

Tackling Fire Hazard in Critical Transportation Infrastructure

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ABOUT THE TALK :

Fire represents a significant hazard to civil and military infrastructure, including transportation structures. However, unlike other hazards (wind, earthquake, impact, scour, blast), fire hazard is still not accounted for in conventional bridge and tunnel design. In recent years, there has been number of fires in critical transportation structures due to rapid urbanization and increase in shipping of fuel products, combustibles and chemicals. Even though some of these fires have caused substantial economic and human losses, current design provisions still do not account for specific fire mitigation strategies in most transportation structures. The presentation will provide an overview on the problem of fire hazard in transportation structures. The magnitude of fire problem in transportation structures is highlighted and the critical factors governing the performance of these structures under fire exposure is discussed. Some of the recent research undertaken to address fire problem in transportation structures is summarized. In addition, different strategies for mitigating fire hazard in transportation structures is presented and research needs for advancing the “state-of-the-art” in this critical area is laid out.

ABOUT THE SPEAKER :

Dr. Venkatesh Kodur is a University Distinguished Professor and Director of the Centre on Structural Fire Engineering and Diagnostics at Michigan State University. As an internationally recognized expert in civil and fire engineering, his pioneering research has advanced the understanding of how materials and structural systems behave under extreme fire conditions. The techniques developed from his work have significantly influenced design practices aimed at reducing the devastating impact of fires on infrastructure worldwide. He has authored over 550 peer-reviewed papers and delivered more than 100 keynote or plenary lectures at major international forums. As per Google Scholar, he has more than 26,300 citations with an “h” index of 90. Dr. Kodur has held key leadership roles, including Chairperson of Civil and Environmental Engineering at MSU, and currently serves as Chair of the international “Structures in Fire” steering committee. He is a Fellow of eight prestigious Institutes and Academies, including the Royal Society of Canada, American Society of Civil Engineers, National Academy of Sciences (India), and Canadian Academy of Engineering. His many honors include the NATO Collaborative Research Award, NRCC Outstanding Achievement Award (Canada), and the Fulbright Scholarship. Dr. Kodur also holds prestigious appointments including, “Distinguished Invited Visiting Professor” at Ewha Woman’s University, South Korea; “INFOSYS Distinguished Visiting Chair Professor” at the Indian Institute of Science; Distinguished Visiting Professor at the Indian Institute of Technology Bombay; Government of India “VAJRA Faculty (Award) for Collaborative Research” at the Indian Institute of Technology-Delhi and “Adjunct Professor” at the University of Waterloo, Canada.

