

Power Analysis

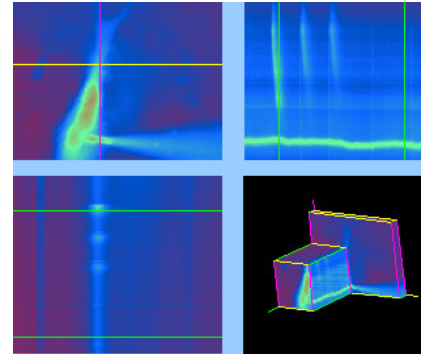
Power Analysis is a new, flexible image analysis software package with useful tool sets for both confocal and wide-field fluorescence microscopy

- Employs the pioneering OLYMPUS FLUOVIEW user interface
- Based on OLYMPUS FLUOVIEW functionality, with many additions
- Simple mouse-click interface sends files from Imaging Workbench to Power Analysis Station for more in-depth analysis
- Easy connectivity to all INDEC BioSystems products

Applications

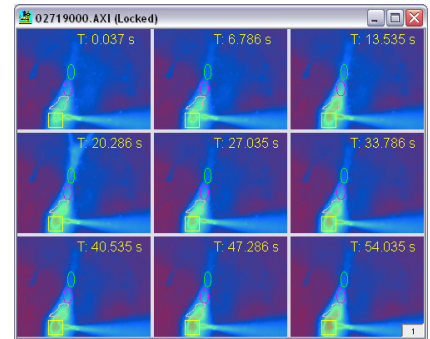
Visualization
3D Rendering
FRET (PFRET)
Image maths

Analysis
Presentation
Colocalization
Image filtering



Import data in a wide range of formats

- Image stack formats: TIFF (multi-image or many single images)
- CLSM file formats: Olympus, Leica, BioRad, Zeiss
- Imaging Workbench:
 - Single or multiple channel
 - Variable time base (soon)
 - Multiple Dye-Sets (soon)
- File types:
 - Image stacks (XT, XYT, XYZ, XYZT)
 - ROI definitions



Experiment Editor

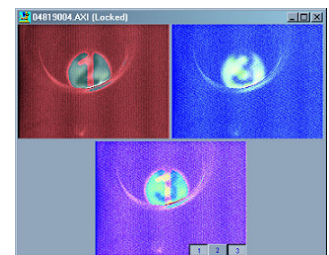
- Extract image series, append files, crop stacks
- Merge image series from different experiments

Export images to the most useful formats

- BMP, TIFF series, AVI movies (compressed or uncompressed), WMV movies
- IW5 AXI

Visualize images and image contents

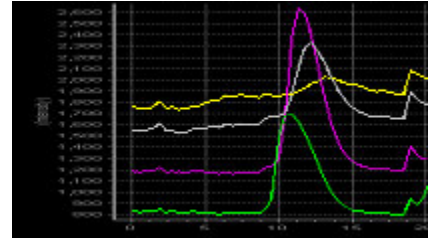
- Flexible and independent wavelength channel display
 - Each wavelength channel can be displayed in its own window and/or merged arbitrarily with other channels
 - Each channel uses an independent display LUT
 - IW 5 background, shading correction and Fo images appear in separate windows for quick application
- Merging – data from separate files and analyses can be merged, each preserving its own LUT
- 3D display tools for series experiments (e.g. time series, Z series)
 - Cross-sectional views of image stacks
 - Isometric views for 'at-a-glance' data display
- On-screen animation of series experiments
 - At variable speeds in Z, T or angle; Rock or Loop



- 3D renderings help reveal structure in series experiments
 - Stereo mode, 'First' mode, Brightest mode, Averaged mode
 - Other modes available through image expression evaluator
- Image annotations
 - Intelligent annotations report measurements from image (e.g. intensity, time, X, Y, Z) and are automatically updated
 - Intensity or color wedge with value annotations, spatial calibrations, text

Analysis features include

- Regions of Interest
 - Intensity with time, histogram, statistics
 - Very flexible ROI tools
 - 3D ROIs, each made up of a set of 2D ROIs
 - 3D animations
- Lines of Interest
 - Intensity along line, histogram, statistics
- Calculations
 - Ratios, ion concentrations, $\Delta F/F_0$
 - Background subtraction, image or constant
- Thresholding and masking
- Filtering with many presets (Sobel, Gaussian, DIC image filter, convolution, arbitrary, etc.)
- Image arithmetic
- Mathematical expression evaluator acts on image stacks
- Linear calibrations included in all images
- Histogram
- Volume calculation for 3D objects

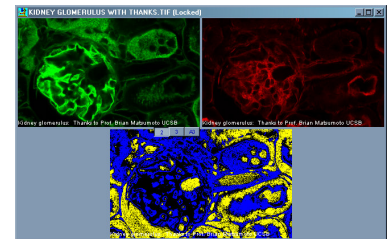


Database of many fluorescent indicators is provided

- Names, wavelengths, Kd values – allow automatic calculation of absolute concentrations, and correct labeling of images
- Add new entries to the database

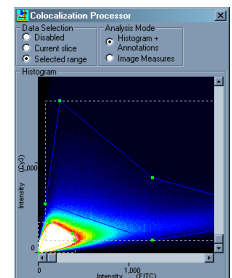
Colocalization – analysis of correlations (or colocalization) of pixel intensities in multi-channel images

- Create two-dimensional histogram of pixel intensities from the selected channels
- Select subregion in the histogram and highlight pixels in the image which correspond to that subregion
- Show statistics for the subregion
- Archive analyses as experiments
- Image correlation measures
 - Pearson's Coefficient, Overlap, Overlap Indices, and Colocalization Indices
 - Over selected ROIs, over entire image, over entire experiment



FRET – analysis of image sets, calculation and

- Subtract bleed-through via PFRET unmixing algorithm of Periasamy
- Estimate pixel-by-pixel FRET efficiencies and donor-acceptor separation



Summary – The new Power Analysis provides powerful analysis capabilities, as well as serving as an analysis “hub” used by all of our imaging products. Special package pricing is available when purchased with other INDEC BioSystems products.

Contact Information

INDEC BioSystems
2210 Martin Ave.
Santa Clara, CA 95050, USA
Tel.: +1-408-986-1600
Fax: +1-408-986-1605
sales@imagingworkbench.com
www.imagingworkbench.com
www.indecbiosystems.com

Outside North America, visit
www.imagingworkbench.com
to find a distributor in your
country

All trademarks and copyrights are the properties of their respective holders.

January, 2008