ductile fracture
Instantaneous Area Method was invented by Dr. Ho to determine the true stress-strain characteristics of steel materials using an integrated theoretical and numerical approach based on measured instantaneous dimensions of tested specimens under different deformation stages. Taking this advantages, non-linear ductile metal fracture evolution model has been developed for numerical modelling of ductile metal fracture. Moreover, micrographic studies on the deformed coupons show that the volumetric fraction of micro-voids at the vicinity of the fractured surface are found to be smaller than 2%, far below its critical value. This observation challenges the validity of the existing void-growth fracture model and other derived fracture models.
- Microstructural evolution within heat affected zones (HAZ) of high strength steel
Due to the variation of the measured cooling rates at various positions of a high strength welded joint, part of the parent steel materials undergoes phase transformation during welding. Thus, the HAZ is composed of a number of crystallization forms with different volumetric fractions of microstructures, leading to heterogeneous mechanical properties of the whole HAZ. To study the microstructural evolution within the heat affected zones, a series of interdisciplinary engineering research have been conducted by the research team of the LMSM under a supervision from Dr. Ho. Based on the test results, it has been possible to correlate key features of various deformation characteristics in the different regions with their corresponding microstructures. It is shown that the required structural performance of high strength S690 welded joint can be safeguarded through careful control of the welding process.

- Cyclic behaviour of high strength steel and their welded sections under seismic actions
Ductility requirements of structural steel under seismic actions have been clearly defined in the literatures as well as in the design standards and codes of practice. Thus, Dr. Ho has input every effort into the hysteretic behaviour of high strength steel and their welded sections under high strain low cycle straining actions. Both engineering and true hysteretic stress strain characteristics of the high strength steel and their welded sections were studied through systematic experimental and numerical investigations, and hence, appropriate design rules for these ductility requirements were proposed.

F) Development of the first CNERC Professional Guide entitled “Selection of Equivalent Steel Materials to European Steel Materials Specifications”

In the past five years, the annual steel production of China exceeds one billion metric tons, accounting for 56% of the world production. Due to different steel materials specifications and structural steel design specifications in different countries, it is difficult for foreign engineers to use Chinese steel due to lack of professional guidance. Therefore, establishing the equivalent design of Chinese steel to promote the wide application of Chinese high-quality steel overseas will provide an important foundation for the development strategy of the Central Government "One Belt & One Road". Dr. HO led the CNERC project team to draft this Professional Guide for international consultant and review. After a number of rounds of comments and responses, the 2021 edition has been successfully published, covering the material specifications of Japan, the United States, and Australia. Dr. Ho also developed the equivalent steel design to cover Russian steel materials specifications in accordance with the requirements of the State Ministry of Science and Technology in 2018.

G) Development of CIC Guidelines on Safety Enhancement of and Notification Arrangement for Truss-out Bamboo Scaffolds, Construction Industry Council

Dr. Ho was appointed as the Structural Engineering Expert of Taskforce on Construction Safety of the Construction Industry Council to develop a Technical Guide to provide information and guidance on particular topics:

- Enhancement of safety requirements for Truss-out Bamboo Scaffolds
- Reference design of steel brackets for Heavy Duty and Special Duty Truss-out Bamboo Scaffolds
- Reference design for four typical structural forms of Truss-out Bamboo Scaffolds
- Proof-load structural tests on the four typical structural forms of Truss-out Bamboo Scaffolds

With the successful launch of this CIC Guidelines, the construction industry is enabled to conduct a good practice for the erection of Truss-out Bamboo Scaffolds to enhance work safety of scaffolders in minor renovation and repair works.

