



PROVIDING RESEARCHERS THE BEST INSTRUMENTATION
AT AN ECONOMICAL PRICE

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InCyt High Speed I/P Micro-Photometry System

- Ratiometric(Fura-2) imaging as fast as 20 ratio/sec. Single wavelength (Fluo-3) as fast as 140 pts/sec. Ratiometric photometry as fast as 150 ratio/sec. Single wavelength photometry as fast as 1000 pts/sec.
- Ca++, pH, NO, Na.
- Other applications: FRET, GFP, vessel diameter, cell length, uncaging.
- Complete Turnkey systems.

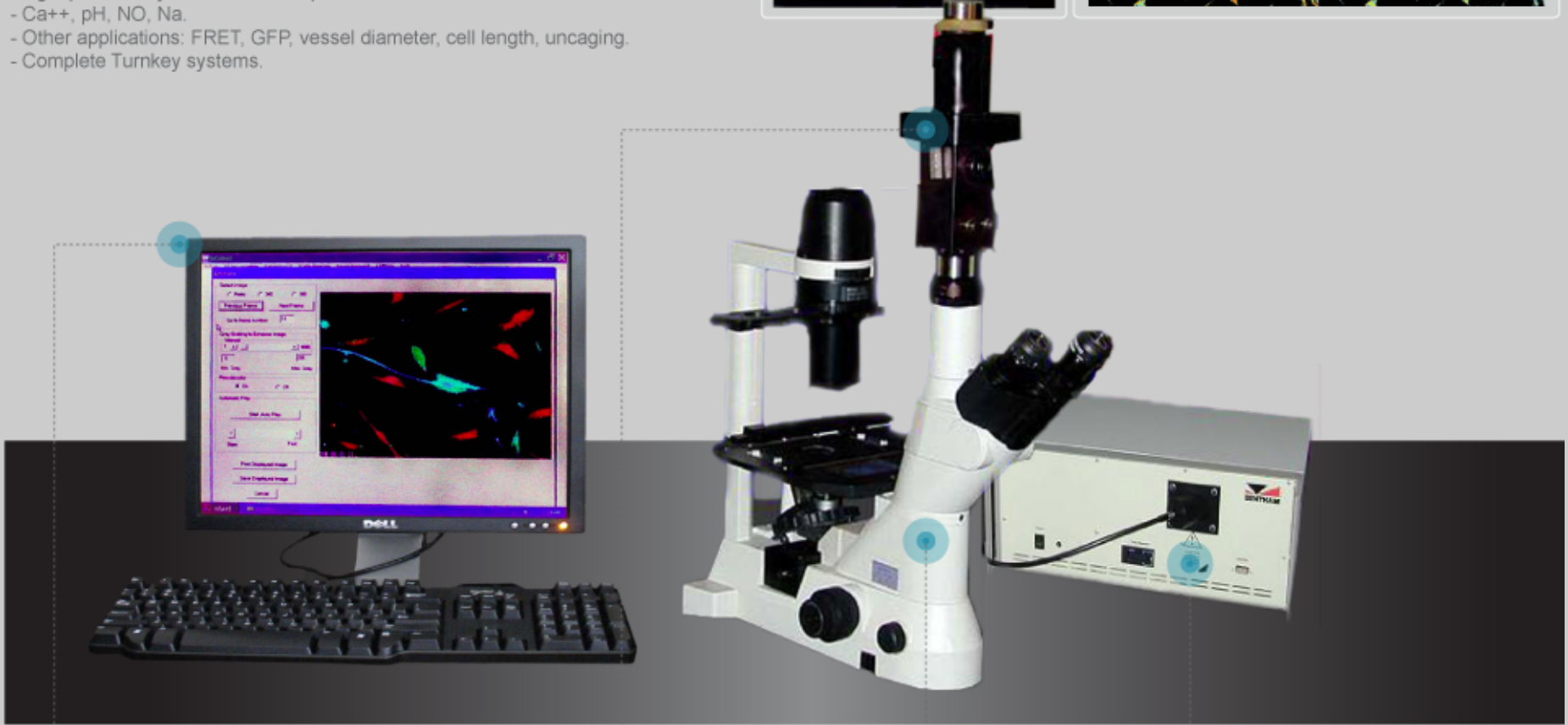
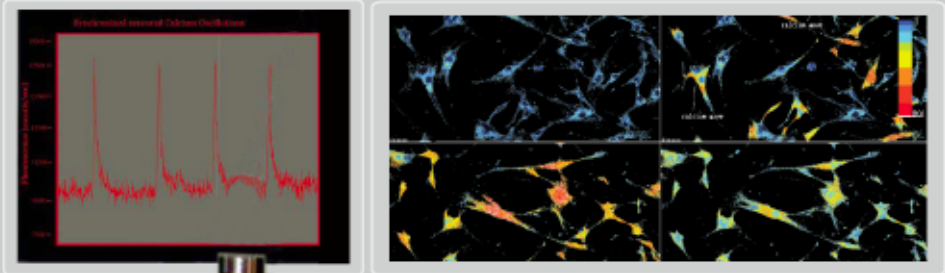


