INDEC BioSystems

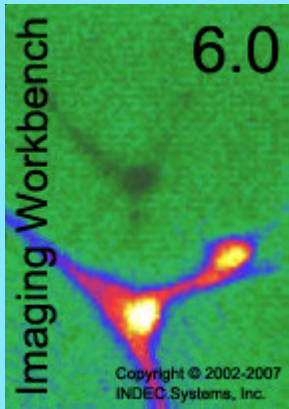Imaging Workbench 6.0
Copyright © 2002-2007
INDEC Systems, Inc.

Applications

Ion imaging (Ca^{++}, pH, ...) using fura-2, indo-1, BCECF, SNARF, etc.

FRET (in combination with Power Analysis Module)

Combined imaging and electrophysiology

Cell volume change measurements

Membrane potential measurements

TIRF

Tracking of particles or objects

Ratiometric and nonratiometric image acquisition and analysis

Multiple dye and several wavelength imaging

Video-rate imaging

Time lapse imaging

Image snap and archive

Power Analysis Module

Optional software with major new visualization and analysis functionality for IW images

Imaging Workbench 6

Time Series Multiwavelength Fluorescence Imaging of Live Cell Preparations

Imaging Workbench 6 is a proven program for multichannel dynamic fluorescence image acquisition and analysis, with precise control of wavelength switchers and other external equipment during acquisition, and flexible review and data extraction during analysis. IW 6 also seamlessly integrates concurrent electrophysiology and imaging in a single computer.
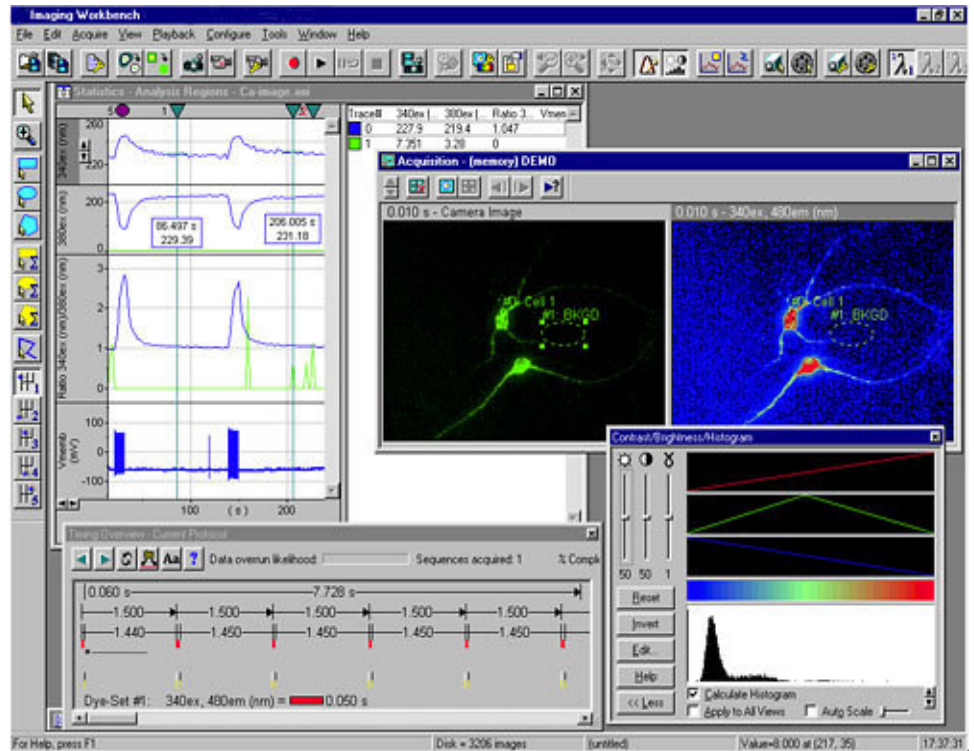
IW 6 – Key Features