Publications - *International Journal Papers*

1. Li MF, Chung KF, **Ho HC**, and Nethercot NA. (2026). Ductile fracture behaviour of S690 high-strength steel under tension and shear actions. *Journal of Constructional Steel Research* 237A(2026), doi#110099. <https://doi.org/10.1016/j.jcsr.2025.110099>
2. He Q, Yam MCH, **Ho HC**, and Chung KF. (2026). Redefining stress triaxiality for ultra-low cycle fatigue of structural steels. *International Journal of Fatigue*, 207(2026), doi#109520. <https://doi.org/10.1016/j.ijfatigue.2026.109520>
3. Li MF, Chung KF, **Ho HC**, and Nethercot NA. (2026). In-situ X-ray CT investigation on micro-void evolution of S355, S690 and S960 steel towards verification on micro-fracture mechanics. *Construction and Building Materials*, 511(2026). doi#145321. <https://doi.org/10.1016/j.conbuildmat.2026.145321>
4. He Q, Yam MCH, **Ho HC**, and Chung KF. (2025). Cyclic plastic behaviour of high-strength steel Q690: Stress state dependence. *Journal of Constructional Steel Research*, 235(2025), doi#109932. <https://doi.org/10.1016/j.jcsr.2025.109932>
5. Jin H, Zhu MF, Wang YC, Hu YF, **Ho HC**, Chung KF, Nethercot DA, Wang YH, Liu HL, and Xie G. (2025). Investigation into mechanical properties of heat-affected zones in high strength S690 steel welded sections. *Engineering Structures*, 331(2025), doi#119962.
6. Men PF, **Ho HC**, Li TK, Wang XD, Chung KF and Zhou XH. (2024). Experimental assessment on structural behaviour of short concrete-filled S690 steel tubes. *Journal of Constructional Steel Research*, 227(2025), doi#109325.
7. Jin H, Zhu MF, Hu YF, **Ho HC**, Chung KF, Nethercot DA, Wang YH, Liu HL, Xie G. (2024). Investigations into mechanical properties of 50 and 70 mm thick high strength S690 butt-welded sections. *Engineering Structures*, 314(2024), doi#118363.
8. Men PF, **Ho HC**, Zhou XH and Chung, KF. (2024). Experimental investigations into stocky composite columns of concrete-filled circular S690 steel tubes under compression. *Engineering Structures*, 309(2024), doi#118016.
9. Lin, XM, Yam MCH, Song Y, Chung, KF, **Ho HC** and Han Y. (2024). Net section tension capacity of high strength steel single shear bolted connections. *Thin-Walled Structures*, 195(2023), doi#111371.
10. Hu YF, **Ho HC**, Chung KF, Xiao M, Liu X and Nethercot D. A. (2023). Integrated and coordinated numerical simulations on fabrication processes of high strength S690 cold-formed circular hollow sections. *Engineering Structures*, 279(2023), doi#115620.
11. He Q, Yam MCH, Xie Z, **Ho HC**, and Chung KF. (2022). 15. Experimental and modelling study of cyclic plasticity of high strength steel Q690. *Journal of Constructional Steel Research*, 196(2022), doi#107433.
12. **Ho HC**, Chung KF, Xiao TY, Yam MCH and Nethercot DA. (2022). Non-linear necking behaviour of S275 to S960 structural steels under monotonic tension. *Engineering Structures*, 261(2022), doi#114263. <https://doi.org/10.1016/j.engstruct.2022.114263>.
13. **Ho HC**, Guo YB, Xiao M, Xiao TY, Jin H, Yam CHM, Chung KF, and Elghazouli AY. (2021). Structural response of high strength S690 welded sections under cyclic loading conditions. *Journal of Constructional Steel Research*, 182(2021), doi#106696.
14. **Ho HC**, Xiao M, Hu Y F, Guo Y B, Chung KF, Yam MCH and Nethercot DA. (2020). Determination of a full range constitutive model for high strength S690 steels. *Journal of Constructional Steel Research*, 174(2020), doi#106275.
15. Guo YB, **Ho HC**, Chung KF, and Elghazouli AY. (2020). Cyclic deformation characteristics of S355 and S690 steels under different loading protocols. *Engineering Structures*, 221(2020), doi#111093.
16. Chung KF, **Ho HC**, Hu YF, Wang K, Liu X, Xiao M, Nethercot DA. (2020). Experimental Evidence on Structural Adequacy of High Strength S690 Steel Welded Joints with Different Heat Input Energy. *Engineering Structures*, 204(2020), doi#110051.
17. **Ho HC**, Chung KF, Huang MX, Liu X, Jin H, Nethercot DA. Wang GD, and Tin ZH (2020). Mechanical properties of high strength S690 steel welded sections through simulated heat treatment. *Journal of Constructional Steel Research*, 166(2020), doi#105922.

18. **Ho HC**, Chung KF, Liu X, Xiao M and Nethercot. DA. (2019). Modelling tensile tests on high strength S690 steel materials undergoing large deformations. *Engineering Structures*, 192:305-322.
19. Liu X, Chung KF, **Ho HC**, Hou ZX and Nethercot DA. (2018). Mechanical behavior of high strength S690-QT steel welded sections with various heat input energy. *Engineering Structures*, 165: 245-256.
20. **Ho HC**, Liu X, Chung KF, Elghazouli AY and Xiao M. (2018). Hysteretic behaviour of high strength S690 steel materials under low cycle high strain tests. *Engineering Structures*, 165: 222-236.
21. **Ho HC** and Chung KF. (2016). Advanced numerical investigation into structural behaviour of high-strength cold-formed steel lapped Z-sections with different overlapping lengths. *Advances in Structural Engineering*, 20 (7):1074-1097.
22. **Ho HC** and Chung KF (2006). Structural behavior of lapped cold-formed steel Z sections with generic bolted configurations. *Thin Walled Structures*, 44 (4): 466-480.
23. **Ho HC** and Chung KF. (2006). Analytical prediction on deformation characteristics of lapped connections between cold-formed steel Z sections. *Thin Walled Structures*, 44 (1): 115-130.
24. Chung KF, **Ho HC** and Wang AJ. (2005). An investigation into deformation characteristics of lapped connections between cold-formed steel Z sections. *International Journal of Steel Structures*, 5(1): 23 - 32.
25. Chung KF and **Ho HC**. (2005). Analysis and design of lapped connections between cold-formed steel Z sections. *Thin-Walled Structures*, 43 (7): 1071 – 1090.
26. **Ho HC** and Chung KF. (2004). Experimental investigation into the structural behaviour of lapped connections between cold-formed steel Z sections. *Thin-Walled Structures*, 42:1013-1033.

