

Third International Conference on Press-in Engineering (ICPE2024) Held in Singapore - Sharing the Future of Sustainable Development and Press-in Engineering

The International Press-in Association (IPA) is an academic organization founded in 2007 with the aim of scientifically elucidating and promoting press-in piling technologies for static penetration of steel sheet piles and piles into the ground. As of the end of June 2024, the IPA comprises 731 individual members and 48 corporate members from international entities. Japan has been leading the activities, hosting the first International Conference on Press-in Engineering in Kochi in 2018 and the second conference in Tokyo (online) in 2021.

The Third International Conference on Press-in Engineering (ICPE2024) was held from July 3 to 5, 2024, at the National University of Singapore (NUS). Organized by the IPA and co-organized by NUS, the Geotechnical Society of Singapore (GeoSS), and the Tunneling and Underground Construction Society Singapore (TUCSS), ICPE2024 focused on the theme "The Superiority of Press-in Piling towards Sustainable Construction in Tackling Climate Change for Infrastructure Development."

Under the theme "The Superiority of Press-in Piling towards Sustainable Construction in Tackling Climate Change for Infrastructure Development," ICPE2024 attracted 208 leading researchers and engineers in press-in engineering from 17 countries and regions, based on 64 general paper submissions. The conference featured keynote lectures, theme lectures, presentations across various fields, and a press-in piling live demonstration. The conference facilitated vigorous discussions and Q&A sessions, where challenges for sustainable development, the latest technologies, and research outcomes in press-in engineering were shared. These interactions provided valuable exchanges of opinions aimed at the future development of press-in engineering.

ICPE2024 provided a valuable opportunity for researchers and engineers in press-in engineering from around the world to gather, share the latest technologies and research achievements, and significantly contribute to the advancement of press-in engineering.



Conference Program

Opening Ceremony:

At the opening ceremony, Professor Chun Fai Leung of the National University of Singapore (NUS), Chair of the ICPE2024 Organizing Committee, spoke about the history and significance of the conference. He expressed his delight that the third conference was being held outside of Japan for the first time and welcomed participants from various regions, emphasizing the conference's important role in the international dissemination and development of press-in engineering.

Following his remarks, Dr. Jeyatharan Kumarasamy, Immediate Past President of TUCSS; Dr. Darren Chian, President of GeoSS; and Prof. Keh-Jian Shou, Vice President for Asia of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE), each gave addresses. They highlighted the evolution and successful case studies of press-in piling technology, the growing demand in urban environments, and the response to climate change and sustainability.



Prof. Chun Fai Leung



Dr. Jeyatharan Kumarasamy



Dr. Darren Chian



Prof. Keh-Jian Shou

ICPE Awards Ceremony:

Awards were presented to 15 winners in five categories, including the ICPE Best Paper Award for papers submitted to ICPE 2024.

- The ICPE Best Paper Award: Mr. Ryuto Shikakura, Dr. S M Shafi, Dr. Kentaro Nakai
Mr. Kazunori Toda, Mr. Kazuyuki Matsuzawa,
Mr. Ram Krishna Mandal, Dr. Takeshi Yamazaki
- Outstanding Project Award: City of Amsterdam, G-Kracht
- Distinguished Research Award: Dr. Yukihiro Ishihara, Dr. Xi Xiong, Dr. Vijayakanthan Kunasegaram
- Life-long Contribution Award: Dr. Osamu Kusakabe, Prof. Tatsunori Matsumoto
- Early Career Engineer Award: Mr. Yusuke Mochida, Mr. Benjamin Bautista Buensuceso III



Keynote Lectures:

Two keynote lectures were delivered by distinguished scholars.

Keynote Lecture 1: Shinobu Yume Yamaguchi (Director, United Nations University Institute for the Advanced Study of Sustainability)

Keynote Lecture 2: Kenneth Gavin (Professor, Delft University of Technology, President, International Press-in Association)

Dr. Yamaguchi's lecture, titled "Progress of UN Sustainable Development Goals and the Synergy with Climate Change Actions," covered the current status of the SDGs, international efforts regarding climate change, the understanding of interrelated risks, and the implications and impacts of these issues.

Professor Gavin's lecture, titled "The Potential Use of Press-in Methods in the Offshore Renewables Industry," discussed the latest monopile design techniques, seabed modeling, and the handling of difficult soils for construction. He highlighted how press-in technology contributes to sustainable infrastructure development.



Keynote Lecture 1: Dr. Shinobu Yume Yamaguchi



Keynote Lecture 2: Prof. Kenneth Gavin

Theme Lectures and General Sessions:

ICPE 2024 featured presentations and questions from a wide range of perspectives.

In the theme session, Dr. Goh Teik Lim (Singapore), Mr. David Liaw (Singapore), and Mr. Tsunenobu Nozaki (Japan) gave presentations on the application of the press-in method in Southeast Asia, including Singapore. In the general session, a wide variety of topics were presented based on 64 papers submitted to ICPE, including the latest research results on press-in engineering and construction case studies.



