

Seminar



Dr. Benjamin Doughty

Research Staff;

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Oct. 3, 2018 at 4:00-5:00pm

In Widtsoe 330

Host: Dr. Yi Rao

Chemical Organization, Structure and Dynamics at Complex Interfaces Probed with Surface Specific Spectroscopies

Abstract: The mechanisms that govern reactions at interfaces are mediated by often unexpected chemical compositions and anomalous associated dynamics that result from the asymmetry of the interface itself. However, probing the interfacial monolayer using conventional analytical tools is often not possible due to the overwhelming signals from bulk phase species. This is exacerbated at complex interfaces where competing processes and a wealth of local environments can uniquely drive chemistry and complicate experimental interpretations. To address these challenges, I will present a distinctive combination of materials syntheses, surface-specific optical experiments, and theory aimed at developing a cohesive physical understanding of interfaces and associated chemical processes that underlie chemical selectivity. Specifically, this talk will present new insight gained into catalytic selectivity at well-defined interfaces, self-assembly of synthetic lipids at liquid-liquid interfaces, and ongoing work aimed at elucidating the mechanisms driving selective chemical extractions. Our findings reveal new insight into the chemical and physical phenomena taking place at interfaces and point to intuitive structural arguments that describe selectivity and self-assembly.

Websites: Visit chem.usu.edu for more info and to view his website.

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