

**DEPARTMENT OF MECHANICAL ENGINEERING****SEMINAR****Online**

Title: Thermal-sensitive cytoskeleton-inspired networks from an aqueous two-phase system

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Date: 27 April, 2021 (Tuesday)

Time: 10:30 a.m.

Zoom Link: 1) Link to join the meeting:

<https://hku.zoom.com.cn/j/95558245160?pwd=UHhkc2FnS1psODhlRXh5U3krQVRTQT09>

2) Meeting ID: 955 5824 5160

3) Password: 114915

Abstract:

Liquid-liquid phase separation of biomolecules (e.g., proteins and RNA) underlines the formation of membraneless organelles (e.g., P granule, nucleoli, stress granules etc.), which play a key role in regulating the biological functions of cells. However, the aggregation of misfolded proteins leads to several neurodegenerative diseases. In order to address this issue, recent investigations have shown that compressive stresses in a polymer network can suppress liquid-liquid phase separation, displaying the similar elastic constraint function of cytoskeleton. The previous reports are based on static networks, whereas cytoskeleton is a complex and dynamic network of interlinking protein filaments. Dynamic regulation of liquid-liquid phase separation remains unexplored. Here, inspired from cytoskeleton, we have designed a thermal-sensitive dynamic network based on the viscoelastic phase separation of an aqueous two-phase system consisting of poly(N-isopropyl acrylamide) and dextran for dynamically regulating the liquid-liquid phase separation of FUS proteins. In this seminar, some preliminary results displaying the formation and properties of dynamic network structures, as well as their dynamic regulation on the liquid-liquid phase separation of FUS proteins will be presented and discussed.

ALL INTERESTED ARE WELCOME

For further information, please contact Prof. A. Shum at 3917 7904.

Research areas: Advanced Materials and Thermofluids