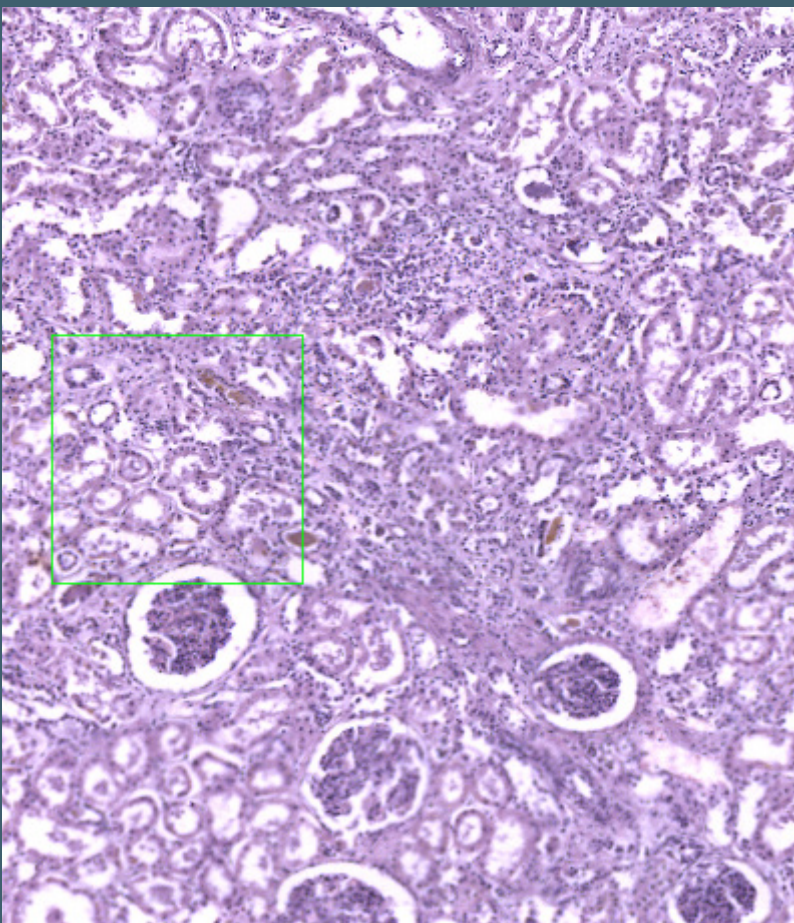
Fraunhofer
IIS

FRAUNHOFER INSTITUTE FOR
INTEGRATED CIRCUITS IIS

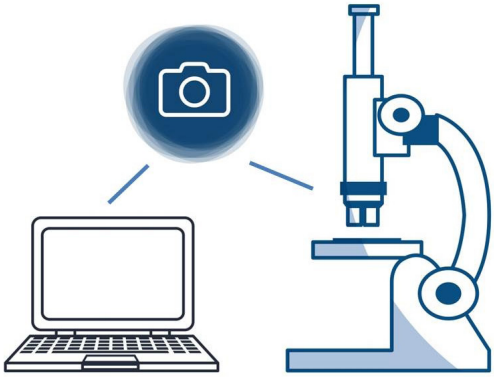
MANUAL PANORAMIC MICROSCOPY WITH iStix®



CLINICAL DIAGNOSTICS AND MATERIAL SCIENCES IMPROVED BY DIGITAL MICROSCOPY

BACKGROUND

Due to a high grade of specialization in pathology or concerning difficult cases several physicians often exchange views, e. g. within tumor boards. Contents of this communication can be microscopic images of tissue sections as well as results of other diagnostic tests and clinical data of the patient. In addition to that, other applications such as the analysis of the micro structure of materials require large high-definition image data sets.
So far, comparably expensive slide scanners for so-called whole slide imaging (WSI) are necessary for the digitalization of specimen.
However, it is not always necessary to scan the whole slide. Often it is sufficient to observe, document and annotate conspicuous areas. This possibility is provided by the software iStix®.