Conference Papers

1. **Ho HC**, Men PF, and Chung KF. (2023). Experimental study into stub square concrete-filled steel tubes under uniaxial compression. ICASS'2023, Kuching, Sarawak, Malaysia, 5-7 December 2023.
2. Li MF, **Ho HC**, and K.F. Chung. (2023). Ductile fracture behavior of S690 high strength steel under monotonic tensile actions. ICASS 2023, Kuching, Malaysia.
3. Zhu MF, Chung KF, and **Ho HC**. (2023). Experimental investigation into the compression resistance of S690 and S960 box sections under a controlled welding process. PSSC 2023, Chengdu, China.
4. Li MF, **Ho HC**, and K.F. Chung. (2023). Determination of true stress-strain relationship of high strength S690 steel using Extended Bridgman's Method. PSSC 2023, Chengdu, China
5. **Ho HC**, Xiao TY, Chen C, and Chung KF. (2020). Determination of true stress strain characteristics of structural steels using Instantaneous Area Method. The 9th Global Conference on Materials Science and Engineering CMSE 2020, Journal of Physics: Conference Series. 1777(2021)012070, doi#:10.1088/1742-6596/1777/1/012070.
6. Guo YB, **Ho HC**, and Chung KF. (2019). Hysteretic behaviour of S690 steel plates and welded sections under cyclic tests with various loading protocols. The 16th East Asia Pacific Conference on Structural Engineering & Construction (EASEC-16), 3 ~ 6 December 2019, Brisbane, Australia. (Paper No.: SS13-05)
7. **Ho HC**, Chung KF, and Guo YB. (2019). Correction of true stress-strain curves of cylindrical and funnel shaped S690 tensile coupons after onset of necking. The 16th East Asia Pacific Conference on Structural Engineering & Construction (EASEC-16), 3 ~ 6 December 2019, Brisbane, Australia. (Paper No.: SS13-02)
8. Chung KF, **Ho HC**, and Liu X, Wang K, and Hu YF. (2019). Compression tests on high strength S690 welded sections with various heat energy input. The 16th East Asia Pacific Conference on Structural Engineering & Construction (EASEC-16), 3 ~ 6 December 2019, Brisbane, Australia. (Paper No.: SS13-01)
9. Chung KF, **Ho HC**, Nethercot DA, Liu X, Wang K, Hu YF & Ma TY. (2018). Investigation into structural behaviour of high strength S690 steels and their welded sections. Proceedings of the

