



DEPARTMENT OF CIVIL ENGINEERING

Civil Engineering Grand Challenges Lecture

**Advancing the energy potential of offshore wind**

Professor Lidija Zdravkovic

Computational Geomechanics at Imperial College London

Date: March 24, 2025 (Monday)

Time: 10:00 a.m. – 11:00 a.m.

Venue: Room 612B, 6/F Haking Wong Building, The University of Hong Kong

Abstract

To meet the needs for future energy supplies that are both sustainable and secure, there is significant current worldwide growth in the installation of renewable energy systems. Much of this growth is focused on the development of offshore wind farms. Since the costs of fabricating, transporting and installing the foundations for offshore wind turbine structures contribute significantly to overall project costs, financial incentives exist to employ foundation systems that minimise costs, while ensuring safe operation of the turbine support structure during its lifetime. Monopiles have emerged as the preferred foundation system for wind turbines. This lecture discusses the role of advanced numerical and constitutive modelling in developing robust and efficient design methods for this foundation type, in the context of offshore wind farms.

About the Speaker

Lidija Zdravkovic is Professor of Computational Geomechanics at Imperial College London, where she has been an academic staff member since 1996, becoming full professor in 2013. She was Head of the Geotechnics division in the Civil and Environmental Engineering Department for ten years, until 2024. Her research integrates soil characterisation and numerical modelling to assess geotechnical infrastructure, climate change impact, offshore foundations, energy geostructures and nuclear waste disposal, recently expanding her interests to data science and machine learning. She has consulted on several major infrastructure projects and is a Fellow of the Institution of Civil Engineers. She has published over 250 technical papers and has been awarded prizes from the British Geotechnical Association (BGA) and the Institution of Civil Engineers, UK, and the 2019 Imperial College President's Medal for Excellence in Education. She delivered the prestigious Rankine Lecture in March 2024 and has been the Géotechnique Editor-in-Chief since January 2024.

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