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The Chemnitz University of Technology selects JPK's NanoWizard AFM system for the characterization of polymeric and biological materials.

Berlin, 3rd August 2011:– JPK Instruments, a world-leading manufacturer of nanoanalytic instrumentation for research in life sciences and soft matter, is pleased to report on the research work from the Chemical Physics group of Professor Robert Magerle of the Chemnitz University of Technology.

The Chemical Physics Group is part of the Faculty of Natural Sciences. The main research topic is the study of the structure and properties of polymeric materials. Within this, Professor Magerle's goals are to learn about structure, structure-formation processes and properties of both polymeric and biological materials (bone and other collagen based materials) on the nanometer scale. One general lines of research is imaging structure formation processes in these materials in their native state, where the materials are soft or even fluid.

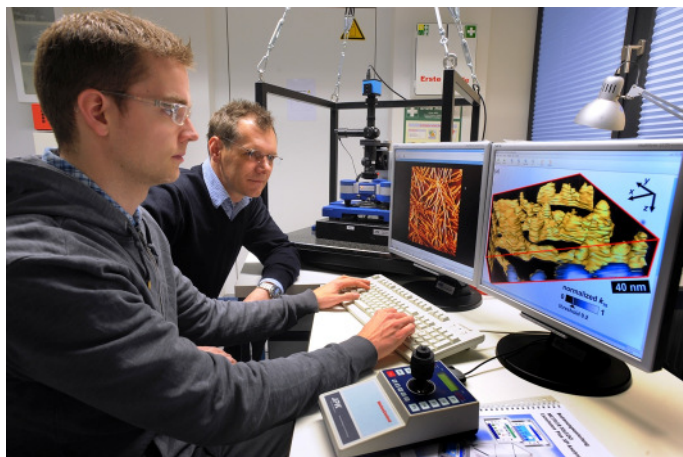
The discovery of new phenomena on the nanometerscale is vital for progress in research and technology. The use of atomic force microscopy, AFM, provides unique opportunities for the study of soft materials including polymers, polymer melts and solutions. It is also well suited for the study of biological materials. For this purpose, Professor Magerle's group developed a microtensile testing setup that allows imaging with AFM local deformation processes in thin polymer films. With this new setup the group discovered locally auxetic behaviour in a thin film of elastomeric polypropylene. This unusual property, which causes the material to expand when it is stretched, appears to be an intrinsic property of certain semicrystalline polymers.

Having used a variety of different types of AFM in his earlier work, Professor Magerle saw many advantages in moving to the JPK NanoWizard®. Speaking on this, Professor Magerle said "We have chosen the NanoWizard® AFM since it is a tip-scanning system and allows us to place our home-built microtensile testing setup precisely below the AFM tip. JPK has provided us with a custom-built base-plate with an extra cut-out in the center so we could mount our microtensile testing setup. Another aspect I like about the NanoWizard® is its solid mechanical design with a tripod. It is very stable with very little thermal drift. Furthermore, the NanoWizard® can be combined with an optical microscope which we intend to use in future projects."

Collaboration with users is very important to JPK. As Torsten Jähnke, JPK's Chief Technical Officer, says "Working closely with our users enables us to see what new developments might be incorporated in the design of future instruments. Right from day one when we started the company twelve years ago, we have made it the company's policy to closely work with our users and to listen to their feedback as to what they thought of both the hardware and software aspects of our instruments."

JPK develop, engineer and manufacture instrumentation in Germany to the world-recognized standards of German precision engineering, quality and functionality. For further details of the NanoWizard®AFM and other products in the JPK family of bio and nanoscale instrumentation, please visit the JPK web site, www.jpk.com, or visit our Facebook page, www.jpk.com/facebook.

Attachment:



Professor Robert Magerle (right) watches Eike-Christian Spitzner working with the JPK NanoWizard AFM

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.

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