

Physical Chemistry Seminar

219 Brown Laboratory

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Molecular structure and Interactions at electrochemical interfaces



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Electrochemical solid|liquid interfaces are critically important for materials for energy storage, harvesting, and conversion, and for material stability in general. Yet, a real-time visualization of dynamic processes at electrified solid|liquid interfaces with close to atomic/molecular resolution is extremely challenging. Processes such as an electrochemical surface modification, molecular interactions and structuring or ion migration in confinement are inherently difficult to visualise in real time with nano scale resolution. In this presentation I will highlight recent advances in characterizing electrochemical interfaces with the electrochemical surface forces apparatus (EC-SFA), high-resolution electrochemical imaging and force probe studies, ranging from electric double layer characterization in ionic liquids, to real-time measurement of ion migration in nanometer confined slit pores and single molecular interactions.



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