



DFI 2021 Middle East Conference

Geotechnical Engineering For Delivering Sustainable, Cost-Effective Projects

16-18 February 2021 | An Online Conference



Conference Program

Technical Program Committee

Conference Chairman

Dr. Salah Dilimi, *Roads and Transport Authority Dubai*

Program Chairmen

Nick Chittenden, *Master Builders Construction*

Chemicals UAE LLC

Emad Sharif, *Geotechnical Testing Consultants*

Committee Members

Mona AbdAlghaffar, *Jacobs*

Alexandre Abinader, *Soletanche Bachy*

Marwan Alzaylaie, *Dubai Development Authority*

Mohamed Ayeldeen, *Keller*

Bedros Avakian, *Menard*

Mike Bevin, *Coeffy*

Bukki Balogun, *Arcadis*

Imran Durrani, *Artilia*

Yasser Hakam, *Menard*

Karim Khalaf, *Fugro*

Shad Khan, *Keller*

Hadi Koloot, *Jacobs*

Mariane Kurban, *Jacobs*

Finlay Leibrick, *AECOM Abu Dhabi Regional Office*

Imraan Motara, *WSP*

Mark Peters, *Byrne Looby*

Stephen Purdue, *Parsons*

Hesham Shazli, *Abu Dhabi Municipality*

Richard Smedley, *Mott MacDonald*

Ryan Sochanik, *W S Atkins*

Alexandros Yiagos, *Langan*

www.dfi.org/DFIMEC2021

Tuesday, 16 February 2021

All presentations are in Gulf Standard Time (GST)

1:00 p.m. - 1:15 p.m.

WELCOME AND OPENING

1:15 pm - 2:00 pm

Keynote: Sustainable Foundation of High-Rise Buildings in Soft Soil - Requirements and Recommendations for Technical Solutions

Rolf Katzenbach, Ph.D.

Technical University at Darmstadt | Germany

**TECHNICAL SESSION I:
DEEP FOUNDATION PILING**

2:00 pm - 3:00 pm

Moderator: Hadi Koloot | Jacobs

2:00 pm - 2:20 pm

Micropiles for Emergency Repair of Bridges: Case Study

Mohab Hussein, P.E. | *New Jersey Department of Transportation (NJDOT) | United States*

2:20 pm - 2:40 pm

On the Use of the Micropiled Post-Tensioned Raft Foundation System in GCC Coastal Areas

Hamzah Al-Hashemi, M.Sc. | *Strong Force-MGC W.L.L. | Bahrain*

2:40 pm - 3:00 pm

Liquefaction Induced Downdrag on Full-scale Micropile Foundation During Blast-Induced Liquefaction

Kyle Rollins, Ph.D. | *Brigham Young University | United States*

3:00 pm - 3:15 pm BREAK

**TECHNICAL SESSION II:
EFFECTIVE AND SUSTAINABLE
DESIGN**

3:15 pm - 4:35 pm

Moderator: Bukki Balogun | Arcadis

3:15 pm - 3:35 pm

Grouting and Water Control for Below Ground Structures

Nick Chittenden | *Master Builders Construction Chemicals UAE LLC | United Arab Emirates*

3:35 pm - 3:55 pm

Load Settlement Behavior of Bored Piles of a Skyscraper in Dubai – A Case Study

Ahmed Al-Mufti, Ph.D., P.Eng. | *Rocscience Inc. | Canada*

3:55 pm - 4:15 pm

Sustainable Aspects of Rigid Inclusions as Soil Improvement Technique

Mohamed Ayeledeen, Ph.D. | *Keller Grundbau GmbH | United Arab Emirates*

4:15 pm - 4:35 pm

An Overview of Energy Geostructures and the Associated Challenges in the Middle East Region

Ahmed Badr Mabrouk, Ph.D., P.Eng | *American University in Dubai | United Arab Emirates*

4:35 pm - 5:05 pm

Invited Speaker - Incorporating Deep Foundations in Limit-Equilibrium Slope Stability Analyses: Revisiting Fundamentals and Seismic Applications

Ben Turner, Ph.D., P.E. | *Dan Brown and Associates, PC | United States*

5:05 pm - 5:15 pm CLOSING

**Subject to Change*

Wednesday, 17 February 2021

All presentations are in Gulf Standard Time (GST)

1:00 pm - 1:15 pm

WELCOME AND OPENING

1:15 pm - 2:00 pm

Keynote: Recent Advances in the Understanding of Augercast Piles and Displacement Augercast Piles and Impact on their Design

