



Ingersoll Lecture

Friday, April 8, 2011 • 4:00 P.M. • 2241 Chamberlin Hall

Pat Thiel

Coffee & Cookies Served at 3:30 p.m

Iowa State University

Host: Bruch

Beauty in Complexity

Low Friction and Adsorption Properties of Quasicrystal Surfaces

Department of Physics Colloquium

Quasicrystals are metallic alloys or intermetallics which have an unconventional atomic structure. They are well-ordered on an atomic scale, but not periodic, and they often exhibit so-called forbidden rotational symmetries. This atomic structure engenders unusual surface properties and surface phenomena. Examples come from the morphology of films grown on quasicrystals. The unusual features include nucleation at trap sites that are intrinsic to the surface structure, and a quantum size effect that drives the formation of mesa-like structures. Another example is low friction, which arises (at least in part) from the quasiperiodic atomic structure. Yet another example is the development of defect sites, which can form at the surface and propagate a defective stacking sequence in toward the bulk. These unusual features all are consequences of the beautiful - and sometimes maddeningly complex - atomic structure of these metallic alloys.



THE UNIVERSITY
of
WISCONSIN
MADISON

Please Post