Department of **Materials Science & Engineering** seminar series 2019

Controllable Ceramic Green-Body Configurations for Complex Architectures via 3D Printing

Speaker: Zhang Danwei
Department of Materials Science and Engineering, Engineering, NUS, Singapore

Date: **10th Oct 2019, Thursday**
Time: **3:00 to 3:30 pm**
Venue: **EA-06-03**

Abstract

Advanced ceramic materials with intricate designs are necessary for various modern engineering applications. Due to the limitation of traditional ceramic processing, ceramic additive manufacturing (AM) which allows a high degree of fabrication freedom, has gained significant interest in recent years. Despite AM capability to fabricate complex structure, fabrication of ceramic articles with geometrically-complex structure and intricate fine feature, while maintaining overall dense microstructures, using relatively simple and cost-effective process still remains as an open challenge. In this work, a combinatorial process of ceramic AM and photopolymerisation is demonstrated to produce flexible ceramic green-body. The proposed technique can achieve sintered structures of > 99.0% theoretical density with good mechanical rigidity. The fabrication of geometrically-complex architectures using the proposed technique complements the existing state-of-the-art ceramic AM techniques.

Danwei received her bachelor's degree in engineering from Engineering Science Programme (ESP) in National University of Singapore. She is currently a PhD candidate in Department of Materials Science and Engineering (MSE) under Prof. Ding Jun, focusing on Additive Manufacturing, particularly extrusion-based 3D printing. Her current research is focused on fabrication of structural and functional ceramic materials with complex configurations.

ALL ARE WELCOME!

Host: A/P Xue Junmin