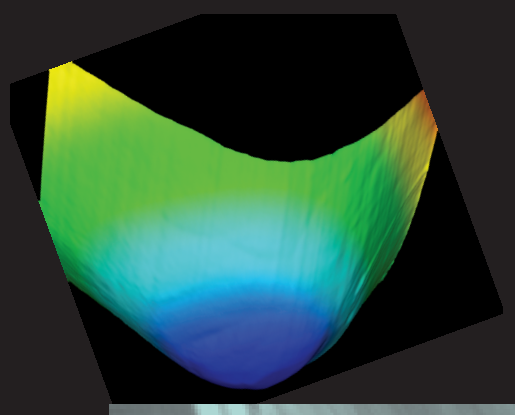

Spring 2008 Wulff Lecture

Tuesday, March 18, 2008
4:30–5:30pm
Room 6-120
Reception to follow in Chipman Room, 6-104.

Scratching Below the Surface:

Material Metastability Enables Engineering Solutions

Prof. Krystyn J. Van Vliet

Thomas Lord Assistant Professor
Department of Materials Science and Engineering, MIT

Coupling between the chemical and mechanical states of materials enables applications such as actuators and transducers, defines the environmental susceptibility of mechanical stiffness and strength, and facilitates all biological processes in cells including adhesion to extracellular materials, migration, and differentiation. The Van Vliet Laboratory for Material Chemomechanics studies this chemomechanical coupling in a range of material systems including supersaturated metal alloys, nanoscale amorphous oxides, synthetic polymer thin films, and living mammalian cells and microbes. Prof. Van Vliet will discuss recent progress in the nanoscale experiments and computational simulation of three such material systems, and share what her group has learned about the challenges of modeling and understanding material behavior at surfaces and interfaces that are far from equilibrium.

The Wulff Lecture is an introductory, general-audience, entertaining lecture which serves to educate, inspire, and encourage MIT undergraduates to take up study in the field of materials science and engineering and related fields. The entire MIT community is invited to attend. The Wulff Lecture honors the late Professor John Wulff, a skilled, provocative, and entertaining teacher who inaugurated a new approach to teaching the popular freshman subject: 3.091 Introduction to Solid State Chemistry.

COURSE III MSE