

ATOMIC FORCE MICROSCOPY (AFM) APPLICATIONS FOR NANOTECHNOLOGY

Abstract : Molecular Imaging / Mr Gerald KADA

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The unique combination of characterization and modification of solid surfaces, with high resolution (Nanometer and sub-nanometer resolution) at all environments (air, solution, and vacuum) makes Atomic Force Microscopy the technique of choice for Nanotechnology.

We will discuss Nanotechnology applications in the following areas:

1. **Controlled conditions operation in air and solution:** both controlled temperature (heating and cooling) and controlled environment (inert or harsh).
2. **Topography and recognition:** introducing new unique AFM technology called TREC that enables measuring Topography and RECOgnition in a single scan. Specific applications to Bionanotechnology will be described.
3. **Electrochemical applications:** simultaneously imaging and modifying a surface of the nanometer scale under potentiostatic control.
4. **Sensors:** such as electrochemical, bio, chemical and thermal.

