

# CNERC

# NEWSLETTER

AUGUST 2022 ISSUE

MAY - AUG 2022

## CNERC MANAGEMENT COMMITTEE MEETING



Ir Lau Chun-kit JP Permanent Secretary for Development (Works) of the Government of Hong Kong SAR is Chairman of the Management Committee of CNERC.

Ir Prof. K.F. Chung, Director, and Ir Prof. Michael C.H. Yam, Deputy Director & Executive Secretary reported to Ir Lau on recent development and innovative engineering applications of high strength S690 and S960 steel in construction.



Meeting with Permanent Secretary for Development (Works), Ir Ricky Lau Chun Kit, JP at the Central Government Offices of HKSAR on 26 August 2022.

# FEATURE STORY

## CNERC Annual Technical Symposium 2022

CNERC Annual Technical Symposia are organized as technical platforms to promote technical discussions and exchange among research personnel of CNERC. The first Annual Technical Symposium was held in mid-2020, and favorable responses from Project Investigators and their respective research teams.

The CNERC Annual Technical Symposium 2022 was held on 26 August 2022 as a half-day event, and it was our honour to have Ir John Kwong, Head of Project Strategy and Governance Office of Development Bureau, and Ir H. S. Kan, Government Engineer of Civil Engineering and Development Department, both of the Government of Hong Kong SAR, being our Honorable Judges. An invited presentation was made by Dr. H. F. Hu, Research Assistant Professor of CNERC, and there were a total of 7 presentations made by Postdoctoral Fellows and senior research students.



From left: Dr. T. M. Chan, Ir H. S. Kan, Prof. K. F. Chung, Ir John Kwong, Prof. Michael Yam, Dr. Lilian Hui, and Dr. Andy Leung.

The Symposium was kicked off with a welcome speech by Prof. K. F. Chung, Director of CNERC, and followed with an invited presentation by Dr. Y. F. Hu.





Prof. K. F. Chung made a welcome speech.



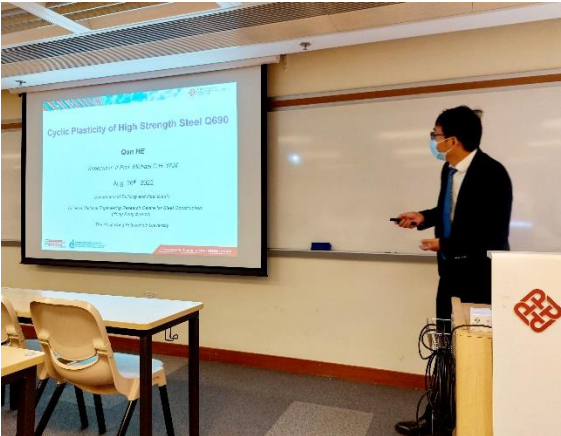
Dr. Y. F. Hu presented on “Structural behaviour of T-joints between high strength S690 steel cold-formed circular hollow sections”.



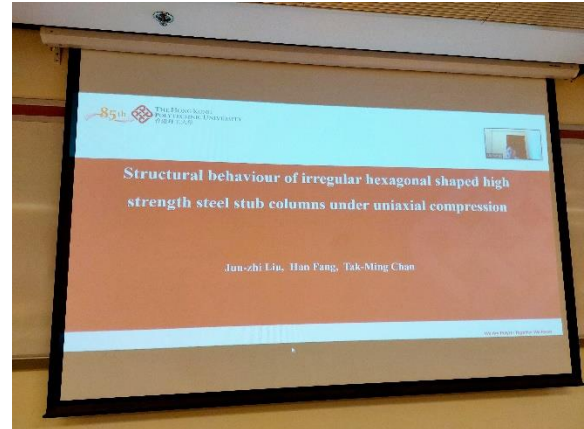
Dr. Chen WANG, Postdoctoral Fellow (CEE) presented on “Seismic Design and Parametric Study of Steel Modular Frames with Distributed Seismic Resistance”.



