



CHEMISTRY & CHEMICAL BIOLOGY SEMINAR: Force Spectroscopy of Biointerfaces – Controlling Adhesion, Lubrication, and Wear

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About The Speaker:

Dr. Roberto C. Andresen Eguiluz is an Assistant Professor in the Department of Materials Science and Engineering at the University of California Merced since July 2019. He has a degree in Mechanical Engineering from the National Autonomous University of Mexico (UNAM), a Ph.D. in Materials Science and Engineering from Cornell University, and had postdoctoral appointments at the University of Illinois at Urbana-Champaign and the University of California, Santa Barbara. His research interests center around the understanding of bio-interfaces, across several length scales (molecular to small tissue scales).



Date:

2/12/2021

Time:

12:30 PM-2:00 PM

Link:

Please contact
snsgradstaff@ucmerced.edu
for the Zoom link and
passcode.

Abstract:

The Surface Forces Apparatus (SFA) is a versatile technique for directly measuring the interaction forces between two surfaces/interfaces with sub-nanometer resolution in distance and 10 picoNewtons in force. Normal and lateral forces can be measured, as well as changes in the refractive index, while visualizing the interface. In this seminar, I will describe the SFA technique in the context of a biomimetic molecule that mediates high adhesion forces in wet and high ionic strength environments (e.g., underwater adhesives), and glycoproteins that provide robust wet lubrication and wear protection (e.g., synovial joint lubrication) of inorganic surfaces.

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