ΕΛΛΗΝΙΚΗ
ΕΠΙΣΤΗΜΟΝΙΚΗ
ΕΤΑΙΡΕΙΑ
ΕΔΑΦΟΜΗΧΑΝΙΚΗΣ
& ΓΕΩΤΕΧΝΙΚΗΣ
ΜΗΧΑΝΙΚΗΣ

Η Ελληνική Επιστημονική Εταιρεία Εδαφομηχανικής και Γεωτεχνικής Μηχανικής και ο Τομέας Γεωτεχνικής του ΕΜΠ διοργανώνουν

Διάλεξη του Καθηγητή Arvin Farid την
Δευτέρα 19/6/2023 στις 6:00μμ
στην Αίθουσα Εκδηλώσεων του ΤΕΕ,
Σύνταγμα, Νίκης 4, α΄ όροφος

(θα υπάρξει και ζωντανή μετάδοση διαδικτυακά μέσω συνδέσμου που θα ανακοινωθεί)

Τίτλος Διάλεξης

ELECTROMAGNETIC WAVES FOR GEOTECHNICAL/GEOENVIRONMENTAL APPLICATIONS.

Περίληψη Διάλεξης

Electromagnetic (EM) waves have long been used to detect and monitor anomalies in soils. This talk will review various aspects and fundamentals of the use of electromagnetic (EM) waves for radar-based geophysical detection and characterization, including numerical modeling and setting up successful experiments, and the development of sensors. In addition, the use of EM waves to control various mechanisms (e.g., induce contaminant flow, control airflow, alter hydraulic conductivity) to improve or expedite the geoenvironmental process of cleaning up soil and groundwater or geotechnical applications (e.g., liquefaction mitigation) will be discussed at the laboratory scale within resonant cavities. Numerical simulation, experimental validation, and solving the inverse problem to reach governing equations of these phenomena and the relevant multiphysics processes will then be explained. The resulting governing models to correlate EM waves' characteristics and the flow and hydraulic-conductivity alteration and potential for liquefaction mitigation will also be explained.

Σύντομο Βιογραφικό Σημείωμα Ομιλητή

Dr. Arvin Farid is a Professor of the Civil Engineering Department and the Director of the SEnS-GPS Program, sponsored by the U.S. National Science Foundation, at Boise State University. He is also the chair of the Geoenvironmental Engineering Technical Committee of the American Society of Civil Engineers (ASCE) Geo-Institute (GI) and an editor of the Environmental Geotechnics Journal of the Institute of Civil Engineers (ICE). He also serves on several national and international committees. He received his Ph.D. from Northeastern University, Boston, MA, and his M.Sc. and B.Sc. degrees from Shiraz (formerly Pahlavi) University, Shiraz, Iran. He has pioneered the leading edge of research on the use of electromagnetic (EM) fields for geoenvironmental/geotechnical applications. His research includes EM-induced remediation, EM waves' effect on soil properties, energy geo-storage, wildfire research, recycling and reuse of industrial byproducts, material characterization, power infrastructure vulnerability, and liquefaction mitigation, among others. His most recent research focuses on wildfires' impacts, resilience against them, restoration and remediation post-fire, and recycling waste. Dr. Farid was awarded several research grants from the U.S. National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA) among others. He has published in several prestigious civil and electrical engineering journals and presented at numerous international civil engineering, electrical engineering, and geophysics conferences.