

Conference report

The 3rd International Conference on Geotechnical Engineering, Iraq, 29 – 31 May 2022

The Third International Conference on Geotechnical Engineering-Iraq (3ICGE-Iraq 2022) finished its work successfully at Baghdad University, Baghdad, Iraq. The conference provided an excellent opportunity to share the latest development in geotechnical engineering, particularly discussing the challenges, opportunities, and problems of geotechnical engineering. The 3ICGE-Iraq was organized by the Iraqi Scientific Society of Soil Mechanics and Foundation Engineering (ISSSMFE) in cooperation with College of Engineering Department/University of Baghdad, College of Engineering /University of Kerbala, and Karbala Center for Studies and Research/Imam Hussain Holy Shrine. The 3ICGE-Iraq themes included but were not limited to the following research and development areas/fields:

- 1) Soil Mechanics (SM)
- 2) Foundation Engineering (FE)
- 3) Infra Structure Engineering (ISE)
- 4) Structural Dynamics and Earthquakes (SDE)
- 5) Structural Engineering (SE)
- 6) Transportation Engineering and Construction Materials (TECM)
- 7) Construction Management (CM)
- 8) Remote Sensing and Sustainability (RSS)
- 9) Architectural and Environmental Engineering (AEE)
- 10) Water Resources Engineering (WRE)

The 3ICGE-Iraq 2022 was considered a forum to bring together worldwide scientists, academics, researchers, government officials, and construction industry professionals to discuss innovative ideas and diverse topics on the next generation of sustainable applications in civil engineering, especially in geotechnical and environmental engineering. The 3ICGE-Iraq 2022 received 307 research manuscripts, where 217 of these manuscripts were accepted while the other 90 manuscripts were rejected. The papers submitted to the conference were received from Iraq, Iran, Kazakhstan, Russia, USA, India, Turkey, Jordan, UAE, England, China, Algeria, Egypt, Germany, Plasteline, Hungary, Spain, and Pero. Three publishers will handle the accepted papers, Scopus indexed journals: Springer, American Institute of Physics, and De Gruyter. More than 700 participants attended the conference during the opening ceremony and plenary session. Hundreds of attendees, paper presenters, keynote speakers, exhibitors, and tutorial participants, students have benefited in many ways from this conference. Authors presented more than 217 scientific papers through oral presentations and posters from several countries. Seven invited keynote speakers from different countries addressed the audience to share knowledge and rich experience of the Iraqi Scientific Society of Soil Mechanics and Foundation Engineering applications from their universities and companies. The 3ICGE-Iraq supported hybrid presentations: online presentations for overseas persons or offline presentations for locals. The offline presentation included oral and poster presentations.



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Opening ceremony

The first day of the conference started with a welcoming speech and opening ceremony in Al-Hakeem Hall at University of Baghdad. The representatives of University of Baghdad (Prof. Dr. Moneer H. Al-Saadi /President of University of Baghdad), College of Engineering/ University of Baghdad (Prof. Dr. Saba J. Al-Kafajee/Dean of College of Engineering), College of Engineering/University of Kerbala (Prof. Dr. Laith Sh. Rasheed/Dean of College of Engineering), and Iraqi Scientific Society of Soil Mechanics and Foundation Engineering (Prof. Dr. Mahdi Karkush/President of ISSSMFE) addressed to participants short welcoming speeches and a brief summary about ISSSMFE and 3ICGE-Iraq.



Prof. Mahdi Karkush/President ISSSMFE



Prof. Moneer Al-Saadi/President of University of Baghdad

The president of University of Baghdad, the dean of College of Engineering/University of Baghdad, the dean of College of Engineering/University of Kerbala, and the representative of ISSSMFE, were handed in shield of excellences to the organizing and scientific committees, and keynote speakers. Moreover, shields of excellence were granted from ISSSMFE to the president of University of Baghdad, dean of College of Engineering/University of Baghdad, and the dean of College of Engineering/University of Kerbala. Special thanks were extended to the members of ISSSMFE, and faculty of College of Engineering/University of Baghdad who worked all together and extremely hard to prepare an outstanding successful conference. Tender thanks were expressed to the reception team, the master of ceremonies, and voluntary students who did impressive and dedicated work.



