

Physics Colloquium Series

Atomic Scale Tribological Properties of Quasicrystals

The fundamental question of whether or not the desirable properties of quasicrystals are a direct result of quasiperiodic atomic structure were investigated with a combined atomic force microscopy / scanning tunneling microscopy. In this talk, I will address following nanotribological issues; (i) influence of the chemical modification (oxidation or hydrocarbon passivation) of the atomically clean surface upon friction and adhesion forces (ii) Elastic and plastic regime of the tip-sample mechanical junction that depend on the applied load and the chemical nature of the tip and surface. (iii) atomic scale origins of the low friction in quasicrystals; correlations between the low friction and their exotic atomic structure.

Jeong Young Park

*Lawrence Berkeley National Laboratory
University of California, Berkeley*

Thursday, March 3, 2005

4:00-5:20 PM MND 1015

OPEN & FREE TO ALL STUDENTS & FACULTY