

## New testing machine for the characterisation of tribological processes at Chemnitz University of Technology

- ✓ *Chemnitz UT receives new universal testing machine Inspekt 150 with special equipment from Hegewald & Peschke GmbH*
- ✓ *Tensile and compression tests on sheet metal and rods, as well as deformation model tests*
- ✓ *High-temperature device allows for tempered tests*
- ✓ *Determination of tribological material properties with the help of a tribometer*

**Nossen / Chemnitz, March 1st, 2010** – The Hegewald & Peschke Meß- und Prüftechnik GmbH has received the order to develop a special testing machine from the Institute for Machine Tools and Production Processes (IWP) at Chemnitz University of Technology. With the help of this system, the Chemnitz researchers can do classic tensile testing as well as, for instance, experiments with frictional effects at high temperatures. The system contains a universal testing machine type Inspekt 50, a high temperature device, and a special device for research into tribological processes (friction). It will help to expand tribology research possibilities at the IWP, giving scientists the possibility to determine friction coefficients and wear of sheet metals made of high-strength steel materials, as well as of solid parts made of aluminium or steel in the future.

The universal testing machine Inspekt 150 was delivered in November 2009. The entire special testing machine, including the high-temperature kiln and tribometer, shall be commissioned in March 2010.

### Tribological experiments with the new testing machine

The academic field of tribology deals with the analysis of interacting surfaces in relative movement. The staff members of IWP research the interrelationship of the parameters friction, wear, and lubrication within a so-called tribological system, which consists of four elements: base body, antibody, intermediate material, and ambient medium. The Inspekt 150 with the additional tribometer is used for the analysis of those interrelations. Additionally, the tribological system can be tempered with the special high-temperature device, for instance, in order to reproduce forging processes. This also includes not only

## Press release

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03/01/2010

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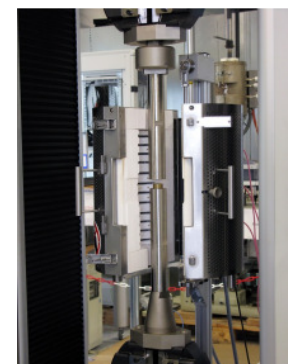
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Press photos:

Tribological tests with the universal testing machine Inspekt 150



These photos have been approved for press releases concerning the Hegewald & Peschke GmbH.

You can download this press release with the photos from:

[www.hegewald-peschke.de/aktuell/presse-publikationen/publikationen.html](http://www.hegewald-peschke.de/aktuell/presse-publikationen/publikationen.html)

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the execution of tensile tests at room temperature but also tempered tensile tests on sheet metals and rods.

Moreover, it will soon be possible to equip the machine with custom-made tools for the execution of deformation model tests, such as bending tests.

The scientists can define and vary different loading parameters, such as load, relative speed, lubrication, temperature, etc. This ensures the correct reproduction of industrial deformation parameters, which is usually not possible in aggregate and trial tests.

### *Research for the industry and teaching*

Considering the increasing demands of industry and businesses, such as the limitation of lubricants, and the desired increase of tool lifetimes, the new machine serves the specific purpose of testing new component coatings and lubricants. Furthermore, the results of the tests can also be used for simulations and form the basis for the optimisation of calculation models.

The Inspekt 150 has already been used for research projects by the staff members of IWP. In the future, the institute members also want to include the machine in their teaching programme and make it available for other departments.

### *About Hegewald & Peschke Meß- und Prueftechnik GmbH*

The measuring and testing technology specialists are based in Nossen, near Dresden. Since 1990, the company has been developing, manufacturing and selling high-quality machines, components and software solutions for testing raw materials, constructional elements and components. These include universal testing machines, hardness testing machines, test stands for furniture and constructional elements, as well as various length measurement devices for industry and research. The company, with 50 employees and various sales offices throughout Germany, also provides various measuring and testing services and retrofitting for universal testing machines. The design and software development divisions at Hegewald & Peschke maintain close cooperation with universities and research institutes (such as Fraunhofer) in order to ensure that the company's products remain at the cutting-edge of technology. Hegewald & Peschke is certified under ISO 9001 and has its own DKD calibration laboratory. **For further information about Hegewald & Peschke Meß- und Prueftechnik GmbH, please refer to the website: [www.hegewald-peschke.com](http://www.hegewald-peschke.com)**

About the Institute for Machine Tools and Production processes at Chemnitz University of Technology

The Department of Machine Tools is researching in the field of machine tool manufacture and deformation technology. Apart from basic themes of the fields of construction, simulation and property analysis for the improvement of productivity, quality and reliability, the IWP also focuses on the development and use of virtual reality methods in production engineering. Another focus is set on the fields of deformation technology and mechatronics. The field of deformation technology in research and teaching deals with the expansion of the limits of deformation technological processes, the development of flexible production processes and FEM simulations in the automotive industry and its subcontractors. The research objects of mechatronics include the applications of movement controls, identification and modelling of technical systems and the commissioning and design of the controls of mechatronic systems. In the core areas of machine tools and deformation technology, lectures, seminars and practical courses impart well-grounded basic knowledge, which is then the basis for a more specific application-oriented teaching with the latest results from research and industry. The range of research projects is market-oriented, and potentials for innovation are identified early to make them accessible for the industry. **For further information about the IWP, please refer to the website: [www.tu-chemnitz.de/mb/iwp/index.php](http://www.tu-chemnitz.de/mb/iwp/index.php)**

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