

Use of Geogrids in Concrete Pavements

Prof. Muhammad Hadi

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ABOUT THE TALK :

Concrete pavements and bridge deck slabs are subjected to thousands of cyclic wheel loads daily, which can lead to the formation and propagation of cracks in multiple directions. This cracking not only reduces the flexural strength of the concrete but also accelerates the corrosion of conventional steel reinforcement bars. Incorporating geogrids, particularly triaxial geogrids, into concrete pavements has shown promise in enhancing their fatigue resistance under cyclic loading. The talk discusses the effects of triaxial geogrid reinforcement, made from polypropylene composite materials, on the flexural behaviour of concrete pavements. The parameters including ductility, fracture energy, formation of cracks and shrinkage behaviour of concrete on reinforcing with geogrids will also be presented.

ABOUT THE SPEAKER :

Dr. Muhammad Hadi currently serves as a Professor in the School of Civil, Mining and Environmental Engineering at the University of Wollongong (UOW), Australia. He has made pioneering contributions to the design, analysis, and rehabilitation of concrete structures, with particular expertise in the strengthening of structural elements using novel composite materials such as fiber-reinforced polymers (FRP) and high-performance concretes. Prof. Hadi has secured over \$2.5 million in competitive research funding, including prestigious grants such as the Australian Research Council (ARC) Discovery Project. He has more than 350 peer-reviewed articles in high-impact SCI-indexed journals, with a Scopus h-index of 53 and over 9,500 citations. Prof. Hadi has successfully supervised 49 PhD scholars to completion and currently leads a dynamic research group comprising 12 active PhD candidates. He is also an inventor with two patents, and has served on editorial boards of several international journals. Prof. Hadi is a Fellow of Engineers Australia (FIEAust) and a Chartered Professional Engineer (CPEng), with professional affiliations including the American Society of Civil Engineers (ASCE) and the International Association for Bridge and Structural Engineering (IABSE).

