

JPK Instruments contact:

Claudia Boettcher: +49 30533112070

Media contact:

Jezz Leckenby: +44 (0)1799 521881

JPK reports on the research activities of Dr Jochen Guck and his teams at Dresden & Cambridge Universities

Berlin, 15th May: JPK Instruments, a world-leading manufacturer of nanoanalytic instrumentation for research in life sciences and soft matter, reports on the multi-faceted research projects of Dr Jochen Guck who runs simultaneous research at the Universities of Dresden and Cambridge.

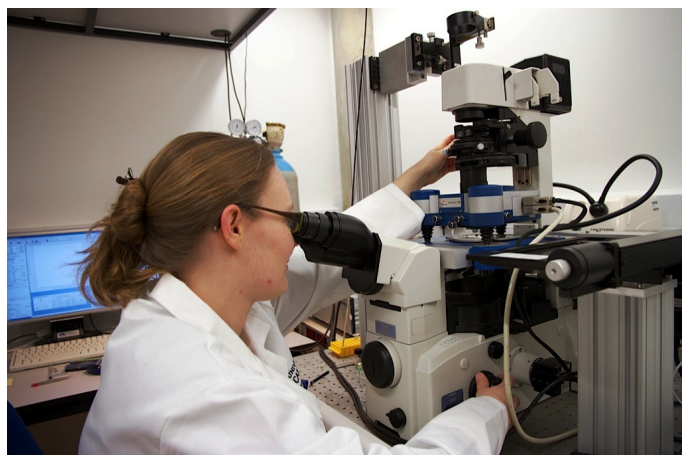
The biophysicist Dr. Jochen Guck has recently started his Humboldt Professorship of Cellular Machines at the Biotechnology Center of the TU Dresden (BIOTEC) while continuing to lead a team at the Cavendish Laboratory at Cambridge University (UK). His work at BIOTEC focuses on the development of new biophysical approaches for stem cell research, blood cell diagnostics and neuroregeneration. One of his main tools for characterization of biomaterials are the NanoWizard® systems from JPK Instruments. Unlike many other users, he does not apply them for basic scanning measurements but uses them to study cellular behaviour and to quantify their interactive forces.

Talking about his research, Professor Guck said "Most of our work uses AFM for mapping the mechanical properties of tissues. It is starting to be recognized that cells respond to the mechanical properties of the environment they are in contact with. They can differentiate into different lineages when in contact with stiff or compliant surfaces. Or they migrate towards stiffer areas or softer areas - a phenomenon called durotaxis. We are one of the few groups that have started to consider this mechanosensitivity of cells in the CNS; in the context of neural development and pathological disorders. One important prerequisite for these studies is to know quantitatively, how stiff or how soft CNS tissues actually are so that we can mimic this environment in vitro, and whether there are heterogeneities that cells could respond to. If everything is the same, there is no queue for migration for example. This is where we have pioneered the use of AFMs for the mapping of mechanical properties of CNS tissues with high spatial resolution."

Continuing about his experiences in working with JPK, he said "NanoWizard is perfect for measuring mechanical properties of biological cells and tissues, while keeping the cells and tissues in their physiological environment at the right temperature and their preferred medium (BioCell™). And, we can correlate mechanical mapping with optical microscopy such as bright-field or fluorescence microscopy. This helps us to know what we are actually measuring: which cell type, which state (quiescent or activated) or which area in a tissue."

For more details about JPK's specialist products and applications for the bio and nano sciences, please contact JPK on +49 30533112070, visit the web site: www.jpk.com or see more on Facebook: www.jpk.com/facebook.

Attachment:



Dr Jochen Guck's PhD student in Cambridge, Kathrin Holtzmann, working with JPK's NanoWizard® AFM.

For a high resolution copy of the image, either right click to download or contact Jezz Leckenby at Talking Science.

About JPK Instruments

JPK Instruments AG is a world leading manufacturer of nanoanalytic instruments that enable unparalleled access at the nanotechnology level. JPK was recognized as Germany's fastest growing nanotechnology company in 2007 and 2008 (Deloitte). The product portfolio is based around atomic force microscopes and optical tweezers for a wide range of applications, from soft matter physics to nano-optics, from surface chemistry to cellular and molecular biology. Leading-edge instruments from JPK are used by the most renowned research institutes across the world. Headquartered in Berlin and with operations in Dresden (Germany), 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.

For further information, please contact JPK directly or their marketing partners, Talking Science, who will also provide high resolution images for your use:

JPK Instruments AG
Bouchéstrasse 12
Haus 2, Aufgang C
Berlin 12435
Germany
T +49 30533112070
F +49 30 5331 22555
www.jpk.com
cl.boettcher@jpk.com

Talking Science Limited
39 de Bohun Court
Saffron Walden
Essex CB10 2BA
United Kingdom
T +44 (0)1799 521881
M +44 (0)7843 012997
www.talking-science.com
jezz@talking-science.com