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JPK talks with Dr Frank Lafont, Director of the BioImaging Center Lille (BICeL), about the use of the NanoWizard® AFM together with fluorescence microscopy in the study of living cells.

Berlin, June 19th, 2018: JPK Instruments, a world-leading manufacturer of nanoanalytic instrumentation for research in life sciences and soft matter, reports on the biomedical studies on living cells at the BioImaging Center Lille (BICeL) under the direction of Dr Frank Lafont using JPK's NanoWizard® AFM systems.

Dr Frank Lafont heads a Research Group and is the Scientific Director of the [BioImaging Center Lille](#) (BICeL). The Group and the Center bring together the work of several institutions: Univ. of Lille, CNRS, INSERM, Hosp. Univ. Ctr. de Lille and the Institut Pasteur de Lille. Multiple imaging techniques including atomic force, confocal and multiphoton microscopy are applied to develop advanced imaging methods in the study of living cells.

His Research Group is interested in host-pathogen interactions using AFM to examine molecule-molecule, molecule-cell, cell-cell force interactions and other parameters such as adhesion and elasticity. Molecules are bacterial adhesins, toxins and cells can be either from prokaryotes or eukaryotes. Their overall approach is multidisciplinary with biochemical assays, cell imaging and biophysics. As well as AFM, the group uses fluorescence imaging including super resolution methods (PALM/STORM, STED, SIM) and electron imaging (TEM, and (cryo)SEM/SEM-SBF).

There are several different AFMs at BICeL so it was interesting to learn about why Dr Lafont and his colleagues chose to add JPK systems. Dr Lafont: "We particularly appreciate the user-friendly interface and the design of the system. Together with options such as ULTRA, the BioMAT™ and CellHesion® modules, the [NanoWizard®](#) provides us with an excellent platform for our studies. More specifically, being able to couple/integrate the AFM with fluorescence microscopy fits our lab goal. The hardware design and accompanying software provides us with a powerful toolbox for the measurement of cell mechanics and to investigate adhesion of cells. The system software has proved to be very stable and its open design enables lots of possibilities to customize our measurements. The AFM has a very broad range of accessories which are all compatible with the NanoWizard® platform. These include PetriDishHeater™ and

CoverslipHolder to give us excellent environmental control. We are also very pleased with the overall responsiveness of JPK in terms of service and applications support.”

The group is quite prolific in terms of the papers it has published over the past 5-6 years. A selection of these featuring the use of the JPK NanoWizard® AFM is listed below¹⁻⁶.

For more details about JPK's AFM systems and their applications for the materials, life & nano sciences, please contact JPK on +49 30726243 500. Alternatively, please visit the web site: www.jpk.com or see more on Facebook: www.jpk.com/facebook and on YouTube: <http://www.youtube.com/jpkinstruments>.

References

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Attachments



STED-AFM system incorporating JPK NanoWizard® - the Lafont Group



The AFM-Super-Resolution Group led by Dr Frank Lafont (right)

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About JPK Instruments

JPK Instruments AG is a world-leading manufacturer of nanoanalytic instruments - particularly atomic force microscope (AFM) systems and optical tweezers - for a broad range of applications reaching from soft matter physics to nano-optics, from surface chemistry to cell and molecular biology. From its earliest days applying atomic force microscope (AFM) technology, JPK has recognized the opportunities provided by nanotechnology for transforming life sciences and soft matter research. This focus has driven JPK's success in uniting the worlds of nanotechnology tools and life science applications by offering cutting-edge technology and unique applications expertise. Headquartered in Berlin and with direct operations in Dresden, Cambridge (UK), Singapore, Tokyo, Shanghai (China), Paris (France) and Carpinteria (USA), JPK maintains



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