Acquires time series fluorescence images of live cell preparations

Supports digital cameras, video cameras, VHS tape, fast monochromators, filter wheels, shutters, LED illuminators, z-steppers and more, from the major manufacturers

Performs ratiometric and nonratiometric experiments

Calculates intensities, ratios and ion concentrations over time, averaged over user-defined regions

DF/Fo, background subtraction and shading correction

Online analyses during experiments

Continuously updates graphs

Cooperates with Molecular Devices pCLAMP 6 - 10

Analyzes acquired image data online or offline

Exports data to movies, images and spreadsheet files

Windows XP, 2000 and 98 compatible

FluoVis

IW 6 is an integral part of the FluoVis family of turn-key imaging systems

IW 6 – Unique or Distinctive Features

Intuitive user interface, acclaimed for ease of use

Ideal for users interested in millisecond time-frame events

Support for the highest imaging rates for each camera, matching the manufacturer's specifications

Allows simultaneous acquisition of two Dye-Sets — each can be either a ratio dye (2 wavelengths) or a nonratio dye (up to 3 wavelengths)

See all your images online as you acquire and analyze — e.g. 340 nm, 380 nm and ratio — even pre- and post-background subtraction

The tightest integration available between electrophysiology and imaging, for pCLAMP 6 through 10. This includes synchronized starting and stopping of pCLAMP and IW protocols using wire of software triggering — support for pCLAMP's episodic acquisition (allowing parallel acquisition protocols between pCLAMP and IW) — reading of pCLAMP data into IW's graphs for convenient comparison — coexistence in a single computer
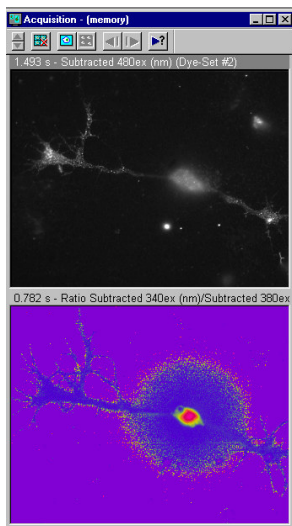
The Real-Time Control Panel allows change to many imaging parameters during acquisition, such as on-the-fly imaging rate, without need to stop and access menus
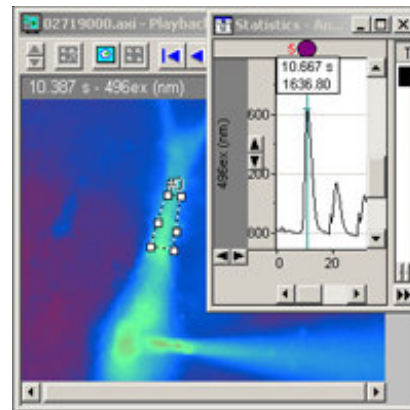
Analyzes a complete stack of images in one pass

Dynamic Background Subtraction — automatically average the fluorescence over a selected region without cells and subtract that value from the whole image. This is automatically done to each image of a stack (movie) to correct for shifts in background level caused by dyes in solution

A proven, stable product — experiment with confidence

Expert and attentive sales and technical support

Patch-clamped cell, electrode at lower edge. Calcium transient in outlined region is shown in graph as ΔF/Fo

IW 6 – New Functionality

Image acquisition

♦ Support for z steps in the experimental protocol; this allows one to create a repetitive series in z and t

♦ Manual control of a shutter not used in the protocol, for example to allow occasional bright-field imaging

♦ Support for PCO Pixelfly, low-cost but very effective digital CCD camera

♦ Support for Andor luca, and for new features of Andor iXon EMCCD cameras

♦ Support for Cairn Research OptoLED, LED illuminator system

Image analysis

♦ More flexible graph window allows hiding of traces (useful if very many regions are selected) and allows a more user-friendly spreadsheet export format

♦ Support for PFRET spectral bleedthrough correction in Power Analysis, IW's companion analysis software

♦ Support for line profile history export (line profiles with time)

