

# microDimensions – beyond visual limits

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## History

The company microDimensions was founded in 2011 as a spin-off of the Technische Universität München. As a provider of software solutions for the processing, visualization, and analysis of microscopic image data the company aims to speed up work-flows for pharmaceutical and biotech companies as well as researchers in the field of digital pathology.

microDimensions' first product *Voloom*<sup>®</sup>, released in 2012, gained lots of attention in the market as it is the first solution for the reconstruction of consecutive histology sections stored as virtual slides. In December 2013, microDimensions closed a financing round with three investment partners (HTGF, Bayernkapital, and a private investor). The fresh capital is used to intensify research and development for future products.

Within the last years, the company has established a strong partner network in the field of digital slide scanning and microscopic software manufacturers, amongst them the European market leader for digital slide scanners, 3DHISTECH, Hungary, and the market leader for multi-dimensional microscopic image analysis, Bitplane AG, Switzerland.

## Technology

microDimensions' core technology can be used to correlate multiple images in space. The method, called image registration, has been tailored to work with large image data, which makes a spatial alignment on a cellular level feasible for the first time. With this technology users can instantaneously compare the same region of interest in different biomarkers, measure volumes in image stacks, or quantitatively assess anatomical structures in 3D on a cellular level.

## Applications

With the technology of microDimensions image analysis tasks for clinical studies, companion diagnostics, or pharma/pathology research can be sped up significantly.

In the field of drug discovery for osteoarthritis, pre-clinical studies are carried out to quantify the volume of the patella cartilage in rats. "The stereology solution from microDimensions speeds up our workflow by more than 30 percent in comparison to our previous software solution." says Dr. Sven Lindemann, Head of Exploratory Osteoarthritis, Merck Serono, Germany.

Scoring by image analysis for clinical studies in the field of immune oncology is receiving the attention of most research-oriented pharmaceutical companies. Here, a re-occurring task is the delineation of tumor and healthy tissue in multiple immunohistochemistry sections. "With the technology of image registration it is possible to carry out a delineation of tumor and healthy tissue only once (e.g. in an H&E section) and let the algorithm propagate the result to consecutive IHC sections. This would save 20-30 minutes working time of the pathologist per case for the calculation of the tumor score", says Dr. Carol Geppert, resident physician, Institute of Pathology, Universitätsklinikum Erlangen, Germany.

## Contact

"Our goal is to speed up our clients' processes to reduce costs and mitigate the research and development risk", says Dr. Martin Groher, CEO of microDimensions. "With our flexible license plans for products as well as our development services for custom-tailored software solutions we efficiently fulfill the needs of our clients and guarantee maximum benefit."

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