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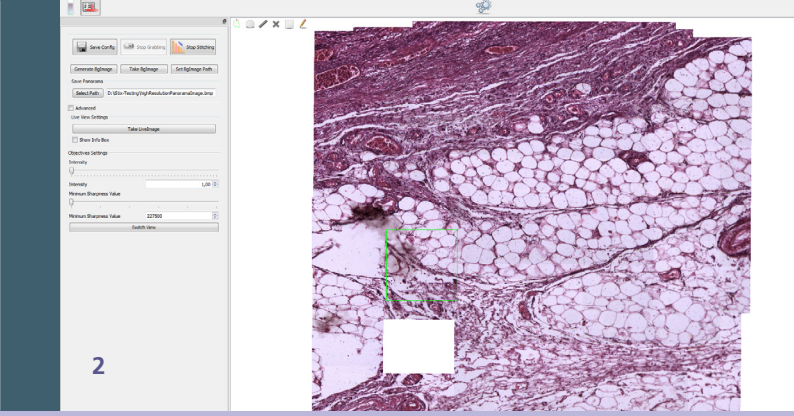
OUR SOLUTION: iStix®

Fraunhofer IIS has developed a low-cost alternative to digital scanners. This is enabled by the combination of microscope, camera and image processing software.
iStix® technology merges ("stitches") together individual microscopy images in real-time and without a motorized stage resulting in a panoramic view or a WSI dataset.
During the stitching process the images are stitched together in x- and y-direction. A zoom as well as a memory function for the original images and the panoramic image allow convenient navigation and data analysis.

1 *Low-cost alternative to whole slide scanner: manual microscope connected with a camera and the software iStix®*

2 *Virtual slide including loop closure generated with manual microscope and the software iStix® by Fraunhofer IIS*

3 *The software iStix® offers the possibility to annotate virtual slides*



BENEFITS

Fields of application for the software iStix® include telepathology, remote diagnostics, material testing as well as the education in life or material sciences.

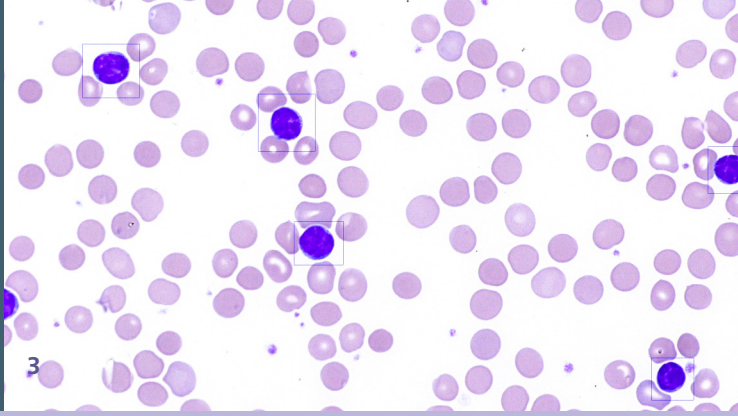
Benefits depending on field of application:

- Application as low-cost alternative to digital slide scanners
- Compatible with most current microscopes
- Documentation of results in high-definition overview images
- Accelerated diagnostic in medicine as well as in micro structure analysis
- Optional integration in own software applications or learning platforms for pathology
- Simplified evidence of microstructural abnormalities in material testing

OUR OFFER

We are looking for research, marketing and licensing partners to help develop this product further.
If you are interested, please contact us.

iStix® is not yet approved as medical product.



AT A GLANCE

The Department of Image Processing and Medical Engineering develops image based technical solutions for medical technology, laboratory diagnostics and biomedicine.
Industry and service providers of any size benefit from contract research. We offer know-how to small and medium-sized companies without own R&D department and may serve as an ‚extended workbench'.
We are pleased to offer our services – from feasibility studies for your specific problem and customized evaluation of large amounts of image data to research and development projects.
Besides adaption and licensing of available algorithms and methods into existing systems, we also implement application software and user interfaces upon request. We provide support with technical documentation, performance of risk management as well as planning and performance of pre-clinical studies and performance assessment studies in accordance with the applicable directives and the legal requirements as per Medical Devices Act.

www.iis.fraunhofer.de/istix

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