

The Interaction of Divalent Cd and Pb with Calcite {10 $\bar{1}$ 4} Cleavage Faces

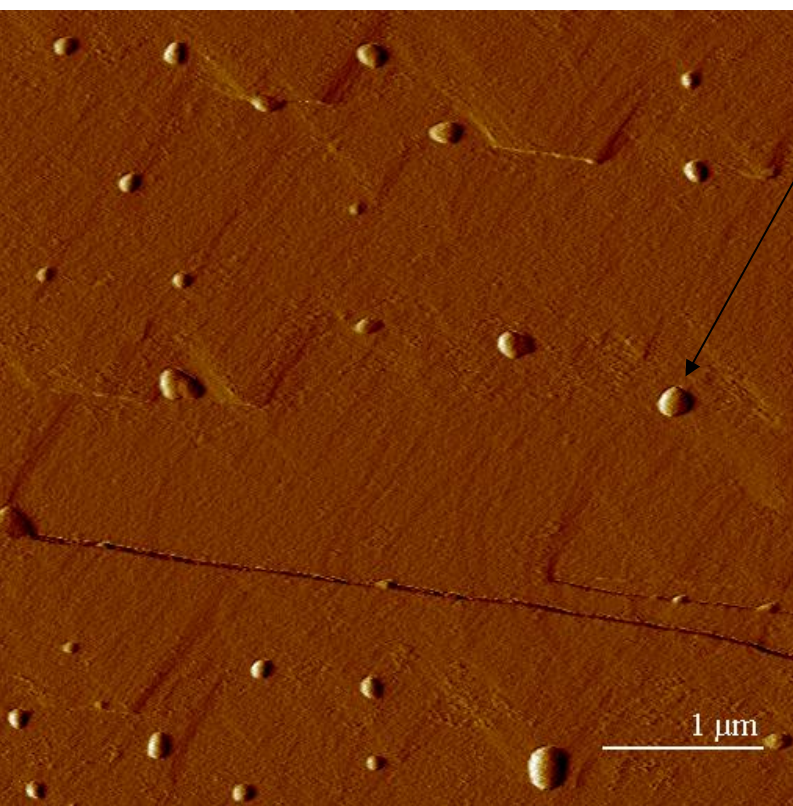
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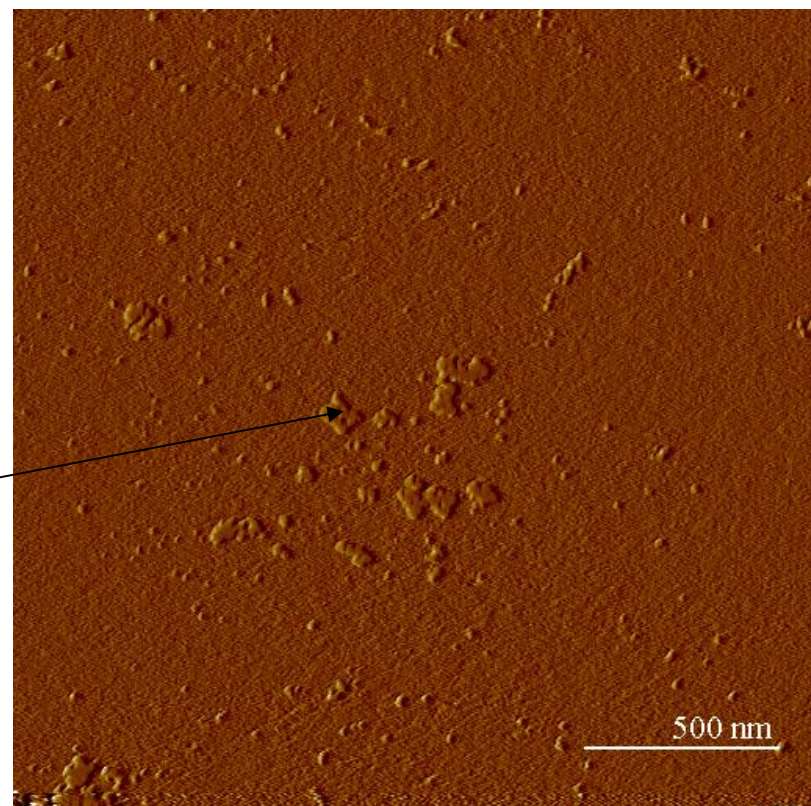
Atomic Force Microscope experiments are investigating the interaction of the {10 $\bar{1}$ 4} cleavage face of calcite with 1 μ M Pb(II) and 0.1 μ M Cd(II) solutions. The ellipsoidal features in the Pb circumstance are thought to be PbCO₃ nucleating on the calcite surface. The growth features in the Cd case are believed to be due to a (Cd,Ca)CO₃ solid solution. Additional experiments suggest that under specific conditions the Cd-based features exhibit epitaxial growth on the calcite surface.



Ellipsoidal PbCO₃ surface features with heights in the 4-20nm range

Flat (Cd,Ca)CO₃ surface growths

With nominal heights in the 2-4nm range



500 nm