

Seminar On

DLP-based Additive Manufacturing of Complex Shape Advanced Ceramics

By

Dr. Shanghua Wu

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Date : 25 January 2019 (Friday)

Time : 05:00 pm – 06:00 pm

**Venue : Room 15-202, 15/F, State Key Laboratory of Terahertz and Millimeter Waves,
Lau Ming Wai Academic Building, City University of Hong Kong**

Abstract

Advanced ceramics have the advantages of high strength and hardness, good chemical stability and excellent high temperature property, as well as other unique physical properties. They are widely used as critical parts or components in advanced equipment and smart devices. These critical parts or components are manufactured by conventional ceramic processes such as slip casting, dry pressing, injection moulding, tape casting, and gelcasting etc. These processes have inherent technical shortcomings that are extremely difficult to address, and in many cases, impossible to overcome: (1) manufacturing of complex shape parts requires expensive tools or dies, long manufacturing cycle and high cost of post-machining; (2) many key parts with complex shapes cannot even be fabricated; (3) advanced ceramics parts with multi-functions/hybrid functions cannot be fabricated. These defects greatly limit the application of advanced ceramics in advanced equipment. Recent additive manufacturing (3D printing) can effectively overcome the above shortcomings, and provides a new possibility for manufacturing key ceramics parts with complex shapes. This talk presents an overview of principles and processing of additive manufacturing (3D printing) and the research work of Dr. Wu's group in the field of 3D printing of advanced ceramic components.

Biography

Shanghua Wu is currently Distinguished Professor at the School of Electromechanical Engineering, Guangdong University of Technology, in Guangzhou China. Dr. Wu has been working on research of advanced ceramics and manufacturing technology for over 30 years, has published over 80 research articles, and holds or have filed over 100 patents/patent applications. Dr. Wu's group current research works are concentrated on additive manufacturing (3D printing) of advanced ceramics and other high melting point materials and nano-ceramics and nano-ceramic composites.

***** ALL ARE WELCOME *****

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