3D-Micromac AG

3D-Micromac AG is the industry leader in laser micromachining. We develop processes, machines and turnkey solutions at the highest technical and technological level. Our aim is to provide superb customer satisfaction even for the most complex projects.

3D-Micromac delivers powerful, user-friendly and leading edge processes with superior production efficiency. 3D-Micromac systems have been successfully implemented in various high-tech industries worldwide. This includes semiconductor, photovoltaic, glass and display industry, microdiagnostics, as well as medical device technology.

In the area of sample preparation, 3D-Micromac has developed the microPREP™ PRO system that provides efficient laser-based preparation to a broad range of microstructure diagnostics techniques.

microPREP™ PRO

With microPREP™ PRO material samples can be prepared effectively and economically. microPREP™ PRO allows the creation of complex and 3D-shaped samples. Thus, it enables more comprehensive analysis of certain structures like in advanced packages, such as through silicon vias (TSVs), or even complete systems-in-package (SiP).

Furthermore, microPREP™ PRO is ideal to provide larger-sized samples with micron-level precision. The integrated overview camera assists in navigating on larger samples - the high-definition process camera allows for exact positioning.

The application of a pico-second laser ensures virtually no structural damage and no elemental contamination of the material. In addition, microPREP™ PRO's novel approach features substantially higher ablation rates than purely ion-beam-based processes.

Advanced features of the microPREP™ PRO include:

- Recipe-driven software for fast and easy sample preparation

- Loading any kind of geometry into the system

- Motorized stages to find the area of interest as fast as possible

- CO_2 Snow Jet for cleaning samples during or after the process to have samples ready for the next step

The microPREP™ PRO system was developed to provide efficient laser sample preparation fitted to the needs of microstructure diagnostics and failure diagnostics. microPREP™ PRO enables laser-based sample preparation of metals, semiconductors, ceramics, polymer, and compound materials. The system can be used for a variety of sample preparation applications such as:

- Scanning Electron Microscopy (SEM),

- Transmission Electron Microscopy (TEM),

- X-Ray Microscopy (XRM),

- Atom-Probe-Tomography (APT), and

- Micromechanics.

microPREP™ PRO complements existing approaches to sample preparation such as ion-beam processing (FIB, BIB, Ion-mill etc) and creates new vistas for micromachining sample preparation.

Our markets include R&D facilities as well as diagnostic laboratories in the field of semiconductor, photovoltaic, glass and display industry, and many more.

All of our products are manufactured in Germany with distribution and service channels worldwide. For our customers we also offer feasibility tests and contract manufacturing.

How to find us

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