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#### Dear Daniel,

Since the launch of our new flagship instrument, the DriveAFM, we have seen an intense period of activity, both within Nanosurf Headquarters, as well as all across our global sales organization. Key opinion leaders and leading researchers have reacted positively to the novel capabilities the DriveAFM brings, and the clear advantages and possibilities now within their reach. Although times remain challenging, our applications and sales teams have been working overtime - answering questions about the new instrument, measuring customer samples and giving demonstrations - albeit only virtual up until now.



We are not resting on our laurels of the DriveAFM, however. During Q2 we introduced the PicoBalance, a new mode for the DriveAFM, enabling mass measurements in the picogram range. We are continuing our development efforts and will be launching new electrical characterization modes during the next quarter.

Yours sincerely, Dr. James Berwick Global Head of Sales & Marketing

### Featured story

## Dr. Sergei Magonov tests the DriveAFM

"I am thrilled to have had the opportunity to use the new DriveAFM by Nanosurf. The DriveAFM employs photothermal excitation of the probe, which facilitates low-noise detection and low-force imaging with high spatial resolution. I greatly appreciate Nanosurf's design approach, aimed at improving basic microscope performance by addressing thermal stability, emphasizing ease of use and the expansion of imaging capabilities by adding off-resonance modes. This microscope is the latest example of the exponential development going on at Nanosurf, which in my opinion, makes the company the rising star in the field of scanning probe microscopy."



#### Dr. Sergei Magonov, SPM Labs

New modes!

Nanosurf launches PicoBalance option for DriveAFM

The DriveAFM now has a new unique option, the PicoBalance - a novel tool to monitor the mass of living cells and particles, over a period of up to several days, with a sensitivity in the picogram range, and a time resolution of milliseconds. The PicoBalance can be used to study the mass fluctuations of living cells during normal cell cycles and their response to various external stimuli including virus infections and chemical agents.

Check out PicoBalance

FluidFM option now available on DriveAFM:

FluidFM Probe Microscopy (FPM), which combines the force sensitivity and positional accuracy of an AFM with FluidFM technology by Cytosurge, is now available on the DriveAFM. With the release of this option, Nanosurf continues to strengthen its market leading position in FluidFM applications.

# Show me FluidFM<sup>®</sup>

### Conference corner: upcoming virtual opportunities. SAVE THE DATE

community

# July 12, 3 pm CET



Organized by N4M, the Nanoengineering for Mechanobiology

**PicoBalance: Mass measurement with DriveAFM** 

Dr. Gotthold Fläschner will present the concept of PicoBalance and explain its working principles. Examples of measuring mass of a microparticle including cells, yeast and polymeric beads will be presented.

<u>Register now</u>

## July 29, 2 pm CET

### Piezo Force Microscopy

In this webinar, Dr. Patrick Frederix will present Piezo Force Microscopy and describe its implementation on Nanosurf instruments. Dr. Frederix will also show details of high-voltage PFM, switching spectroscopy and dual-frequency resonance tracking.

#### Register now

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# Sep 2, 2 pm CET



**FluidFM applications on DriveAFM** During this presentation, Dr. Frederix will discuss the enhanced capabilities of the FluidFM when integrated with the DriveAFM. The 20  $\mu$ m Z-axis improves single cell injection and colloidal spectroscopy. The new 150  $\mu$ m sample stage enables the study of cell-substrate and cell-cell adhesion forces. In addition the combination of FluidFM with the PicoBalance enables mass measurements of single cells and microparticles aspired to the cantilever with sub-nanogram resolution.

Register now

# Sept 30, 9 am and 5 pm CET

#### Scanning Microwave Microscopy

In this webinar, Dr. Denis Vasyukov will describe Scanning Microwave Microscopy (SMM), a scanning probe technique that uses microwaves to probe up to a few hundred nanometers below the surface. The information gathered from the SMM measurement can be used to reconstruct important electrical parameters of the material, such as the dielectric constant, conductivity and resistance, and carrier density.



### Installation reports

FlexAFM system installed at the University of Birmingham



We recently installed a FlexAFM at the Department of Chemical Engineering at the University of Birmingham in the UK. The system is mounted on an existing Olympus inverted optical microscope and includes the FluidFM<sup>®</sup> Add-On from Cytosurge, combining microfluidics and hollow cantilevers with the AFM.

The system will be used for producing images and nanomechanical maps of surfaces of fibres, as well as studying the interaction of oil droplets with various surfaces. Dr. Jason Zhang, the lead researcher said "I am hopeful that we will explore the full capacity of this wonderful system in the coming weeks".



#### Read more about Dr. Zhang's work

CoreAFM installed in a cleanroom at the University of Hannover

A CoreAFM was installed in May at the Institute of Solid-State Physics at the University of Hannover, Germany. They intend to use the CoreAFM in the cleanroom to measure the topography of III–V semiconductor samples, such as the droplet-etched nanoholes and surface roughness of nanostructures. Dr. Michael Zopf commented, "the PFM module is helpful to measure the piezo response of the piezo-electric materials, which we use for strain tuning of quantum dots or 2D-materials. We also use the lithography mode to precisely manipulate and position nanoparticles. The CoreAFM is very powerful and user-friendly for our research".

More on Dr. Zopf's Cleanroom-CoreAM



Selected recent publications using Nanosurf AFM

#### Differential cellular responses to adhesive interactions with galectin-8- and fibronectin-coated substrates

Actin cytoskeleton deregulation confers midostaurin resistance in FLT3-mutant acute myeloid leukemia

FluidFM for single-cell biophysics

Impact of the film-forming dispersion pH on the properties of yeast biomass films

Effects of reinforcement of sodium alginate functionalized halloysite clay nanotubes on thermo-mechanical properties and biocompatibility of poly (vinyl alcohol) nanocomposites

Inkjet Printing of an Electron Injection Layer: New Role of Cesium Carbonate Interlayer in Polymer OLEDs

Host EPAC1 modulates rickettsial adhesion to vascular endothelial cells via regulation of ANXA2 Y23 phosphorylation

Atomic Force Microscopy to Characterize Ginger Lipid-Derived Nanoparticles (GLDNP)

Nanosurf AG Gräubernstrasse 12 4410 Liestal Switzerland