Maurice Bottiau | Franki Foundations

**TECHNICAL SESSION III:
GROUND IMPROVEMENT**

2:00 pm - 3:00 pm

Moderator: Karim Khalaf | Fugro

2:00 pm - 2:20 pm

Dynamic Compaction for the Improvement of Loose Fills and In-Situ Soils in the GCC

Salvatore Miranda, P.E. | Trevi SpA | Italy

2:20 pm - 2:40 pm

Controlled Modulus Columns (CMC) Piloting in Saudi Arabia for Treating Loose Soils under Flexible Storage Tanks Formations

Abiola Ojo | Saudi Aramco | Saudi Arabia

2:40 pm - 3:00 pm

Early Applications of Dilatometer Tests (DMT) in Middle East

Emad Sharif | Geotechnical Testing Consultants

3:00 pm - 3:15 pm **BREAK**

**TECHNICAL SESSION IV:
DEEP MIXING AND QC/QA FOR
GROUTED ELEMENTS**

3:15 pm - 4:35 pm

Moderator: Mohamed Ayeldeen, Ph.D., C.Eng. | Keller

3:15 pm - 3:35 pm

Minimizing the Detrimental Role of Clays in Deep-Mixing with Chemical Additives

Giovanni Spagnoli, Ph.D., MBA | MBCC Group | Germany

3:35 pm - 3:55 pm

Single Column Mixing Applications and References Around the World

Franz-Werner Gerressen, Dipl. Ing. | BAUER Maschinen GmbH | Germany

3:55 pm - 4:15 pm

Corrosion Protection of Subsurface Installed Reinforcement by Cement Grout: Opportunities and Limitations

Yasir Husain, MS | Ischebeck Titan Middle East | United Arab Emirates

4:15 pm - 4:35 pm

Thermal Integrity Testing

Hazem Sarhan, Ph.D., P.E. | PDI, ADEC Engineering | United Arab Emirates

4:35 pm - 5:05 pm

Invited Speaker - Using Thermal Integrity Profiling (TIP) to Monitor Shaft Cooling System for Large Diameter Drilled Shafts

David Schoen, P.E. | S&ME, Inc. | United States

5:05 pm - 5:15 pm **CLOSING**

**Subject to Change*

Thursday, 18 February 2021

All presentations are in Gulf Standard Time (GST)

DFI-MEC 2021 STUDENT PROGRAM

1:00 pm - 4:45 pm

An informative student program that introduces students to a day in the life of a geotechnical project. Speakers will highlight the investigation, design process, construction, instrumentation, monitoring and observational approach, and lessons learned.

1:00 pm - 1:15 pm

INTRODUCTION

Moderator:

Marwan Alzaylaie, Ph.D. | Dubai Development Authority

1:15 pm - 2:00 pm

Investigation

Karim Khalaf | Fugro

This presentation will overview desk studies, remote sensing, collaboration with geological specialists, and investigation companies.

2:00 pm - 2:45 pm

Design Processes

Hadi Kaloot | Jacobs

Topics to be discussed include establishment of ground models and geotechnical parameters (data management and interpretation), foundation design (shallow foundations (pads, rafts) and piled foundations), slope stability, retaining walls (sheet pile walls, secant piles, diaphragm walls, gravity walls, and MSE walls), and earthworks, ground improvement and liquefaction.

2:45 pm - 3:00 pm **BREAK**

3:00 pm - 3:30 pm

Foundation Construction

Karim Khalaf | Fugro

Yasser Hakam | Menard

This presentation will present exciting foundation projects showcasing different techniques, benefits, and limitations). Techniques to be covered include piles, barrettes, diaphragm walls, excavations, tunneling, ground improvement and dewatering.

3:30 pm - 4:00 pm

Instrumentation Monitoring and Observational Approach

Jean Christophe Monneret | SIXENSE

This presentation will include an overview of different instrumentation for geotechnical applications, historical development and use of the instrumentation for monitoring, highlighted with project photos.

4:00 pm - 4:45 pm

Panel Discussion: Computational Geotechnics for Civil Engineering Students

Moderator:

Mary Ellen Large | Deep Foundations Institute

Panelists:

Marwan Alzaylaie, Ph.D. | Dubai Development Authority

Onur Ozkol | ByrneLooby

Hadi Kaloot | Jacobs

Karim Khalaf | Fugro

This interactive panel discussion will address computational geotechnics and numerical modelling in geotechnical engineering. It will highlight the importance to civil engineering students by investigating the difference between classical and modelling design approaches, simulation of field monitoring, limitations, and the future of the modelling techniques in the geo-industry.

4:45 pm **CLOSING**

*Subject to Change