- International Conference on Engineering Research and Practice for Steel Construction 2018 (ICSC 2018), September 2018, Hong Kong, pp 130-139.
10. Chung KF, **Ho HC**, Huang MX, Liu X, Wang GD, Tin ZH and Nethercot DA. (2018). Effect of welding onto mechanical properties of S690 steels. International Conference on Engineering Research and Practice for Steel Construction 2018, Hong Kong, pp 144-152.
 11. **Ho HC**, Liu X, Chung KF, Elghazouli AY & Xiao M. (2018). Mechanical responses of high strength S690 steels under low cycle high strain cyclic deformations. Proceedings of the International Conference on Engineering Research and Practice for Steel Construction 2018, Hong Kong, pp 153-159.
 12. **Ho HC**, Liu X, Chung KF, Xiao M, Yam MCH and Nethercot DA. (2018). True stress-strain characteristics of high strength S690 steels. International Conference on Engineering Research and Practice for Steel Construction 2018, Hong Kong, pp 160-167.
 13. **Ho HC**, Liu X, Chung KF and Xiao M. (2017). Tensile tests on high strength steel materials with high precision measurements. Fifteenth East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-15), 11 ~ 13 October 2017, Xi'an, China. (Paper No.: P1404)
 14. **Ho HC**, Liu X, and Chung KF. (2017). Low cycle high strain cyclic tests on steel coupons of high strength S690 steel welded metals. Fifteenth East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-15), 11 ~ 13 October 2017, Xi'an, China. (Paper No.: P1408)
 15. Liu X, **Ho HC**, and Chung KF. (2017). Strength Reduction of S690-QT Welded Sections under Various Heat Input Energies. Fifteenth East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-15), 11 ~ 13 October 2017, Xi'an, China. (Paper No.: P1412)
 16. **Ho HC**, Liu X, Xiao M and Chung KF. (2016). Experimental investigation into hysteretic behavior of high strength S690 steel under different targeted strains. The Eighth International Conference on Steel and Aluminium Structures, 7 ~ 9 December 2016, Hong Kong.
 17. Chung KF, **Ho HC**, Liu X, and Xiao M. (2016). Low cycle high strain cyclic tests on steel coupons of high strength S690 steel welded sections. The Eighth International Conference on Steel and Aluminium Structures, 7 ~ 9 December 2016, Hong Kong.
 18. **Ho HC**, Liu X, and Chung KF. (2016). Experimental investigation into hysteretic behaviour of high Strength S690 Steel under Different Targeted Strains. The 8th International Conference on Steel and Aluminium Structures (ICSAS 2016), 7 ~ 9 December 2016, Hong Kong, China. (Paper No.: 101)
 19. Chung KF, **Ho HC**, Liu X, and Xiao M. (2016). Low cycle high strain cyclic tests on steel coupons of high strength S690 steel welded sections. The 8th International Conference on Steel and Aluminium Structures (ICSAS 2016), 7 ~ 9 December 2016, Hong Kong, China. (Paper No.: 102)
 20. Chung KF, Yam CHM and **Ho HC**. (2016). Recent developments on design and construction to structural Eurocodes using equivalent steel materials. Eleventh Pacific Structural Steel Conference, 29 ~ 31 October 2016, Shanghai. (Paper No.: 268)
 21. Chung KF, Yam CHM, **Ho HC** and Chan TM. (2016). Adopting Structural Eurocodes – Effective Design to EN 1993-1-1 using equivalent steel materials and structural steelwork. Fourteenth East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-14), 6 ~ 8 January 2016, Vietnam, pp575-582.
 22. **Ho HC**, Liu X, Chan TM and Chung KF. (2016). Hysteretic behavior of Q275 and Q690 structural steel materials. Fourteenth East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-14), 6 ~ 8 January 2016, Vietnam, pp545-551.
 23. Chung KF, **Ho HC** and Nip KH. (2013). Recent developments on design and quality control of galvanized steel members in Pearl River Delta Region. The Pacific Structural Steel Conference (PSSC 2013), 8 to 11 October 2013, Singapore.
 24. Chung KF, **Ho HC** and Nip KH. (2012). Recent developments on design and quality control of galvanized steel members in Hong Kong, Macau, and the Pearl River Delta Region. Proceedings of the First International Conference on Performance-based and Life-cycle Structural Engineering 2012, The Hong Kong Polytechnic University, 5 to 7 December 2012, Hong Kong, CD publication.

