

Comet dust of the NASA Stardust-Mission will be analyzed with German high-tech microscopes

Ulm, Germany, Washington, DC, USA, July, 09, 2004 WITec, specialist in high-resolution optical and scanning probe microscope technologies supplies a system for analyzing particles collected from the comet Wild 2 by the NASA Stardust spacecraft. The microscope will be delivered to the Geophysical Laboratory of the Carnegie Institution of Washington in Washington DC, specialized in the analysis of extraterrestrial material. It will investigate the particles which are only a few microns in size on behalf of NASA. WITec's technology allows non-destructive investigations of these precious particles. With the integrated Atomic Force Microscope, high-resolution images of the particle surface structure can be obtained. Information about the chemical composition and the three dimensional distribution of the substances can be acquired with a confocal Raman microscope acting like a "chemical-sensitive eye". By comparing this data with the results of other analysis methods, it will be possible to clarify the geological and geo-chemical proportions of the rock.

The Stardust Spacecraft approached the comet Wild 2 in January to within 300 km and captured dust particles from the comets tail. At the moment, the spacecraft is returning to earth and will be expected to land in January 2006. Until then, the Carnegie Institution will use the microscope system to analyze interstellar particles already available. From the analysis of such particles, new insight into the formation of the solar system can be found. "The new instrument allows us to throw light on the constitution and structure of the interstellar particles, helping us to understand previously inaccessible correlations", says Dr. Jan Toporski, who has been responsible for choosing the instrument. "We have been highly impressed by the versatility and accuracy of the WITec microscopy system"

The instrument combines an Atomic Force Microscope, a near-field scanning optical microscope, and a confocal Raman Microscope. The Atomic Force Microscope allows the imaging of surface structures in the nanometer range. The near-field scanning optical microscope produces optical images with resolutions below the diffraction limit of the wavelength of light. In confocal Raman microscopy, Raman spectroscopy is coupled with confocal microscopy. The combination of these different microscopy techniques is possible due to the modular design of the WITec microscopy systems. The instruments are developed and produced in Ulm, Germany.

About WITec

WITec is a manufacturer of high performance optical and scanning probe microscopy systems. The instruments are distributed worldwide and are mainly used in materials sciences, life sciences and nanotechnology. WITec Headquarters is based in Ulm, Germany and Savoy, IL, USA. For more information, please refer to <http://www.witec.de>.

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