

## Microscopic Surface Dynamics Studied by Scanning Probe Microscopy

권기영

경상대학교 화학과

Arrangement of individual atoms and molecules with atomic precision and understanding the resulting properties at the molecular level are ultimate goals of chemistry, biology, and materials science. For the past three decades, scanning probe microscopy has made strides towards these goals through the direct observation of individual atoms and molecules, enabling the discovery of new and unexpected phenomena.

This talk will discuss the origin of forces governing motion of small organic molecules and their extended self-assembly into two-dimensional surface structures by direct observation of individual molecules using scanning tunneling microscopy (STM). In addition, atomic force microscopy (AFM) is utilized for the investigation of fundamental mechanisms of bone mineral dissolution by examining atomically well characterized simulated bone minerals under aqueous solution environments.

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