Banquet:

On the evening of the first day of the conference, a banquet was held, attended by 175 participants who enjoyed a meal and exchanged ideas. During the banquet, commemorative plaques were presented to individuals and companies who contributed to ICPE2024, including the two keynote speakers, as a token of appreciation. The participants deepened their interactions in a relaxed atmosphere, making it a valuable opportunity to build future cooperative relationships.



Press-in Piling Live Demonstration:

On the third day of the conference, a press-in piling demonstration tour was held at the facilities of Guan Chuan Engineering Pte., Ltd., a sponsor company and a member of the ICPE2024 Organizing Committee. The demonstration featured the "GYRO PILER™," introduced to Singapore for the first time last year by GIKEN LTD. of Japan. This press-in piling machine can install steel tubular piles through existing structures and underground obstacles. Additionally, two other machines were showcased: the "CRUSH PILER™," which facilitates pile installation in hard ground such as sandy gravel and bedrock, and the "ZERO PILER™," which allows for pile installation in close proximity to boundary lines and adjacent structures. Each machine's features were demonstrated, allowing attendees to observe the machines in action up close. This provided a deeper understanding of the technology and enabled participants to gain further specific knowledge through questions and answers.



Industry Collaboration Meeting:

On the afternoon of the second day of the conference, an informal industry collaboration meeting was held for the sponsor companies of ICPE2024, specifically involving press-in piling companies. The advancement of press-in engineering and the future expansion of press-in piling technology require collaboration between academia, industry, and government. Taking advantage of the ICPE opportunity, this session was organized to foster open dialogue from the perspective of press-in piling practitioners, explore the possibilities of building industry networks, and consider frameworks like Japan Press-in Association (JPA). Discussions covered not only the needs for the education and certification of press-in piling machine operators but also the possibilities for collaboration from a sustainability perspective.

Inauguration of the New IPA President and the Next ICPE Venue:

At the IPA Board Meeting held the day before ICPE2024, Professor Kenneth Gavin of Delft University of Technology in the Netherlands was inaugurated as the new President of the International Press-in Association (IPA). The next ICPE is planned to be held in the Netherlands in 2027.

[Supplementation]

Overview of the International Press-in Association (IPA):

The International Press-in Association (IPA) is a global academic organization dedicated to advancing "Press-in Engineering," a field that integrates geotechnical engineering, environmental engineering, mechanical engineering, measuring-surveying-monitoring engineering, and data and information processing. The IPA aims to combine theory and practice through industry-academia-government collaboration to elucidate the mechanisms of interaction between the ground and structures.

Since its establishment in 2007, the IPA has organized international conferences and workshops, published and awarded academic papers, and issued guidelines for press-in method design and construction as well as case studies of press-in piling technology applications. Particularly, the IPA has contributed to the advancement and dissemination of press-in piling technology by forming and maintaining an international network of academic interest in press-in piling technology, collecting and disseminating technical information, and providing venues for presenting research results and case studies.

Third International Conference on Press-in Engineering (ICPE2024) Conference Information

- Organizers:**
- ICPE2024 Organizing Committee
 - International Press-in Association (IPA)
- Co-organizers:**
- Centre for Soft Ground Engineering, National University of Singapore (NUS)
 - Geotechnical Society of Singapore (GeoSS)
 - Tunneling and Underground Construction Society, Singapore (TUCSS)
- Support:**
- The Asian Civil Engineering Coordinating Council (ACECC)
- Sponsors:** 17 companies from 6 countries/regions (listed in alphabetical order)

Platinum Sponsor: GIKEN LTD.

Gold Sponsors: Atsunew Giken Pte. Ltd./Oriental Castle
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GIKEN SEKO CO., LTD.
GUAN CHUAN ENGINEERING CONSTRUCTION PTE LTD
JFE Steel Corporation
NIPPON STEEL CORPORATION

SATO JUKI Corporation/ENFIVE PTE. LTD.

Sliver Sponsors: Daesan Civil Technology
Kiso-Jiban Consultants Co., Ltd.
THAI FULLMORE CO.,LTD.

Bronze Sponsors: FUCHI Pte Ltd
JIAN MAN CONSTRUCTION PTE LTD
KAKUTO CORPORATION
Mlion Corporation Pte Ltd
Nippon Chemical Paint Co., Ltd.
Ozawa Civil Engineering and Construction Co.Ltd.

Conference Theme:

The Superiority of Press-in Piling towards Sustainable Construction in Tackling Climate Change for Infrastructure Development

Duration and location of the event:

3-5 July 2024, University Town, National University of Singapore (NUS)

Number of participants and participating countries/regions:

Number of registrants: 208

Number of participating countries/regions: 17 (Japan, Singapore, Thailand, Taiwan, Australia, China, Malaysia, South Korea, the Netherlands, Pakistan, the Philippines, the United Kingdom, the United States, Vietnam, Brazil, Cambodia, Ukraine)

For inquiries regarding this matter, please contact:

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ICPE2024 official website: <https://2024.icpe-ipa.org/>