

## **AFM Technologies in Life sciences**

**Christoph Gerber**

Swiss Nanoscience Institute  
NCCR National Center of Competence for Nanoscience  
Institute of Physics Univ. of Basel  
Klingelbergstrasse 82  
4056 Basel  
Switzerland

<http://cantileversensors.unibas.ch/ChGerber>

Atomic Force Microscopy technologies have come of age and are ubiquitous in many applications in life sciences. Besides allowing high resolution 3 D images of samples close to their native state various technological developments has turned the technique into a multifunctional nanoscopic toolbox in life sciences. A variety of applications will be discussed :

High speed AFM : Seeing Molecular Motors at work

AFM has entered the clinic:

- AFM Force spectroscopy in physiological environment revealing a nanomechanical signature of breast cancer

-Taking AFM Technology beyond imaging towards Personalised Healthcare (PHC ) diagnostics

-Non invasive Breath analyses of patients in cancer diagnosis