

#### Dear,

Seven universities in Switzerland are listed in the top 200 of the QS World University Rankings 2019 – ETH Zurich and EPFL both within the top 30. This is even more impressive considering the population of the entire country is just 8.5 million. At Nanosurf we maintain a strong relationship to our roots at the University of Basel, but also to the ETH Zurich, EPFL and other Swiss research institutions. From such collaborations we draw inspiration for more innovations and cuttingedge solutions.

The development of the new Cytomass technology together with the Daniel Mueller Group of the ETH Zurich, as featured in this edition of our Newsletter, is only one example from a series of innovations we have in our development pipeline – all of which are new solutions that empower nanotechnology researchers to stay one step ahead of the game in their respective fields.



We wish you all the best for your research and are happy to support you however we can.

Yours sincerely, Dr. Urs Matter CEO

#### Conference corner

## Upcoming (virtual) opportunities to talk to us



With the ongoing COVID-19 pandemic disrupting daily activities, most conferences continue to be postponed or cancelled. To stay in touch with our customers, we had begun to regularly host web events. After the first series of webinars and online demos, we are now in the process of planning the second series, and would much appreciate you visiting our website to vote which topics you would be interested in. We will be scheduling these series of events, based on your feedback.

#### For our customers

#### Software updates

New analysis software: We have recently released a free force curve analysis software.

Nanosurf users can download it here.

ANA analysis software



### Featured story

## Collaboration with ETH Zurich to develop the Cytomass monitor



We are collaborating with Prof. Daniel Müller's group at ETH Zurich to develop the Cytomass Monitor. The Cytomass Monitor enables the researcher to monitor the mass of adherent cells with picogram-level mass sensitivity and millisecond-level time resolution. The mass is derived from the resonance frequency of a cantilever, which is oscillated at sub-nanometer amplitudes using a laser focused at the base of the cantilever. The Cytomass Monitor is based on the picobalance developed by Dr. Müller's group and published in Nature in 2017. A summary of the paper can be found on our website.

The ETH recently published a video about the collaboration, in which Prof. Daniel Müller of the ETH Zurich and Nanosurf's CEO Dr. Urs Matter discuss the collaboration and share some insight into the technology, as well as giving you a behind-the-scenes peak at the instrument - watch it here.

#### Product updates

#### A new universe of accessories



We have introduced a new line of sample holders compatible with our CoreAFM and FlexAFM. These include heating and cooling stages, Petri dish holder, environmental chamber, variable in-plane magnetic field sample holder, C-AFM sample holder and electrochemical cell. These sample holders were designed with user convenience as the primary criterion, with all these accessories following the same design rules - this allows users to easily interchange the sample holders on the AFM as needed for the specific application at hand. They are also designed in a way that makes them fit multiple systems.

**View details** 

#### New customer story

### Flex-Axiom with custom 3-inch wafer sample holder in a cleanroom



We recently installed a Flex-Axiom in a clean room at the Department of Components for Highfrequency Electronics (BHE) of the University Duisburg-Essen. The research group intends to use the AFM for high resolution topographical and electrical measurements for research and practical education. According to Christian Blumberg "... we struck gold with the FlexAFM, since it allows us good and fast monitoring of our processes and is very user friendly at the same time".

### **Updates from Applications & Support**

#### Highlighted publication

AFM used to characterize plasma polymerized films

Plasma polymerize organic thin films are of importance to biosensor development due to their ability to covalently attach various biomolecules. In a recent publication, researchers at the Leibniz Institute for Plasma Science and Technology, reported the results of their investigation into the stability and functionality of plasma polymerized surfaces for biosensor development. Nanosurf's CoreAFM was used to investigate the surface morphology of these films. Read the article here.

# **Highlighted publication**

Fluidic force spectroscopy characterizes cell detachment forces

In an article published in Colloids and Surfaces B: Biointerfaces by Prof. Jurgen Groll's group at The Julius Maximilians University of Wurzburg, Nanosurf's Flex-FPM was used to study detachment forces and cell-material interactions by single cell force spectroscopy (SCFS). Individual cells were attached to the cantilever by aspiration through a microfluidic channel. This overcomes some of the limitations of traditional SCFS by extending the range of force that can be measured. The full, open-access article can be found here.

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