Two-dye recording:
FM1-43 (top) and fura-2
ratio (bottom)
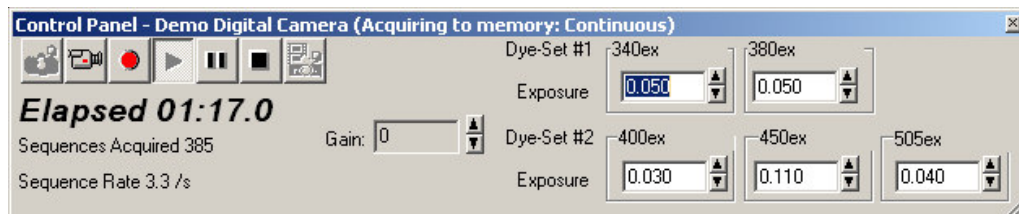
Easy-to-use Control Panel allows most changes "on the fly"

IW 6 – Continuing Development

Ongoing development assures you of more features in the future — with special relevance to biophysics, neurosciences and cell biology. For the latest developments, call us, visit our booth at the Biophysics and Neurosciences Meetings, or visit our Web site at *www.imagingworkbench.com*.

FluoVis – a family of turn-key imaging systems, customized solutions for your imaging needs

INDEC BioSystems can put together a complete imaging system to meet your requirements and budget. We arrange for demonstrations at your site, with combined evaluation of camera and IW 6.

Example configurations:

FluoVis micro System

A basic starter system for general purpose, versatile, low cost fluorescence imaging:

- PCO Pixelfly VGA digital camera (alternates available), filter wheel (Sutter Lambda 10-B, without shutter for further cost savings)

FluoVis Slow Ratio System

For slow to medium rate changes in ion concentration:

- Cooled digital camera, xenon light source (Sutter Lambda LS, EXFO), filter wheel (Sutter Lambda 10-3, Ludl MAC 5000, Cairn Rotor)

FluoVis Fast Ratio System

High sensitivity or high-speed systems:

- Cooled EMCCD digital camera (Andor, Photometrics, Hamamatsu), fast monochromator (TILL Polychrome, Sutter Lambda DG) or light source (Cairn Optosource)
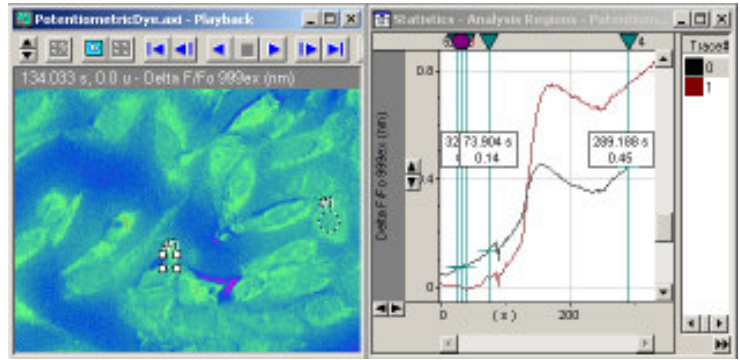
FluoVis High End FRET System

High speed Ca^{++} imaging and reliable FRET imaging with emission image splitter technology:

- Cooled EMCCD digital camera (Andor, Photometrics, Hamamatsu), xenon excitation source (TILL Polychrome, or Cairn Optosource/Sutter Lambda LS with 10-3), emission image splitter (Cairn Optosplit, Optical Insights DualView)