25. **Ho HC**, Chung KF and Wong Y. (2011). Structural fire engineering study on unprotected long span steel trusses, The Twelfth East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-12), 26-28 January 2011, Hong Kong, pp372-373 (Extended Abstract).
26. **Ho HC**, Chung KF and Wong Y. (2011). Structural fire engineering study on unprotected long span steel trusses. *Procedia Engineering* 14 :1132-1139.
27. Wong Y, Chung KF and **Ho HC**. (2010). Structural behaviour of unprotected long span steel trusses at elevated temperatures, *Proceedings of The Third International Symposium on Cold-Formed Metal Structures*, Hong Kong, 26 July 2010, pp111-121.
28. **Ho HC** and Chung KF. (2009). Advanced numerical modelling of cold-formed steel Z sections. *Proceedings of 9th International Conference on Steel Concrete Composite and Hybrid Structures 2009*, Leeds, UK, 8 – 10 August 2009, pp795-800.
29. **Ho HC** and Chung KF. (2009). Advanced numerical modelling of cold-formed steel lapped Z-sections with bolted connections. (2009). *Proceedings of 9th International Conference on Steel Concrete Composite and Hybrid Structures 2009*, Leeds, UK, 8 – 10 August 2009, pp789-794.
30. **Ho HC** and Chung KF. Some experience on numerical modelling of cold-formed steel lapped Z-sections. *Proceedings of 6th International Conference on Advances in Steel Structures 2009*, HKSAR, China, 16 – 18 December 2009, pp488-497.
31. Wang AJ, **Ho HC** and Chung KF. (2005). Finite element modelling of cold-formed steel lapped Z sections with bolted moments. *Proceedings of Fourth International Conference on Advances in Steel Structures 2005*, Shanghai, China, 13 – 15 June 2005, Supplementary Volume, pp19-24.
32. Chung KF and **Ho HC**. (2004). Structural behaviour of high strength cold-formed steel Z purlins with overlaps. *Proceedings of the Seventeen International Specialty Conference on Cold-formed Steel Structures*, Orlando, Florida, USA. November 2004, pp777-800.
33. Chung KF and **Ho HC**. (2003). Design of lapped cold-formed steel Z sections incorporating partial continuity at lapped connections. *Proceedings of International Conference on Steel and Composite Structures 2004*, Seoul, Korea, 2-4 September 2004 (CD publication).
34. Chung KF and **Ho HC**. (2003). Deformation characteristics of lapped connections between cold-formed steel purlins of Z sections. *Proceedings of Advances in Structures – Steel, Concrete, Composite and Aluminium*, 23-25 June 2003, Sydney, Australia, pp281-288.
35. **Ho HC** and Chung KF. (2002). Structural analysis on lapped moment connections between cold-formed steel Z sections. *Proceedings of the Second International Conference on Stability and Dynamic*, December 2002, Singapore, pp675-680.
36. **Ho HC** and Chung KF. (2002). Practical design of roof systems using cold-formed steel Z-sections. *Proceedings of the Third International Conference on Advances in Steel Structures*, Hong Kong, December 2002, pp445-452.
37. **Ho HC** and Chung KF. (2002). An experimental investigation into lapped moment connections between Z sections. *Proceedings of the Third International Conference on Advances in Steel Structures*, Hong Kong, December 2002, pp437-444.

Invited Papers

1. Chung KF and **Ho HC**. (2004). Design development for purlin systems using cold-formed steel Z sections. *Proceedings of International Symposium on 'Worldwide Codification Design and Technology in Steel Structures'*. 9-10 February 2004. The Hong Kong Institute of Steel Construction (2004) pp98-111.
2. Chung KF, Yu WK, **Ho HC**. and Wang AJ. (2005). Advances in analysis and design of cold-formed steel structures. *Proceedings of the Annual Seminar on Advances in Structural Codification for Buildings*. Joint Structural Division of the Hong Kong Institute of Engineers and the Institution of Structural Engineers, U.K., Hong Kong, 7 June 2005, pp67-88.
3. Chung KF and **Ho HC**. (2006). Design development for high strength cold-formed steel lapped Z sections with overlaps. *The Second International Symposium on Cold-formed Metal Structures*. The Hong Kong Polytechnic University, Hong Kong, 8 December 2006, pp45-64.

Teaching Experience

Sep to Dec 2020	CSE28362	Structural Steel Design, Year 2, Higher Diploma in Civil Engineering
Sep to Dec 2021	CSE 577	Advanced Steel Structure Design MSc. in Civil Engineering
Sep to Dec 2022	CSE 577	Advanced Steel Structure Design MSc. in Civil Engineering
Sep to Dec 2023	CSE 577	Advanced Steel Structure Design MSc. in Civil Engineering
Sep to Dec 2024	CSE 577	Advanced Steel Structure Design MSc. in Civil Engineering

Professional / Technical Guides

1. Chung KF , **Ho HC**, Hu YF, and Yam CHM.
The Second Edition of Technical Guide on Effective Design and Construction to Structural Eurocodes: EN1993-1-1 Design of steel structures – S235 to S690. 2021.
Publisher: Construction Industry Council.
2. Chung KF , **Ho HC**, Hu YF, and Yam CHM.
The Second Edition of Technical Guide on Effective Design and Construction to Structural Eurocodes: EN1993-1-1 Design of steel structures – S235 to S690. 2021.
Publisher: Construction Industry Council.
3. Chung KF, **Ho HC**, and Feng W.
The Second Edition of Selection of Equivalent Steel Materials to European Steel Materials Specifications.
Publisher: Chinese National Engineering Research Centre for Steel Construction, 2021.
The Hong Kong Polytechnic University
4. 主編單位: 廣東省建築科學研究院 李慶祥、許偉、肖丹玲、孫立德
參編單位: 香港理工大學 何浩祥
 深圳市建築設計研究院 劉臣、區彤
 廣東省建築設計研究院 張劍、汪大洋、許謙、陳星
高层建筑风振舒适度评价标准及控制技术规程
Publisher: 广东省住房和城乡建设厅, 2021.
5. Chung KF , Yam CHM and **Ho HC**.
Technical Guide on Effective Design and Construction to Structural Eurocodes: EN1993-1-1 Design of steel structures. 2015.
Publisher: Construction Industry Council.
6. Chung KF, **Ho HC** and Nip, KHA.
Corrosion Protection to Exposed Steel Members using Hot-dip Galvanization in Hong Kong. 2011.
Publisher: Hong Kong Constructional Metal Structures Association.

