

The Alexander M. Cruickshank Lectureship
University of Rhode Island, Department of Chemistry
February 27, 2023
5:30 PM, CBL5 010

Please join us at 5 PM in the CBL5 lobby for a pre-lecture reception with light refreshments

Thin-skinned: How to Design Three-dimensional Surfaces

Teri W. Odom

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Abstract: Wrinkles are ubiquitous in nature, from mountain ranges to aging faces to bacterial colonies. These surface patterns form when strain in a system is relieved. However, wrinkles with features at the nanoscale are hard to achieve because of limited materials combinations. This talk will describe a memory-based, sequential wrinkling process that can transform flat polymer films into multi-scale, three-dimensional hierarchical textures. This approach to generate and control wrinkle topographies based on a thin fluoropolymer can produce patterns that mimic those in nature. We will discuss how these functional, 3D nanoscale wrinkles can be used for applications related to superhydrophobicity, selective chemical reactivity, and smart materials platforms.



Biography: Teri W. Odom is the Joan Husting Madden and William H. Madden, Jr. Professor of Chemistry and Chair of the Chemistry Department at Northwestern University. She is an expert in designing structured nanoscale materials that exhibit extraordinary size and shape-dependent optical and physical properties.

Odom is a Member of the American Academy of Arts and Sciences and a Fellow of the American Chemical Society (ACS), the Royal Society of Chemistry (RSC), the Materials Research Society (MRS), the American Institute for Medical and Biological Engineering (AIMBE), the American Physical Society (APS), and Optica. Select honors and awards include: the RSC Centenary Prize; the ACS National Award in Surface Science; a Research Corporation TREE Award; a U.S. Department of Defense Vannevar Bush Faculty Fellowship; a Radcliffe Institute for Advanced Study Fellowship; an NIH Director's Pioneer Award; the MRS Outstanding Young Investigator Award; the National Fresenius Award from Phi Lambda Upsilon and the ACS; an Alfred P. Sloan Research Fellowship; and a David and Lucile Packard Fellowship in Science and Engineering.

Odom was founding Chair of the Noble Metal Nanoparticles Gordon Research Conference (GRC) and founding Vice-Chair of the GRC on Lasers in Micro, Nano, Bio Systems. She was an inaugural Associate Editor for *Chemical Science* and founding Executive Editor of *ACS Photonics*. Currently, Odom is Editor-in-Chief of *Nano Letters*.