Recordings of DiBac-like potentiometric dye in cultured cells in response to KCl addition
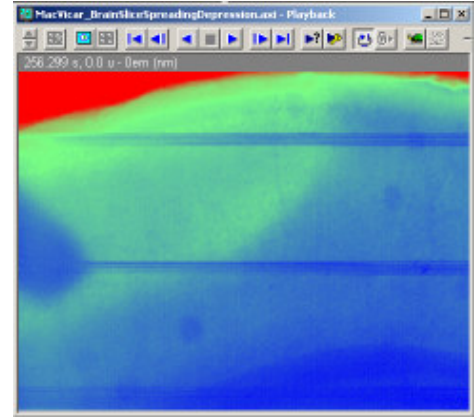
Induced spreading depression in a cortical brain slice, observed as a wave of increased light transmittance
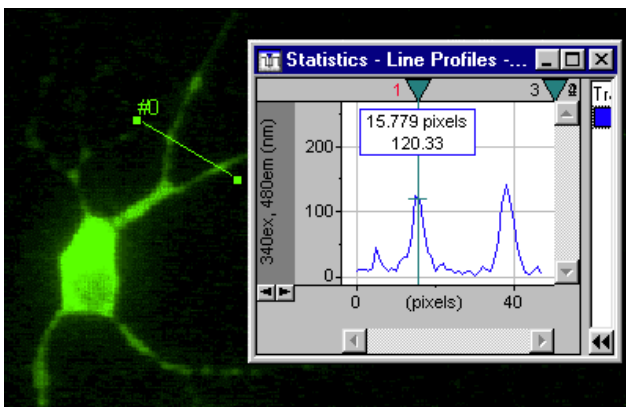

For ergonomic experiments!

IW 6 seamlessly integrates electrophysiology and imaging into a single computer. To add imaging to your electrophysiology setup, contact INDEC BioSystems.

Services of INDEC BioSystems

Presales applications consultation
Configuration of components or systems
Demonstration, either on-site or via Internet conference
On-site installation and training
Technical support

Line profile across image

How to Buy IW 6

- Preserve your investment by upgrading from Imaging Workbench 2, 4 or 5

- Order IW 6 alone for a new or existing imaging system

- Purchase IW 6 as part of a FluoVis turn-key imaging system

Discounts are available for upgrades, site licenses and multiple installations

Compatibility

IW 6 supports the following devices:

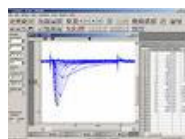|			
PCO Pixelfly QE	PCO SensiCam QE	Photometrics CoolSNAP HQ	Photometrics Cascade II
Hamamatsu ORCA-AG	Andor iXon, luca	ASI Z-Stepper	Ludl Z-Stepper
TILL Photonics Polychrome V	Sutter Instrument DG-4	Cairn Research Optoscan	Cairn Research OptoLED
Sutter Instrument Lambda 10-3	Uniblitz shutter	Cairn Research Optosplit	Optical Insights DualView
Molecular Devices Axopatch	Molecular Devices Digidata	Molecular Devices pCLAMP	Video camera, VHS tape

IW 6 also supports many other devices, including cameras from PCO, Andor, Photometrics, Princeton Instruments, and Hamamatsu; older models of TILL Photonics Polychrome and of Sutter Instrument Lambda series; PTI DeltaRAM; shutters; and more — call to inquire after your configuration

Computer Requirements
Windows Vista/XP/2000: Pentium PC with at least 500 MHz CPU, at least 512 MB RAM (Windows 98: at least 300 MHz CPU, at least 128 MB); 16-bit color graphics (best at 24- or 32-bit); 1024×768 display (best at 1280×1024); Internet Explorer 4 or later for online Help; PCI slot for most cameras or for Polychrome, Optoscan or DeltaRAM; LPT for older Lambda series, Uniblitz; USB for dongle and for newer Lambda series; COM for most Z-steppers.

Technical Support
INDEC BioSystems provides full technical support for your IW software and FluoVis system, including use of Microsoft Live Meeting, an Internet-based tool that allows our staff to access your imaging computer (and control it if needed) to demonstrate software, perform training, change systems configuration, debug, or allow the user to demonstrate problems.

Users of the Image Lightning 2000 frame grabber-processor –
Contact us for details of our replacement program

INDEC BioSystems
2210 Martin Ave.
Santa Clara, CA 95050
USA

Tel.: +1-408-986-1600

Fax: +1-408-986-1605

Email:
info@imagingworkbench.com

Web sites:
www.imagingworkbench.com
www.indecbiosystems.com

Outside North America, visit our Web site to locate a distributor near you