Technical reports on high level consultancy projects with major technical contribution

1. Project: Product development of profiled steel decking Bardek using G550 steel and fire test assessment
 Client: GENS Metal Corporation (Taiwan) Ltd.
 Period: January 2007 ~ March 2007
 Reports: -- Test Report on Profiled Steel Decking – BARDEK (BD65 t = 1.5mm G450)
 -- Test Report on Composite Slabs using Profiled Steel Decking – BARDEK
 -- Design Report on Composite Slabs using Profiled Steel Decking – BARDEK
 -- Technical Report on Composite Slabs using Innovative Profiled Steel Deckings BARDEK according to Structural Fire Engineering Design.

2. Project: Structural behaviour of unprotected steel beams in building construction under fires
 Client: Institute of Steel Development and Growth (INSDAG), India.
 Period: April 2008 ~ October 2008
 Reports: -- Load-bearing Fire Test Report on Unprotected Steel Beams in accordance with BS476: Parts 20 & 21: 1987

3. Project: Structural fire engineering consultancy for Tin Shui Wai Public Library cum Indoor Recreation Centre – Structural fire engineering analysis and design
 Client: Ove Arup & Partners Hong Kong Limited for Architectural Services Department
 Period: July 2010 ~ October 2010
 Reports: -- Technical Report on Structural Fire Engineering Consultancy for Tin Shui Wai Public Library cum Indoor Recreation Centre

4. Project: Assessment on the service life of 4-bar window hinges of metal window frames
 Client: Hong Kong Housing Authority
 Period: November 2010 ~ March 2011
 Reports: -- Technical Assessment on the Service Life of 4-bar Window Hinges of Metal Window Frames

5. Project: Corrosion engineering study for Macau Studio City MSC Project
 Client: Hilti (Hong Kong) Ltd.
 Period: September 2013 ~ November 2013
 Reports: -- Technical Report on Corrosion Engineering Study of Macau Studio City MSC Project

6. Project: Structural Fire Engineering Appraisal on Utility Chambers of the Lion Rock Tunnels
 Client: Highways Department of the Government of Hong Kong SAR
 Period: July 2013 ~ December 2013
 Reports: -- Technical Report on Structural Fire Engineering Appraisal on Utility Chambers of the Lion Rock Tunnels

7. Project: Selection of Equivalent Steel Materials to European Steel Specifications
 Client: Hong Kong Constructional Metal Structures Association
 Period: January 2013 ~ June 2015
 Reports: -- Technical Report on Selection Principles of Equivalent Steel Materials to European Steel Specifications

8. Project: Structural Fire Engineering Appraisal on Cross-Harbour Tunnel and Associated Studies
 Client: Mott MacDonald Hong Kong Limited
 Period: September 2016 ~ March 2017
 Reports: -- Report on Fire Risks and Improvement Measures (Cross-Harbour Tunnel)

9. Project: Experimental investigation into structural behaviour of light precast reinforced concrete slabs – Bubble Deck
 Client: Advanced and Sustainable Technologies Limited
 Period: September 2017 ~ December 2018
 Reports: -- Technical Report on structural behaviour of light precast reinforced concrete slabs – Bubble Deck

10. Project: Engineering design and structural tests for truss-out bamboo scaffolds for CIC
 Client: Construction Industry Council
 Period: June 2020 ~ August 2020
 Reports: -- Design Report on Truss-out Bamboo Scaffoldings

11. Project: Structural Fire Engineering Appraisal on Eastern Harbour Crossing and Associated Studies
 Client: Mott MacDonald Hong Kong Limited
 Period: November 2020 ~ March 2021
 Reports: -- Report on Fire Risks and Improvement Measures (Eastern Harbour Crossing)

12. Project: Welding quality control on S690 fabricated box sections for Cross Bay Link of Tseung Kwan O
 Client: China Road and Bridge Corporation
 Period: October 2020 ~ September 2021
 Reports: -- Technical Report on Structural Performance of S690 Fabricated Sections

13. Project: Technical assessment on effective construction using Q690qD steels in bridges
 Client: China Civil Engineering Construction Corporation
 Period: October 2020 ~ June 2021
 Reports: -- Technical Report on Design and Construction using Q690qD steels in bridges

14. Project: Development of modified Truss-out Bamboo Scaffoldings
 Client: Labour Department, the Government of Hong Kong SAR
 Period: October 2021 ~ March 2022
 Reports: -- Design Report on Suspended Truss-out Bamboo Scaffoldings

