

Press Release

For immediate release
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PicoQuant combines optical microscope with atomic force microscope

The synchronized acquisition of fluorescence lifetime and atomic force images makes new investigation schemes in the field of live cell imaging feasible.

Berlin (Germany), 31 August 2011 – PicoQuant GmbH, specialist in single photon counting applications, announces the successful combination of PicoQuants time-resolved confocal fluorescence microscope MicroTime 200 with Brukers BioScope Catalyst Atomic Force Microscope (AFM). The combination of these two systems enables simultaneous recordings of AFM and optical images of the same sample region and makes new investigation schemes in the field of live cell imaging feasible.

The combined setup of the MicroTime 200 and the Bioscope Catalyst is straightforward without the need of larger modifications of the two systems. The synchronized data acquisition enables scientists to analyze e.g. the impact of protein changes on cell shape and structure. It also allows high-resolution imaging by merging of sub nanometer topography with optically encoded functionality as well as investigations of inter- and intramolecular distances using force spectroscopy.

The combination and synchronization of the two instruments was realized in close collaboration between PicoQuant and Bruker. The Bioscope Catalyst AFM including its sample stage is mounted onto the inverse microscope body of the MicroTime 200, which is configured for objective scanning. In this way, precise overlay of the confocal volume and the AFM tip can be realized. Electronic communication between the sample-scanner of the AFM and the data acquisition electronics of the MicroTime 200 enables simultaneous recordings with the two instruments. An optical alignment protocol has been developed and demonstrated by the synchronized acquisition of AFM and FLIM images of fluorescence TetraSpeck beads (dry surface), fixed glioblastoma cells (in liquids) as well as living HaCaT-cells (in liquids).

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About PicoQuant

PicoQuant GmbH is a research and development company in the field of optoelectronics. The company was founded in 1996 and is based in the science and technology park Berlin-Adlershof, Germany. The company is a worldwide leader in the field of single photon counting applications. The product line includes pulsed diode lasers and LEDs, photon counting instrumentation, fluorescence lifetime spectrometers and time-resolved confocal microscopes. PicoQuant employs currently around 50 people. Since April 2008 Sales and Support in North America is handled by PicoQuant Photonics North America Inc.

Attachment

Picture of combined setup of the Bruker BioScope Catalyst and the PicoQuant MicroTime 200

Caption: Brukers BioScope Catalyst AFM with its sample stage is mounted onto the inverse microscope body of PicoQuants MicroTime 200, which is configured for objective scanning.

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