

# OPEN SYSTEM OF FLUORESCENT DECONVOLUTION OF MICROSCOPE

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Lot of new technics of processing signal from microscopes is available. This is caused by the progress of computer technology during last few years. But these microscopes are expensive and their functions are limited by the original software. Often, it is not possible to append next part of program code to this commercial software. It is the main reason, why we have reconstructed old microscope system and why we have written new control software. Our control software can be modified according to the requirements of measured task. This allowed us to implement new techniques for signal processing. Our system is useful for many interesting biological and signal processing tasks like tracking techniques, automatic sharpening, searching of moving objects in 3D and observing of life cycle of several moving cells at the same time etc.

System include body of Fluorescent deconvolution microscope iMIC I. made by Till PHOTONICS, module TMCM-610 made by TRINAMIC Motion Control used for control of stepping motors in microscope, analog monochrome camera constructed by Photon Systems Instruments, grabber card ATI Radeon 9550 VIVO for conversion of camera signal and computer. Control software was written in Matlab environment version 7.1 using Graphical user interface.

Reasons for using of Matlab:

- very fast writing and debugging of source code,
- many helpful toolboxes, which make work easy and make it much more effective,
- support for processing large date files,
- user-friendly environment,
- versatility

Now, whole system is functional and several biologic samples have been measured. In the future the system will be appended by tracking techniques and Graphical user interface will be expanded by additional user functions.