Mr. Eric YUEN, Research Associate (CEE) presented on “Recent development on corrosion protection and monitoring for MiC buildings in Hong Kong”.



Mr. Qun HE, Research Student (BRE) presented on “Cyclic Plasticity of High Strength Steel Q690”.



Dr. Junzhi LIU, Postdoctoral Fellow (CEE) presented on “Structural behaviour of irregular hexagonal shaped high strength steel stub columns under uniaxial compression”.



Mr. Jeffery ZHOU Peng, Research Student (ME) presented on “Automatic Vision-based Seam Detection and Path Planning for Robotic Welding/Sealing System”.



Ms. Qingyang ZHAO, Research Assistant (BRE) presented on “Superelastic SMA plates: mechanical properties and application”.



Mr. Hao JIN (presenter) and Ms. Mengfei ZHU, Research Associates (CEE) presented on “Effects of Welding to Mechanical Properties of High Strength S690 Steels: Multi-pass Welding in Thick Plates”.

After deliberation among members of the Judging Panel including Ir John K. S. Kwong JP, Ir H. S. Kan, and Prof. K. F. Chung, the following research personnel were selected as winners of the Young Researchers Competition 2022:

***CNERC Outstanding Young Researcher Awards 2022***

Mr. Hao JIN (presenter) and Ms. Mengfei ZHU,  
Department of Civil and Environmental Engineering  
Mr. Jeffery ZHOU Peng, Department of Mechanical Engineering

***CNERC Young Researcher Awards 2022***

Dr. Chen WANG, Department of Civil and Environmental Engineering  
Mr. Eric YUEN, Department of Civil and Environmental Engineering  
Mr. Qun HE, Department of Building and Real Estate  
Dr. Junzhi LIU, Department of Civil and Environmental Engineering

***CNERC Young Researcher Merit Award 2022***

Ms. Qingyang ZHAO, Department of Building and Real Estate



## **CNERC Annual Technical Symposium 2022**

**Date: 26 August 2022 (Friday)**

**Time: 9:00 a.m. – 12:30 p.m.**

**Venue: Z504, The Hong Kong Polytechnic University**

<b>Time</b>	<b>Activities</b>
9:00 – 9:25 a.m.	Opening Remarks Invited Lecture Presentation title: “ <i>Structural behaviour of T-joints between high strength S690 steel cold-formed circular hollow sections</i> ”  Dr. Y. F. HU, Research Assistant Professor, CEE & CNERC-Steel
9:25 – 9:45 a.m. 9:45 – 10:05 a.m. 10:05 – 10:25 a.m.	(1) Dr. Chen WANG, “Seismic Design and Parametric Study of Steel Modular Frames with Distributed Seismic Resistance” (2) Mr. Eric YUEN Ka Fai, “Recent Development on Corrosion Protection and Monitoring for MiC Buildings in Hong Kong” (3) Mr. Qun HE, “Cyclic Plasticity of High Strength Steel Q690”
10:25 – 10:35 a.m.	Break
10:35 – 10:55 a.m. 10:55 – 11:15 a.m. 11:15 – 11:35 a.m. 11:35 – 11:55 a.m.	(1) Dr. Junzhi LIU, “Structural Behaviour of Irregular Hexagonal Shaped High Strength Steel Stub Columns under Uniaxial Compression” (online viz ZOOM) (2) Mr. Jeffery ZHOU Peng, “Automatic Vision-based Seam Detection and Path Planning for Robotic Welding/Sealing System” (3) Ms. Qingyang ZHAO, “Superelastic SMA plates: mechanical properties and application” (4) Mr. Hao JIN, “Effects of Welding to Mechanical Properties of High Strength S690 Steels: Multi-pass Welding in Thick Plates”
12:00 – 12:30 p.m.	Judging Panel Discussion

# Effective Use of High Strength S690 to S960 Steel in Construction, Cover Story of "The Journal of The Hong Kong Institution of Engineers" (Vol. 50, May 2022)



