



Online Talk

## Structural Health Monitoring of Tall Structures



Time:  
9.30am – 12.30pm



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Speaker:  
**Assoc. Prof. Ts. Dr.  
Mohammadreza Vafaei**



Moderator:  
**Goh Shing Yi**

### Synopsis

Since decades ago, visual inspection together with non-destructive and destructive methods have been used as the main approach to assess the integrity of existing structures.

However, these approaches have several shortcomings. For example, the outcome of a visual inspection is highly dependent on the engineers' experience. Besides, non-destructive/destructive methods are very time-consuming and costly for large structures like tall buildings and long-span bridges. In recent decades, a new method which is referred to as the structural health monitoring (SHM) technique has been emerged.

SHM systems employ different types of sensors to monitor the integrity of structures and report on probable damage locations in real time. At first, this presentation will explain the background of SHM systems and their main components. Then, different damage identification methods are presented, and their advantages and disadvantages are discussed. Finally, some real-world examples of installed SHM systems on tall and important structures are presented.

### About the Speaker

#### Mohammadreza Vafaei

(PhD, P.Eng., TS., M.ASCE, M.EERI, M.IET)→(PhD, P.Eng., P.Tech., M.ASCE, M.EERI, M.IET)

Mohammadreza Vafaei is currently an associate professor in the faculty of civil engineering, Universiti Teknologi Malaysia (UTM), Johor, Malaysia. Before joining UTM, he served many consulting companies in Iran and has led the seismic design of many structures like tall buildings, air traffic control towers, airport terminals, water reservoirs, telecommunication towers, and monumental structures. His expertise includes seismic design and retrofitting of structures, vibration control through passive dampers, and structural health monitoring. He has been invited as the keynote speaker for several international conferences and workshops. He has also published more than 60 papers in referred journals and conferences.