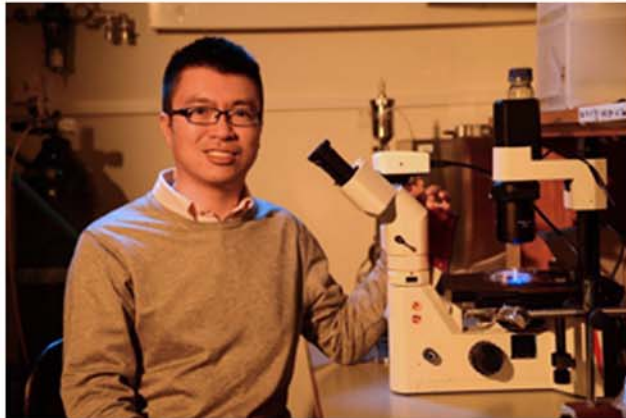


BIOENGINEERING & BIOMEDICAL ENGINEERING RESEARCH SEMINAR



BIOMIMETIC DROPLETS FOR BIO-MATERIALS

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Droplets are ubiquitous and important in biological systems; they are also widely used as templates for generating artificial bio-materials, for instance, as drug delivery vehicles and tissue scaffolds. To achieve the required immiscibility between the droplet and the continuous phases, air/water and water/oil systems are commonly used. In biological liquid phases, which are typically made up of aqueous solutions, droplets are also observed. For instance, droplets are observed in oocytes of *Xenopus* frogs and germ cells of *C. elegans*. This suggests that oil-free, or organic-solvent-free aqueous/aqueous droplets remain inadequately understood or investigated. In this talk, I will discuss our efforts in investigating the physico-chemical and interfacial properties of aqueous two-phase systems, and studying how bio-mimetic behaviors, such as budding, can be induced in aqueous-aqueous droplets. Our findings are potentially relevant in biological systems and may inspire new strategies to formulate novel functional biomaterials.

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