

# High-Speed AFM in Life Science Applications

Wednesday, May 18<sup>th</sup>, 2022 | 14:00 CEST & 18:00 CEST



Join us and our special guest speaker Prof Dario Anselmetti, Bielefeld University, Germany, for this virtual workshop on High-Speed BioAFM in Life Science Applications. The workshop will include a talk, short overview of the technique, and a demonstration on the NanoRacer High-Speed AFM LIVE from our laboratories in Berlin, Germany. Prof Anselmetti will provide an insight into his work using High-Speed AFM, with a particular focus on industrial R&D applications.

**The workshop will be held live at two different times. Choose the time zone that suits you best!**

**Session 1: 14:00 CEST | 1:00 PM BST**

**Session 2: 18:00 CEST | 9:00 AM PDT | 12:00 PM EDT**

Atomic Force Microscopy (AFM), an advanced multi-parametric imaging technique, not only delivers high resolution 3D images of the topography of living biological samples in the nm-range, but also enables the characterization of the nanomechanical properties of molecules, cells, and tissues, and the visualization of structural changes taking place at the molecular level.

## Program - Wednesday, May 18<sup>th</sup>, 2022

**Session 1: 14:00 CEST | 1:00 PM BST - Session 2: 18:00 CEST | 9:00 AM PDT | 12:00 PM EDT**

**14:00 | 18:00 Welcome & Introduction**

*Carmen Pettersson, European Marcom Manager BNSM*

**14:05 | 18:05 High-Speed AFM in Industrial R&D Applications: From Single Molecules to Material Science**

*Prof Dario Anselmetti, Bielefeld University, Germany*

**14:35 | 18:35 Introduction to High-Speed AFM in Life Sciences**

*Dr Thomas Henze, Head of Applications, Bruker BioAFM*

**14:40 | 18:40 Live Demo NanoRacer**

*Dr Andreas Kraus, Application Scientist, Bruker BioAFM*

**15:00 | 19:00 End**



Please don't hesitate to contact us at [productinfo.emea@bruker.com](mailto:productinfo.emea@bruker.com) if you have any questions.

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## Abstract and Biography

### High-Speed AFM in Industrial R&D Applications: From Single Molecules to Material Science

*Dario Anselmetti, Professor for Experimental Biophysics and Applied Nanoscience at Bielefeld University and Bielefeld Institute for NanoScience (BINAS), Germany*

In this talk, I will present the results of novel studies using the High-Speed AFM technology, with a particular focus on industrial R&D applications. The results, obtained in experiments using two different high-speed AFM systems, were conducted under in-situ conditions, in a broad and controlled temperature range, and using material-specific imaging modes, such as the Kelvin probe mode. We used High-Speed AFM for applications as varied as the investigation of the molecular structure, dynamics and interplay of nucleic acid systems designed for immuno- and gene therapy applications, polysaccharides in the food industry and corrosive aging in technical polymers and stainless steel surfaces in material science.



*Dr Dario Anselmetti holds the chair in Biophysics and Nanoscience in the Physics Department of Bielefeld University. After obtaining his academic degree in Physics in 1987 and PhD on the topic of SPM in 1990, both from Basel University, he took on a postdoc position at the IBM Research Lab in Rüschlikon, Switzerland. After a collaboration with the industrial partner Hoffmann-La Roche, he joined the research department of Novartis (former Ciba-Geigy) in 1994 as a research associate and project leader in nanotechnology and biophysics. In 2000, he returned to academia, taking up his current position.*

*Dr Anselmetti has authored over 200 scientific publications and owns several patents in the field of single molecule biophysics, SPM, AFM single molecule force spectroscopy, micro- and nanofluidics, optical tweezers, and nanopores. He is a Novartis Leading Scientist (1998) and a member of the North Rhine-Westphalian Academy of Sciences, Humanities and Arts (2005).*