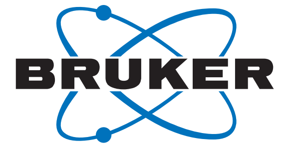
Bruker's Exhibitor Spotlight Sessions



Exhibitor Spotlight 11

Characterization of Functional Materials by Electrical AFM Techniques

Wednesday, August 5 | 1:30 PM to 2:00 PM

Characterization of Functional Materials by Electrical AFM Techniques

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Abstract

Nanometer scale characterization of materials exhibiting function properties, such as ferroelectricity and piezoelectricity, have been a key area of research and development in the field of Atomic Force Microscopy (AFM). Although there have been several AFM techniques used to study functional properties of these materials over the years, there are have been a number of recent developments which add to the capabilities and flexibility of how to approach these experiments, Piezoresponse Force Microscopy (PFM) is a common technique used in this field, and new approaches to this method have opened up new application areas as well as overcome limitations in traditional contact mode approaches.

This presentation will discuss advancements in PFM and other related techniques. Some areas that will be covered include approaching experiments with electrical DataCubes which provides the ability for spectroscopy mapping. Performing electrical studies, such as PFM or Conductive AFM (CAFM/TUNA), in fluid environments is now possibly using probes developed for Scanning Electrochemical Microscopy (SECM). Complex spectroscopy experiments, such as Switching Spectroscopy (SS-PFM) for quantitative, artifact free measurements will also be discussed. These developments will be shown with application specific examples of how they are applied.