

A platform to share the excitement about new nanomaterials,  
nano-devices and methods

# NANOSCIENCE SYMPOSIUM

## Bioelectrical analysis techniques – from lab to product

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### Abstract:

Nanion Technologies was founded in 2002 as a spin-off of the Center for Nanoscience in Munich. The main and basic idea was the development of a chip based patch clamp technique for on the one hand reducing the stray capacitance compared to classical pipette based patching resulting in higher bandwidth and reduced noise of the recordings. But besides this pure biophysical approach of improving the recording quality the same technique opens up new possibilities for automation and parallelization, which enables the application of patch clamp to much higher throughput needs of the industrial settings of big pharma. In the presentation the main developments and milestones on the way from a basic low throughput device to a high throughput screening robot will be shown.

Specialized on the measurement of small ionic currents through cellular membranes Nanion also expanded the bioelectrical instrumentation to other related areas ranging from miniature devices for bilayer recordings with micro electrode cavity arrays – over solid supported membranes on gold electrodes for the assessment of membrane transporters with low conductivity to field potential and capacitance measurements on electrical active cell layers adherent planar electrodes. The latter enables indirect biomechanical studies in a high throughput manner – which have been recently further developed to real force measurements in a well plate format.



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