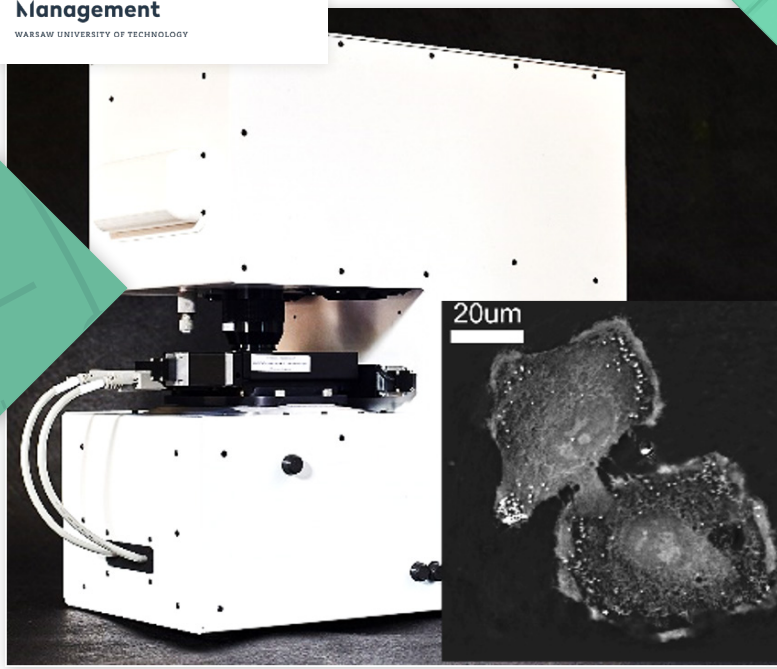
Warsaw University of Technology

EXCELLENCE INITIATIVE RESEARCH UNIVERSITY

Centre for Innovation and Technology Transfer Management
WARSAW UNIVERSITY OF TECHNOLOGY

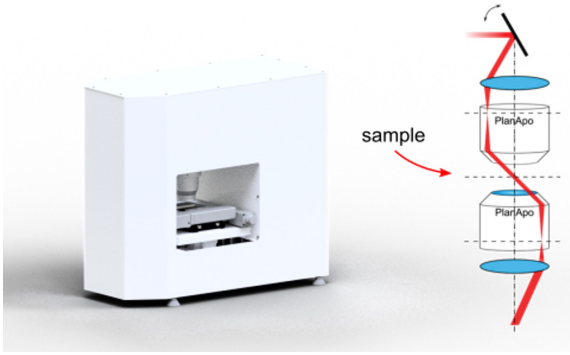
TOMOGRAPHIC PHASE MICROSCOPE



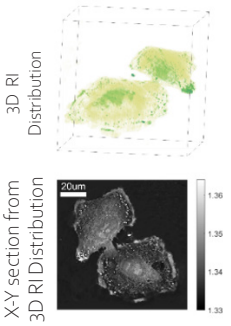
DESCRIPTION:

Innovative tool for measurement of full-volume dry mass density distribution for biomedical studies at cellular level

- Quantitative results: 3D refractive index (dry mass density) distribution
- Dedicated to biological cell cultures and histological tissue slices
- No specimen staining required
- Working mode - single capture/ stitched volume / timelapse



A549 LUNG CELL



Magnification	48x
Measurement time	1.5s
Field of view	150x150 µm
Resolution	240 nm
RI accuracy	$1 \cdot 10^{-3}$
Wavelength	632.8 nm
Sample postioning	motorized (x,y,z)

Red blood cells

Optical tomography setup
+
Dedicated numerical reconstruction algorithms
=
3D refreactive index distribution

OPPORTUNITIES:

- TRL7
- Technology/Commercialization
- Research cooperation
- Full 3D metrology assessment
- Development of systems with requested 3D QPI features
- Development additional application oriented reconstruction software
- Calibration biological phantom

Pharma

- Cancer cells response on drugs
- Nerve cells response on neuroactive substances

Medicine

- Analysis of unstainded histological tissue slices
- Identyfication of cancer cells

Biology

- Observation of cells life cycle
- Early identyfication of cell apoptosis

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https://biophase.pl