15. Project: Technical assessment on flexural resistances of S960 welded box sections
 Client: Chun Wo Construction
 Period: March 2025 ~ April 2025
 Reports: -- Test report on flexural resistances of S960 welded box sections

Research Project Management

1. *Project funded by CNERC for Steel Construction (Hong Kong Branch)*

Title: Mechanical properties of high strength steels (S690 ~ S960) and their welded sections

Position: Project Investigator

Project sum: HK\$0.60 million

Duration: 2 years from July 2021 to June 2023

2. *Project funded by CNERC for Steel Construction (Hong Kong Branch)*

Title: Laboratory of Mechanics and Steel Materials

Position: Project Investigator

Project sum: HK\$0.60 million

Duration: 2 years from July 2021 to June 2023

3. *Project funded by Labour Department, the Government of Hong Kong SAR*

Title: Development of modified Truss-out Bamboo Scaffolds using structural bamboo

Position: Project Investigator

Project sum: HK\$0.38 million

Duration: 6 months from October 2021 to March 2022

4. *Project funded by Start-up Fund for RAPs under the Strategic Hiring Scheme (PolyU/UGC)*

Title: Structural Performance of High-performance Concrete-Filled-Steel-Tube (CFST) composite columns using high strength S690 steels and high strength concrete

Position: Project Investigator

Project sum: HK\$0.25 million

Duration: 2 years from June 2021 to March 2023

5. *Project funded by CNERC for Steel Construction (Hong Kong Branch)*

Title: Optimization of welding technology of high strength S690 steel and development of smart welding monitoring and quality control system

Position: Project manager

Project sum: HK\$3.0 million

Duration: 2 years from September 2020 to August 2022

6. *Project funded by CNERC for Steel Construction (Hong Kong Branch)*

Title: Sustainable Infrastructure Development for Modern Steel Construction

Position: Co-Investigator

Project sum: HK\$11.5 million

Duration: 3 years from December 2018 to November 2021

7. Project funded by Ministry of Science and Technology of the PRC (MOST)

Title: Structural Design of Quality Chinese Steel Material to Eurocode 3: Design of Steel Structures

Position: Co-Investigator

Project sum: HK\$1.0 million

Duration: 3 years from January 2018 to December 2020

8. Project funded by CNERC for Steel Construction (Hong Kong Branch)

Title: Effective use of high performance steel materials (Q690 ~ Q960)

Position: Senior Project Fellow

Project sum: HK\$5.0 million

Duration: 3 years from September 2016 to August 2018

9. Project funded by CNERC for Steel Construction (Hong Kong Branch)

Title: Advanced Numerical Analyses for Building Structures Using High Performance Steel Materials

Position: Co-Investigator

Project sum: HK\$2.0 million

Duration: 2 years from September 2016 to August 2018

10. Project funded by CNERC for Steel Construction (Hong Kong Branch)

Title: Application of High Performance Steel-concrete Composite Structures

Position: Co-Investigator

Project sum: HK\$2.0 million

Duration: 2 years from September 2016 to November 2018

11. Project funded by CNERC for Steel Construction (Hong Kong Branch)

Title: Robotic welding systems with computer vision and pattern recognition for high strength steels.

Position: Project manager

Project sum: HK\$2.0 million

Duration: 3 years from September 2016 to August 2019

12. Project funded by CNERC for Steel Construction (Hong Kong Branch)

Title: Visually guided robot welding system for on-site application.

Position: Project manager

Project sum: HK\$1.5 million

Duration: 3 years from September 2016 to August 2019

13. Project funded by CNERC for Steel Construction (Hong Kong Branch)

Title: Effective High Strength Steel Construction for Sustainable Infrastructure
Development in Hong Kong

Position: Co-Investigator

Project sum: HK\$2.0 million

Duration: 3 years from December 2015 to November 2018

14. Project funded by Construction Industry Council, Hong Kong SAR

Title: Adopting Eurocodes by Hong Kong construction Industry – Technical guide
on effective design and construction to European Steel Code EN 1993-1-1

Position: Project Fellow

Project sum: HK\$0.98 million

Duration: 1 years from May 2014 to June 2015

15. Project funded by Innovation and Technology Fund, The Government of HKSAR

Title: Enhanced durability and mechanical performance of structural steel
members using an innovative galvanization process

Position: Project Fellow

Project sum: HK\$2.2 million

Duration: 2 years from May 2012 to October 2013

16. Project funded by Innovation and Technology Fund, The Government of HKSAR

Technology Area :Nano-materials; Functionalization & Applications

Title: Enhanced ductility and service life of galvanized structural steel members