Ceremony of awarding shields to the members of organizing and scientific committees

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After that the conference continued with seven keynote lectures:

- 1) Prof. Dr. Askar Zhussupbekov/Kazakhstan: Geotechnical Construction and Testing of Piles of Megastructures on Problematical Soil Ground of Kazakhstan.
- 2) Prof. Dr. Krishna R. Reddy/USA (Oline): Addressing Sustainability and Resiliency in GeoEngineering.
- 3) Prof. Dr. Mahdi Karkush/Iraq: Improvement of Shear Strength of Soft Clayey Soil by Microbial Induced Calcite Precipitation.
- 4) Prof. Dr. Victor N. Kaliakin/USA: Simulation of Column Supported Embankments Underlain by Rigid and Compressible Soil Layers.
- 5) Dr. Ismacahyadi B. Mohamed Jais/Malaysia (Online): Georehabilitation Solution to Address Settlement of Bridge Approach and Building.
- 6) Prof. Dr. Fardin Jafarzadeh/Iran: Energy Piles, Applications and Research Aspects: An investigation on the behavior of a single energy pile in dry condition.
- 7) Prof. Dr. Boominathan Adimoolam/India (Online): Geotechnical Isolation Systems for Vibration Mitigation.



Prof. Dr. Victor Victor N. Kaliakin/USA



Prof. Dr. Askar Zhussupbekov/Kazakhstan



Prof. Moneer Al-Saadi with Profs Askar and Kaliakin



Prof. Saba Al-Kafajee

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Saba, Mohammed, Mahdi, Saba, Askar, Victor, and Fardin



The reception team

The second day of the conference started with two special lectures given by professors from Iraq and Iran:

- 1) **Dr. Hamidreza ELAHI (Iran):** Geotechnical Aspects of Imam Hossein Holly Shrine Development Project in Karbala.
- 2) **Dr. Alaa Hussein Al-Zuhairi (Iran):** Fosroc Special Presentation and Show.

After the special lectures ended, the oral presentation of papers was divided into two mornings and two-afternoon sessions, in which five halls were opened. The poster presentation of papers was also accompanied for the first and second days of the conference. At the end of the conference's second day, the ISSMFE invited all participants with their guests to launch. All participants were also invited at the evening to Gala dinner in one of the famous restaurants in Baghdad city/Iraq.

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Minutes of activity of conference attendees



Oral presentation



Poster presentation

The third day of the conference includes a visit to Kerbala University and started with a welcoming speech by Prof. Dr. Basim K. Nile al-Seedi/President of Kerbala University, Prof. Dr. Laith Sh. Rasheed/ Dean of Engineering College, Abed Al-Ameer Al-Qureshi/Director of Karbala Center for Studies and Research. After that, Prof. Dr. Mahdi Karkush/President of ISSSMFE introduced a brief description of 3ICGE-Iraq, and at the end of the conference, the following recommendations were declared:

- 1) The role of geotechnical engineers in designing and executing different construction projects should be emphasized, especially in the design of foundations and soil improvement and remediation.
- 2) Efforts should be dedicated to bridging the gap between scientific research at scientific and academic institutions and the construction industry, especially in geotechnical engineering. Attention should also be paid to solving field problems faced by geotechnical engineers, such as soil improvement and remediation.
- 3) Increasing the cooperation and link between university professors and fields of work.
- 4) Increasing cooperation between local and international societies and universities reduces the scientific research gap.
- 5) Encourage the young researchers to participate in the local and international events to build a new generation of academics and researchers with good knowledge.

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- 6) It is recommended that ISSSMFE should play a major role in conducting of soil investigation reports and design of foundations for different types of projects, especially those requiring highly qualified people to introduce consultant works for solving problems facing geotechnical engineers in the field. The role of the ISSSMFE is therefore very important in evaluating and enriching these reports. The ISSSMFE should move toward the professional agencies and other related governmental offices to get a role in accrediting and issuing the licenses for the site investigation parties.
- 7) The members of ISSSMFE hope to get more roles in the committees and activities of ISSMGE. The administration board of ISSSMFE also hopes to get more support from ISSMGE for activities organized by ISSSMFE, such as the next 4th international conference on geotechnical engineering-Iraq-2024.

Also, the third day of the conference includes a site visit to one of the important and biggest projects (Al-Aqela Zainab Hall). This project is under construction and implemented by the technical directorate of Imam Hussain Holy Shrine. This project includes casting a diaphragm wall of 40 m depth around a construction area of 120,000 m². The delegates listen to detailed explanations about the stages of project construction.



Closing ceremony at Kerbala University

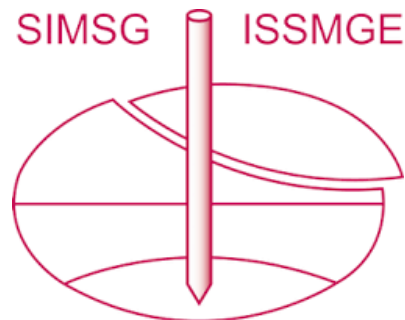


Visit Holy Shrine of Imam Hussain

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The conference supported by



International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE)

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Prof. Mahdi O. Karkush

President of Iraqi Scientific Society for Soil Mechanics and Foundation Engineering