

ATOMIC FORCE MICROSCOPE (AFM)



Intended Use of the Instrument: Analysis of surface morphologies and properties of materials

Instrument Brand/Model: Nanosurf/Flex Amf C3000

AGU CRF Thematic Laboratory: Nano-Imaging and Analysis Laboratory

Location of the Instrument: AGU-CRF LAB4

Academic Director(s) of the Instrument:

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Atomic Force Microscopy (AFM) is a three dimensional (3D) imaging technique used for morphology and topography characterization of materials. It is based on interaction between extremely sharp probe tip (cantilever) in 5-10 nm thickness and the surface of a sample. In addition to imaging the surface, it is possible to characterize the mechanical, electrical and magnetic properties of the material with static force, dynamic force, lateral force, and phase imaging methods. AFM is one of the most important tools for material characterization

alongside with optical and electron microscopy, achieving resolutions down to the sub-nanometer scale. Due to its flexibility, AFM enables the analysis of many different sample types from ultra high vacuum environment to liquid samples, and therefore it could be used in various disciplines such as physics, chemistry, biology, and materials science.