Position: Project Fellow

Project sum: HK\$5.0 million

Duration: 2 years from July 2009 to June 2011

Invited Lectures

Date	Technical events	Title of presentation
24 MAR 2023	冷彎行業高峰論壇 Organizer: <i>中國鋼結構協會冷彎型鋼分會</i>	Structural performance of high strength S690 cold formed steel sections S690 高強冷彎焊接管狀結構
20 FEB 2023	Technical Seminar on High Strength Structural Steel Organizer: <i>Buildings Department, the Government of HKSAR</i>	Structural requirements of high strength S690 steel · Manufacturing process; · Chemical compositions; · Mechanical properties; · Mill Certificates; · Acceptance criteria.
7 FEB 2023	Technical Seminar on Efficient Design and Application of High Strength Steel Organizer: <i>Hong Kong Housing Authority and Housing Department</i>	Effective use of high strength S690 steel in Construction
22 JUN 2022	Technical Webinar on “Effective design and construction of high strength S690 steel in engineering structures” Organizer: <i>Structural Division of the Hong Kong Institution of Engineers</i>	Effective design and construction of high strength S690 steel in engineering structures
30 SEP 2021	CNERC Annual Technical Symposium 2021 Organizer: <i>Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch); Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University;</i>	Design and Construction using High Quality Chinese Steels in Hong Kong and Beyond

02 DEC 2020	CNERC Research Seminar 2020 Organizer: <i>Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch); Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University;</i>	Determination of a full range constitutive model for high strength S690 steels with damage evolution
27 OCT 2017	Technical Seminar on Effective Design and Construction to Structural Eurocodes, Hong Kong SAR Organizer: <i>China Constructional Metal Structures Association; Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University;</i>	Effective Design and Construction using EN 1993 in Hong Kong
24 JUN 2016	Technical Seminar on Effective Design and Construction to Structural Eurocodes, Hong Kong SAR Organizer: <i>China Constructional Metal Structures Association; Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University;</i>	Effective Design and Construction using EN 1993 in Hong Kong
24 APR 2014	Technical Symposium on Effective Use of Cold-formed Steel Structures in Building Construction Organizer: <i>China Constructional Metal Structures Association; Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University;</i> Industrial Support: <i>Construction Industry Council, HKSAR, and; The Institution of Civil Engineers Hong Kong Association.</i>	· Design of cold-formed steel sections · Section analysis on cold-formed steel sections · Structural behavior of cold-formed steel purlin system Practical design and worked examples

19 JUN 2013	冷彎型鋼與交通高峰論壇 Organizer: 中國鋼結構協會 - 冷彎型鋼分會	Long term performance of metal building envelopes 現代金屬圍護結構的長期性能
8 AUG 2011	Technical Symposium on Effective Use of Cold-formed Steel Sections in Building Construction Organizer: <i>China Constructional Metal Structures Association; Guangdong Province Society for Spatial Structures; Hong Kong Constructional Metal Structures Association, and; Macau Society of Metal Structures</i>	Design and construction of Tin Shui Wai Public Library cum Indoor Recreation Centre
6 OCT 2009	Professional Workshop on Effective Use of Profiled Steel Deckings in Building Construction Organizer: <i>Department of Civil and Structural Engineering, PolyU The Institute of Cold-formed Metal Structures</i>	· Practical design of profiled steel deckings in construction and composite stages · Fire resistant design of composite slabs with various reinforcement arrangements
3 JUN 2009	Technical Symposium on Effective Use of Cold-formed Steel Sections in Building Construction Organizer: Department of Civil and Structural Engineering, PolyU The Institute of Cold-formed Metal Structures	· Section analysis on cold-formed steel sections · Design development for high strength cold-formed steel Z-sections with overlaps · Practical design of cold-formed steel purlin systems ·
3 OCT 2008	Technical Symposium on Effective Use of Profiled Steel Deckings in Building Construction Organizer: <i>The Institute of Cold-formed Metal Structures</i>	· Practical design of profiled steel deckings in construction and composite stages · Fire resistant design of composite slabs with various reinforcement arrangements

Scholarly Activities

1. *Hong Kong Constructional Metal Structures Association*

Position: Technical Executive since 2011

Responsibility: Managing and conducting research and development projects
Organizing technical activities including technical symposia and technical visits
Liaising with the counterparts from Mainland

2. *The Institute of Cold-Formed Metal Structures*

Position: Technical Director since 2012

Responsibility: Organizing technical activities including technical symposia and technical visits

3. *Committee of Building Structures, Chinese Confederation of Roll Forming Industry*

Position: General Secretary since 2015

Responsibility: Managing and conducting research and development projects
Organizing technical activities visits and technical symposia