Full version of the Cover Story can be downloaded at: [https://www.polyu.edu.hk/cnerc-steel/images/news\\_events/previous\\_events/20220508.pdf](https://www.polyu.edu.hk/cnerc-steel/images/news_events/previous_events/20220508.pdf)

## Meeting with Ir Edwin K. F. Chung, President of HKIE

Prof. K. F. Chung, Director of CNERC led a team including Dr. H. C. Ho, Deputy Executive Secretary of CNERC, Dr. Y. F. Hu, Research Assistant Professor and Miss Catherine Ng, Executive Officer to visit the Headquarters of The Hong Kong Institution of Engineers (HKIE) on 24 May 2022.





# NEWS

In this quarter, CNERC has arranged many laboratory tours cum technical meetings including visitors from works departments of the Government of Hong Kong SAR, professional bodies, and industrial counterparts.



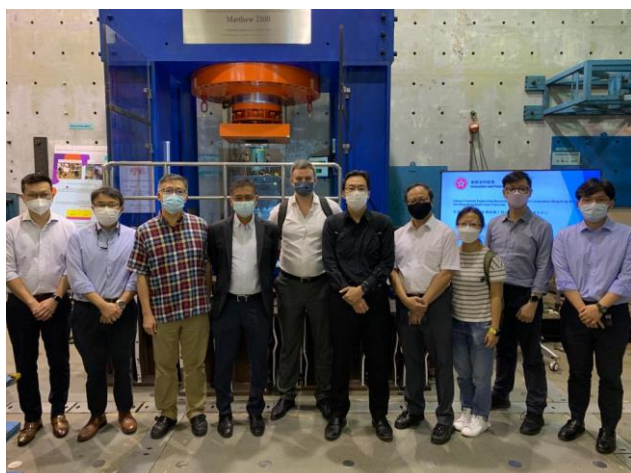
Delegates from The Hong Kong Institution of Engineers Materials Division visited CNERC on 13 May 2022.



Ir Thomas Ho On-sing, Chairman of the Construction Industry Council (CIC) led a Delegation Team to visit CNERC on 25 May 2022.



Delegates from Build King Holdings Limited visited CNERC on 18 May 2022.



Mr. C. C. Hau, Executive Director of Gammon Construction Limited led a number of engineers and Project Managers to visit CNERC on 23 June 2022.



The Honorable Mr. Duncan Chiu, Member of the Legislative Council for the Technology and Innovation Functional Constituency visited CNERC on 14 July 2022.





Mr. William Ho, Principal of Sheung Shui Campus of the Hong Kong Institute of Construction, Construction Industry Council and a team of instructors to discuss about a new training programme on welding of high strength S690 steel on 19 July 2022.



Visit of delegates from Mannings Consultants Limited on 9 August 2022.



Mr. Xiu Yan, Managing Director of China Civil Engineering Construction Corporation and his team visited CNERC on 11 August 2022.





Visit of Civil Engineering and Development Department of the Government of Hong Kong SAR for discussion on Applied R&D in Public Works on 4 August 2022.



Visit of Architectural Services Department and Buildings Department of the Government of Hong Kong SAR for discussion on Applied R&D in Public Works on 17 August 2022.



# CONFERENCES & SEMINARS

During the pandemic, CNERC participated actively in various conferences and seminars from time to time.



The poster for the CIC Power Talk event features a grey background with a city skyline at the bottom. At the top, the Construction Industry Council (CIC) logo and 'POWER TALK' branding are displayed. The title '「組裝合成」建築腐蝕防護和監測的最新發展' is prominently shown, followed by its English translation. The date and time '10.06.2022 | 16:00 - 17:00' are highlighted in a yellow box. Two speakers are featured: Prof. CHUNG Kwok-fai, Director of the Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch), and Mr. Felix TANG, Project & Development Director of Hong Kong Science and Technology Parks Corporation.

