講者簡介 Speaker Profile

　　徐幼麟，香港理工大學結構工程講座教授，建設及環境學院院長。在結構健康監測，結構風工程與智慧土木結構領域進行了三十多年的科學研究與工程應用。出版了 3 本學術專著，發表了近 300 篇 SCI 期刊論文。將研究成果應用於實際工程，包括香港青馬大橋與昂船洲大橋、中央電視大樓、上海中心大廈。先後獲得香港 2006 年裘搓優秀科研工作者獎、中國計算力學學會首屆錢令希計算力學成就獎、美國土木工程師學會 2012 Scanlan 成就獎、國際風工程學會 2018 Davenport 成就獎、中國工程院第十二屆光華工程科技獎。是香港工程師學會，英國結構工程師學會，美國土木工程師學會和美國工程力學學會會士，香港工程科學院院士。

　　Prof. XU You-Lin is currently Dean of the Faculty of Construction and Environment, Chair Professor of Structural Engineering, and Yim, Mak, Kwok & Chung Professor in Smart Structures at The Hong Kong Polytechnic University. Prof. Xu has conducted researches in structural engineering for over three decades, with special interests in wind effects on long-span bridges and tall buildings, structural health monitoring of mega infrastructure, structural vibration control and smart structures. He has published 3 scientific books and 300 SCI journal papers. He has been engaged in many high-impact knowledge-transfer projects, including the health monitoring projects on the Tsing Ma Bridge and the Stonecutters Bridge in Hong Kong, the CCTV Tower in Beijing and the Shanghai Tower in Shanghai. He received several prestigious awards, including the Guanghua Engineering Science and Technology Prize in 2018, the Davenport Medal in 2018, the ASCE Robert H. Scanlan Medal in 2012, the Qian Ling Xi Computational Mechanics Award in 2010 and Croucher Award in 2006. He is a Fellow of The Hong Kong Institution of Engineers, the American Society of Civil Engineers, the Engineering Mechanics Institute of the U.S.A., the Institution of Structural Engineers of the U.K, and the Hong Kong Academy of Engineering Science.

講題摘要 Topic Outline

智能結構: 大跨度橋樑結構健康監測

　　土木工程結構，如橋樑、建築、隧道，是一個城市的基礎。在過去的 20 年，世界各地建造了許多跨江過海大跨度橋樑。這些橋樑體積大，結構系統複雜，所處的自然環境惡劣，設計壽命長達一百多年。為了保證這些大跨度橋樑的耐用性和安全性，大跨度橋樑結構健康監測技術應運而生。本次報告就此介紹橋樑結構健康監測技術產生的背景，結構健康監測系統的基本組成和功能，結構健康監測的關鍵技術與應用實例，以及結構健康監測與智慧結構和智慧城市的關係。

　　Civil engineering structures, such as bridges, buildings, and tunnels, are the foundation of a modern city. In the past 20 years, many long span bridges across rivers and seas have been built throughout the world. These bridges of huge size and complex structural system are exposed to harsh environment. To ensure these bridges function properly during their more than 100 years design life and to prevent them from sudden failure during strong typhoons and severe earthquakes, structural health monitoring technologies emerge. This presentation will introduce the background of this special technology, its composition and functions, its key techniques and real applications, and its relationship with smart structures and smart cities.