

WEBINAR TALK ON MODELLING GROUND-ATMOSPHERE INTERACTION FOR EVALUATING CLIMATIC EFFECTS ON GEO-INFRASTRUCTURE

SPEAKER:
PROF JAYANTHA KODIKARA



**5 MAR 2026
THURSDAY**



2.30PM - 4.30PM



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BEM Approved CPD: 2
Ref. No.:IEM26/HQ/034/T(w)

Registration Fees:
Student Members : Free
IEM Members : RM 15.00
IEM Non Members : RM 70.00
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SYNOPSIS

This presentation addresses the profound impact of Anthropogenic Climate Change on geo-infrastructure, outlining projected features like increased temperatures, severe droughts, sea level rises, and more intense rainfall events. The presentation details the resulting expected effects on geotechnical structures, including instability of slopes, asphalt melting and rutting, desiccation/shrinkage cracks in soil, and inundation from sea level rise. It provides an overview of high and extreme risks across critical infrastructure sectors—Water, Power, Telecommunications, Transport, and Buildings—which are vulnerable to material degradation, foundation failure, and storm/flood damage. The core scientific focus is on the Modelling of climate-ground interaction using coupled Hydro-Thermal Modelling (e.g., in HYDRUS) to simulate heat and moisture transport, which is essential for quantitatively assessing damages and developing resilient mitigative solutions for buried and ground-supported assets.

SPEAKER'S PROFILE

Professor Jayantha Kodikara is a highly distinguished and influential leader in infrastructure engineering, specialising in roads, railways, buried infrastructure, and building foundations. With an impressive academic record (h-index 57, over 500 publications, and more than 11,000 citations), Professor Kodikara brings extensive executive leadership and a proven ability to translate cutting-edge research into industry practice. He is a Chartered Professional Engineer and a Fellow of Engineers Australia.

Professor Kodikara is renowned for establishing and directing several pivotal, industry-focused research collaborations such as the ARC ITRH for Next Generation Transport Pavements (SPARC). ARC ITRH for Next Generation Transport Pavements (SPARC): He founded SPARC as Australia's first comprehensive, university-led pavement research collaboration. This initiative partnered with 23 industry organisations, 26 Chief Investigators across 8 Australian universities, and 7 international institutions. These frameworks are implemented in collaboration with the transport peak body, Austroads, and national road authorities.

A dedicated mentor, Professor Kodikara has supervised 54 PhD students (receiving the Vice Chancellor's PG supervision award) and numerous Research Fellows who now hold senior academic and industry positions. His programs, including SPARC, have significantly contributed to the development of a highly skilled workforce.