CONSTRUCTION INDUSTRY COUNCIL 建造業議會 | Construction Industry Council **POWER TALK**

**「組裝合成」建築腐蝕防護和監測的最新發展**  
Recent Development on Corrosion Protection and Monitoring for MiC Buildings in Hong Kong

10.06.2022 | 16:00 - 17:00

**鍾國輝教授 Prof. CHUNG Kwok-fai**  
國家鋼結構工程技術研究中心香港分中心主任  
Director of Chinese National Engineering Research Centre for Steel Construction (Hong Kong Branch)

**鄧栢齡先生 Mr. Felix TANG**  
香港科學園項目及發展總監  
Project & Development Director of Hong Kong Science and Technology Parks Corporation

CIC Power Talk – “Recent Development on Corrosion Protection and Monitoring for MiC Buildings in Hong Kong” held online on 10 June 2022.



Prof. K. F. Chung, Director of CNERC, was invited to be a Keynote Speaker at the EASEC-17, and his presentation was entitled “Effective use of high strength S690 steel in construction and effects on their mechanical properties after welding”.





Prof. K. F. Chung, Director of CNERC, was invited as a Keynote Speaker to make an on-line presentation at the CTIL Technical Seminar on High Performance Steel and Concrete Materials for Sustainable Construction which was organized by the Construction Technology Innovation Laboratory of the Singapore Institute of Technology (SIT) on 13 July 2022.



Hong Kong Alliance of Technology and Innovation BOCHK Science and Technology Innovation Award Establishment and Launch Ceremony on 15 July 2022.



# AWARDS

中国钢结构协会科学技术奖申报

**国产690MPa高强钢结构基础理论与应用  
关键技术及其国际化实践  
科学技术成果汇报**

牵头单位：香港理工大学 清华大学  
完成人员：钟国辉 班慧勇 何浩祥  
胡亦非 石永久 等  
2022年7月16日

完成单位	完成人员
香港理工	钟国辉
清华大学	班慧勇
帝国理工	何浩祥
英国SCI	胡亦非
AECOM	石永久
中国路桥	Netherool
振华重工	任志浩
南京钢铁	杨立伟
中信泰富	Sham
金门建筑	Elghazouli
	陈德明
	Baddoo
	阚军
	马立芬
	沈敏慧
	刘丽华
	陈志发

香港理工大学-钟国辉的屏幕共享

钟国辉 班慧勇 何浩祥  
胡亦非 石永久 Netherool  
任志浩 杨立伟 Sham  
Elghazouli 陈德明 Baddoo  
阚军 马立芬 沈敏慧  
刘丽华 陈志发

完成人员

On 16 July 2022, Prof. K. F. Chung, Director of CNERC together with Dr. H. C. Ho and Dr. Y. F. Hu, as well as Prof. Y. J. Shi and Dr. H. Y. Ban of Tsinghua University completed the evaluation meeting of China Steel Construction Society – Scientific and Technological Achievement Evaluation Meeting on “Basic Theory, Key Technology and International Application of Chinese 690MPa High-strength Steel Structures”.

 THE HONG KONG POLYTECHNIC UNIVERSITY  
香港理工大学

 國家鋼鐵工程技術研究中心香港分中心  
Chinese National Engineering Research Centre  
For Steel Construction (Hong Kong Branch)

**Announcement**

We are honoured to receive

**Grand Award**

Innovative Construction Materials Award 2022  
Materials Division

 THE HONG KONG INSTITUTE OF ENGINEERS  
香港工程師學會

for our research work on

**Effective use of high strength S690 steel and associated welding technology  
in construction**

as announced by the **HKIE Materials Division**  
at the Annual General Meeting on 7 June 2022.

We are honoured to receive the **Grand Award** of the Innovative Construction Materials Awards 2022 of the Materials Division of the Hong Kong Institution of Engineers (HKIE) for our research work on “**Effective use of high strength S690 steel and associated welding technology in construction**” as announced by the HKIE Materials Division at its Annual General Meeting on 7 June 2022.

## CONTACT US

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