

Title: 3-DPrinting of hierarchical composites**Description:**

Composite materials may be used as lightweight replacement but often lack the mechanical and functional response of the structure they replace. Also, traditional long fiber composite materials do not allow for the variety of shapes required for most applications. By using 3DP of particulate suspensions, supplemented by external forces such as vibration, electric or magnetic fields, composite materials with intricate shapes and expected properties are aimed to be fabricated. Orienting or positioning the particles into a hierarchical structure could combine the structural and functional response desired.

The scope of the PhD thesis will tackle both manufacturing and characterization.

Requirements:

Background in materials science or in mechanics is required, with interest in some of the following areas: colloidal science, rheology, magnetic fields, microscopy, fracture mechanics, bio-inspiration and robotics.

The candidate should be able to work in an inter-disciplinary environment and be enthusiast for learning and developing new skills.

Application Procedure:

Interested applicants please send your full CV to the PI at hortense@ntu.edu.sg .

The CV should include education, experience, interests and the names and contacts of 2 referees.

For any queries, please feel free to email the PI at hortense@ntu.edu.sg .