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JPK reports on the studies of the nanomechanical properties of biomaterials at Nagoya Institute of Technology in Japan

Berlin, 3rdth September 2013: JPK Instruments, a world-leading manufacturer of nanoanalytic instrumentation for research in life sciences and soft matter, reports on how the Laboratory for Mechanobiology and Bioengineering at Nagoya Institute of Technology in Japan use the NanoWizard®3 AFM to investigate biomaterials.

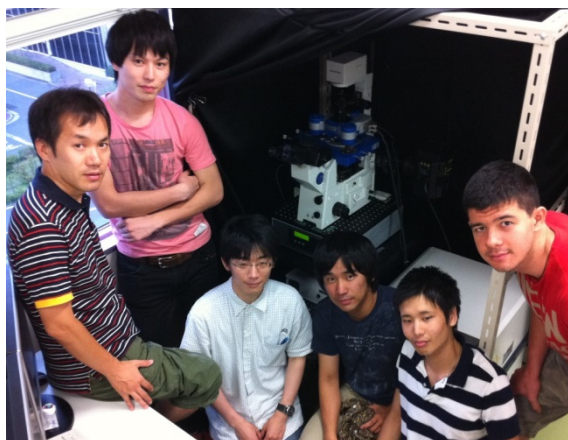
Professor Shinji Deguchi leads a research group at Nagoya Institute of Technology (NITech). The Laboratory for Mechanobiology & Bioengineering has a multi-disciplinary approach to the growing field of Mechano-Biology. This brings together the areas of cell biology, bioengineering and biophysics.

Describing his work, Professor Deguchi said "Every living cell keeps their tension constantly always and pulls surrounding cells each other. It is known as "Tensional Homeostasis." We believe that tension homeostasis is one of the important factors used to control cell function such as proliferation, differentiation and apoptosis. We study important protein complexes which play a part of the tension homeostasis process."

Continuing, he said "I work to understand the mechanisms of how cells sense and respond to mechanical forces using atomic force microscopy, AFM. My group chooses AFM because it allows us to measure the breaking force between molecules directly and with a high level of precision. We are also able to measure the elasticity and height of cells with high spatial resolution. The NanoWizard® AFM from JPK enables us to observe complex morphology of cells and tissues. Before working with JPK, we have used a custom-made system for force microscopy, which has been published in *Biorheology*, and for the observation of cell behaviour, we have used confocal laser scanning microscopes. I chose the NanoWizard® AFM from JPK because it is well designed for the easy mounting of samples and cantilevers onto the stage. I like the software too as it has been written to be used in an intuitive manner.

For more details about JPK's NanoWizard® and applications for the bio & nano sciences, please contact JPK on +49 30533112070, visit the web site: www.jpk.com or see more on Facebook and on YouTube <http://www.youtube.com/jpkinstruments>.

Attachment:



Professor Shinji Deguchi's research group from Nagoya Institute of Technology with the JPK NanoWizard AFM system.

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 (Japan) and Paris (France), JPK maintains a global network of distributors and support centers and provides on the spot applications and service support to an ever-growing community of researchers.

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