



**NANYANG  
TECHNOLOGICAL  
UNIVERSITY**  
SINGAPORE



## **CUS-CHEC-SJ Seminar on Advanced Ground Improvement for Marine and Coastal Infrastructure**

**Date:** 2 April 2026 (Thursday)

**Time:** 1330 to 1700

**Venue:** Ballroom 2, Level 3, Amara Singapore, 165 Tanjong Pagar Road, Singapore 088539

**Co-Hosted By:** Centre for Urban Solutions (CUS), Nanyang Technological University, Singapore  
China Harbour (Singapore) Engineering Company Pte. Ltd. (CHEC)  
Surbana Jurong Consultants Pte Ltd (SJ)

**Registration:** Please click [here](#) to register. Admission is free.

**PDU:** Pending from Professional Engineers Board Singapore

### **About the Seminar**

With more developments along the coastal areas for either infrastructure or coastal protection, there is an increasing demand for reliable, resilient, and sustainable ground improvement solutions. This seminar, themed "Advanced Ground Improvement for Marine and Coastal Infrastructure", brings together engineers, researchers, and policymakers to examine proven and emerging techniques for coastal soil improvement to support successful delivery of coastal projects. From deep cement mixing to biogrouting, participants will explore how technical innovation, digital QA, and sustainable practices can de-risk infrastructure development in complex marine environments.



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### **About CUS, CHEC, SJ**

#### **CENTRE FOR URBAN SOLUTIONS (CUS) | NTU SINGAPORE**

CUS aims to provide leadership in research and development in innovative solutions for sustainable living and infrastructures for future cities. The research directions of CUS in the past included (1) Waste for Urban Infrastructure; (2) Novel Construction Materials; (3) BIM and Construction Digitalization; (4) Underground Engineering; (5) Infrastructure System; and (6) Coastal and Usable Space. The research on Waste for Urban Infrastructure has been integrated into TREASURES, a new research centre jointly established by the National Environment Agency (NEA) and NTU.

#### **CHINA HARBOUR (SINGAPORE) ENGINEERING COMPANY PTE. LTD. (CHEC)**

CHEC is leading a research project on key technologies for the construction of large-scale artificial islands along Belt and Road. Members of the research team include specialists and researchers from Department of Infrastructure Engineering, University of Melbourne, and Tianjin Research Institute for Water Transport Engineering, Ministry of Transport, China. CHEC Singapore has been in operation in Singapore since 1986.

#### **SURBANA JURONG CONSULTANTS PTE LTD (SJ)**

Surbana Jurong (SJ) is a global consultancy specialising in urban, infrastructure and managed services. With over 75 years of experience and 16,000 specialists across more than 40 countries, SJ provides multidisciplinary expertise to deliver sustainable, resilient and innovative solutions for the built environment.

## CUS-CHEC-SJ Seminar on Advanced Ground Improvement for Marine and Coastal Infrastructure

Seminar Programme | 2 April 2026 (Thursday)

Time	Speaker	Title of Presentation
1330 – 1335	Professor <u>Chu Jian</u> Director, CUS, NTU	Welcome Address by NTU
1335 – 1340	Mr <u>Feng Liangji</u> Chairman, CHEC	Welcome Address by CHEC
1340 – 1345	Mr James <u>Lam</u> Executive Director, SJ	Welcome Address by SJ
1345 – 1410	Professor <u>Chu Jian</u> Director, CUS, NTU	1. Biogrouting for Low Carbon Geotechnical Applications
1410 – 1450	Professor <u>He Hongtao</u> Director of Geotechnical Institute (Overseas Department), CHEC	2. Ground Improvement using DCM Method for Marine Works
1450 – 1510	Tea Break & Networking	
1510 – 1540	Mr <u>Ning Jinjin</u> Chief Engineer, CHEC	3. Recent DCM Construction Technologies for Marine projects
1540 – 1600	Dr <u>Wang Cui</u> Technical Director of Geotechnical Engineering, CHEC UTC	4. Design and Construction of DCM for the IWMF Phase I Project in Hong Kong
1600 – 1640	Dr <u>Zhang Yaodong</u> Deputy Director (Coastal), SJ	5. Application of Deep Cement Mixing (DCM) in Coastal Development: Design, Modelling and Quality Assurance
1640 – 1700	Q&A Session	
1700	End of Seminar	



## **CUS-CHEC-SJ Seminar on Advanced Ground Improvement for Marine and Coastal Infrastructure**

### **About the Presentations and Speakers**

#### **1. BIOROUTING FOR LOW CARBON GEOTECHNICAL APPLICATIONS**

**Professor Chu Jian, Chair, School of CEE; Director of CUS, NTU**

#### **Speaker's Biography**

**Professor Chu Jian** is President's Chair in Civil Engineering, Chair of the School of Civil and Environmental Engineering, Director of Centre for Urban Solutions, Co-Director of TREASURES (an NEA-NTU Centre Towards Resource Efficiency And Sustainability for URban EnvironmentS), and Fellow of Academy of Engineering Singapore. He worked for Iowa State University, USA, from 2011 to 2014, as Professor and James M. Hoover Chair in Geotechnical Engineering. He is Editor for a high impact journal, Acta Geotechnica, Editor-in-chief for Biogeotechnics, and Associate Editor for ASCE Journal of Materials in Civil Engineering. Prof Chu also chairs the ISSMGE Technical Committee TC217 on Land Reclamation and was a past president of Geotechnical Society of Singapore and a past Chair of ISSMGE Technical Committee TC39 on Geotechnical Engineering for Coastal Disaster Mitigation and Rehabilitation. He has been driving the development of a low carbon construction material, biocement, and its geotechnical applications in recent years. He received several awards including the R. M. Quigley Award from the Canadian Geotechnical Society in 2004 and the Outstanding Geotechnical Engineer Award from the Geotechnical Society of Singapore in 2018.



