

Seminar

Date: 21 October 2009 (Wednesday)

Time: 11:00 am - 12:00 pm

Venue: DE301, The Hong Kong Polytechnic University

Novel smart materials and their applications

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Abstract:

Recent progresses of novel smart materials such as shape memory polymer (SMP) and electro-active polymer (EAP) in our ongoing research are presented. It provides a detailed overview of these smart materials relating to their current and future applications. Novel styrene- and epoxy-based SMPs have been synthesized. And activation approaches of SMPs and SMP composites filled with functional fillers (carbon black, short carbon fiber, Ni chain, carbon buckypaper and infrared optical fiber) have achieved by electrical resistive heating, infrared light heating, infrared laser and solution. Furthermore, applications of SMP materials in morphing structure and space deployable structure have been presented. Additionally, recent progresses and applications of EAP material and structural health monitoring (SHM) technology are subsequently discussed.

Biosketch:

Professor Jinsong Leng obtained his BSc and PhD in the field of Engineering Mechanics and Composite Materials from Harbin Institute of Technology, China in 1990 and 1996, respectively. Currently, he is a full professor at the Centre for Composite Materials and Structures at the Harbin Institute of Technology, China. His research interests include smart materials and structures, structural health monitoring, shape-memory polymer, electro-active polymer and nanocomposite. Prof. Leng has authored or co-authored more than 180 scientific papers, 2 books and 8 patents, and delivered more than 16 invited talks around the world. He is the editor-in-chief of the *International Journal of Smart and Nano Materials* (Taylor & Francis Group), and the associate editor of *Smart Materials and Structures*. In addition, Prof. Leng has served as chair and member of scientific committees in international conferences and is the chair of the Asia-Pacific Committee on Smart and Nano Materials.

* Refreshment will be served after the seminar.