Center for Integrated Catalysis Webinar Series

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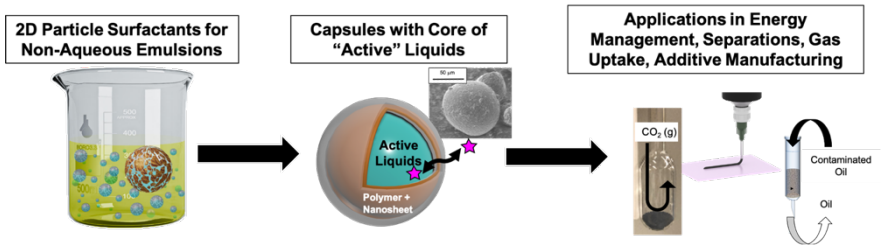
"2D Particle Surfactants and Pickering Emulsions for Reagent Compartmentalization"

Abstract: Pickering emulsions, or those stabilized by solid particles, provide a phase separated system with a high degree of interface. The Pentzer group has developed 2D particles (i.e., nanosheets) as surfactants for different fluid-fluid interfaces, including oil-water, oil-oil, ionic liquid-water, and more recently demonstrated the stabilization of gas bubbles using nanosheets. This presentation will cover the use of Pickering emulsions stabilized by 2D particles (i.e., nanosheets) and compartmentalized reagents to prepare capsules with core of ionic liquid or phase change material. The use of graphene oxide nanosheets and their modified derivatives, as well as MXenes, will be discussed, coupled with polymer deposition or interfacial polymerization to give isolable capsules. Application of these hybrid. structures in gas sequestration, thermal energy storage, and electromagnetic interference (EMI) shielding will be highlighted.



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Tuesday, March 1st, 2022

1:00 p.m. (PST)| Zoom