## CUS-CHEC-SJ Seminar on

# Advanced Ground Improvement for Marine and Coastal Infrastructure

### About the Presentations and Speakers

#### 2. GROUND IMPROVEMENT USING DCM METHOD FOR MARINE WORKS

Professor He Hongtao, Director of Geotechnical Institute (Overseas Department), CHEC

#### Speaker's Biography

**Professor He Hongtao** is the Director of Geotechnical Institute (Overseas Department), CHEC. He has over 15 years of geotechnical engineering design & consulting, project management experience, including land formation and ground improvement, slope protection, underground engineering in maritime engineering. Particularly, as a leader geotechnical engineer, he has involved in Hong Kong-Zhuhai-Macau Bridge (Islands and Tunnel Project), Main Reclamation Works (including DCM) of Hong Kong International Airport Three-runway System, Macau Light Rail East Line Project, Coal Terminal Project in Tsuen Wan Port Area of Huizhou Port in China. He is also a member of the Dredging and Sediment Treatment and Utilization Committee of Chinese Hydraulic Engineering Society (CHES) and a youth committee member of the Guangdong Provincial Geotechnical Mechanics and Engineering Society. He received the China Outstanding Patent Award and the National Outstanding Engineering Survey and Design Award. He took the lead in participating in the scientific research project "Key technologies for Research on the mechanism of instability and failure of Deep Cement Mixing Method for Strengthening Revetment Slopes and Stability Control under Complex Environments and Geological Conditions". He participated in the preparation of the standard of the Ministry of Transport of China "Underwater Deep Cement Mixing Method Construction Quality Control and Testing Standards".



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### **About the Presentations and Speakers**

#### **3. RECENT DCM CONSTRUCTION TECHNOLOGIES FOR MARINE PROJECTS**

Mr Ning Jinjin, Chief Engineer, CHEC

#### **Speaker's Biography**

**Mr Ning Jinjin** has dedicated a significant period to the research and construction of immersed tube tunnels, achieving remarkable success in areas such as immersed tube towing and installation, ground improvement, rapid island formation, and tunnel risk management. He has been honored with numerous prestigious awards, including the Tianjin May 1st Labor Medal, the Ministry of Transport's 'Most Beautiful Port and Shipping Person' award, the Tianjin Moral Model Nomination, and the National Innovation and Excellence Award. Additionally, he has received over 10 provincial and ministerial-level accolades from organizations such as the Navigation Society and the Waterway Transportation Association. His innovative work has resulted in the authorization of more than 50 national patents, including 20 invention patents. Mr Ning has also contributed to the academic community, having published over 30 papers in core domestic and international journals and serving as the chief editor for four group standards.



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### **About the Presentations and Speakers**

#### **4. DESIGN AND CONSTRUCTION OF DCM FOR THE IWMF PHASE I PROJECT IN HONG KONG**

**Dr Wang Cui, Technical Director of Geotechnical Engineering, CHEC UTC**

#### **Speaker's Biography**

**Dr Wang Cui** serves as the Technical Director of Geotechnical Engineering at CHEC Headquarters Center of Technology Utilization. With 17 years of dedicated practice in geotechnical engineering, she has extensive experience in ground improvement, foundation pit engineering, slope engineering, and other related domains. She has acted as a key technical contributor in many land reclamation and marine engineering projects, including the Dalian Airport Artificial Island Project, Hong Kong Integrated Waste Management Facilities Phase I (IWMF Phase I), Annaba Mining Port Expansion Project, and Macau International Airport Expansion Project. As a registered geotechnical engineer in Chinese Mainland, Dr Wang has published a number of papers in professional journals. She has been honored with multiple provincial and ministerial-level scientific and technological awards and has also participated in the compilation and formulation of the *Technical Specification for Static-Dynamic Drainage Consolidation of Hydraulic Fill*.



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### **About the Presentations and Speakers**

#### **5. APPLICATION OF DEEP CEMENT MIXING (DCM) IN COASTAL DEVELOPMENT: DESIGN, MODELLING AND QUALITY ASSURANCE**

**Dr Zhang Yaodong, Deputy Director (Coastal), Surbana Jurong**

#### **Speaker's Biography**

**Dr Zhang Yaodong** is a deputy director of Coastal Engineering and Management of Surbana Jurong and the head of Center of Excellence of the Coastal sub-sector in SJ group. He obtained his Doctor of Philosophy from National University of Singapore in Geotechnical Engineering. He is a registered Professional Engineer in Civil Engineering and Specialist PE in Geotechnical Engineering in Singapore. He has more than 20 years of practical experience in planning, design, construction and management for projects in Geotechnical and Coastal Engineering and provided consultancy services for many private and public projects involving the deep excavation, earth retaining structures, soil improvement, deep foundation and land reclamation. He has been also working on coastal protection projects to address the impact of climate change.