Image Acquisition & Analysis Workstation

State of art PC with Windows based proprietary InCyt software. Intuitive user interface guides the investigator through the experiment.

Photometer



Exclusive design includes the following features:

- Photon counting for extraordinary sensitivity.
- Capture cell responses as fast as 10 milli-seconds.
- Variable aperture to isolate any area of the field of view.
- Computer-controlled shutter for PMT overload protection(optional).

Camera



Integrating 12 bit CCD video camera for low light level and low noise imaging.

Microscope

Nikon TS100F Inverted microscope with proprietary Groony fluorescence module.

Illumination System

Computer-controlled high speed Bentham monochromator.

Complete Turnkey System

The **InCyt High Speed I/P™** Imaging and Photometry System includes everything needed for calcium and other single excitation and ratiometric fluorophore experiments. The system includes: an inverted epi-fluorescence/phase contrast microscope, microphotometer assembly, low-light level integrating CCD camera, computer controlled fast changing monochromator with Xenon arc lamp, image processing computer and data acquisition/analysis software.

Ease-of-use

The **InCyt High Speed I/P™** Imaging and Photometry System was designed in a biomedical research laboratory by scientists for scientists. Menu selection appears in the sequence in which experiments are performed. Esoteric options that add complexity and are rarely used have been eliminated from the menus. The software follows standard Windows graphical-user-interface-protocol. The hardware has been tested for reliability and ruggedness, as well as, simplicity of set up and operation. New users can learn to use the system and be doing their first experiment in a few hours.

Data Collection, Analysis & Presentation

Data can be measured continuously on as many as 50 pre-selected regions of interest. The results can displayed in real time or images can be saved for *post hoc* analysis. Saved images can be played back as an animated sequence—ideal for analysis of sub-cellular responses, intercellular communication and heterogeneity among the individual cells in a population. Ion concentration within cells can be converted to color using standard or custom pseudo-color tables. Image sequences can be presented as a montage with user-defined annotation for presentation and publication. Data generated by **InCyt Standard Im™** are stored in a standard TIFF format and data files are stored as ASCII text.

Specifications

Camera Module	
Camera	DVC 340M Monochrome Integrating 12-bit CCD with Binning Capabilities
Excitation wavelength changer	Till Polychrome V fast changing monochromator with Xenon arc lamp
Image Resolution	640 x 480 pixels
Photometer Module	
PMT	Hamamatsu H7360-01 photon counter
Linearity (precision)	+/-1% from 0 to 20,000,000 counts/second
Maximum Dark Count (noise)	150 counts/second
Equivalent Noise Input (noise)	3 x 10-17 watts per second (measured at 400nm)
Spectral Sensitivity	300-650nm
Discriminator & Microprocessor	Built into PMT
Overload Protection	Computer-controlled shutter (optional)
Excitation wavelength changer	Till Polychrome V fast changing monochromator with Xenon arc lamp
Image/Data Acquisition and Data Analysis Workstation	
CPU	Intel® 2nd generation Core™ i3 Dual Core Processor
RAM	4GB Non-ECC dual-channel 1000MHz DDR3 SDRAM
Hard Drives	250GB and 1TB 3.5" SATA 6Gb/s with 8MB DataBurst Cache

DVD ROM	16X DVD +/- R/W
Operating System	Windows 7
Monitor	20"

Image/Data Capture and Display	
Maximum Speed	20 ratiometric points per second 140 single-wavelength points per second
Object Definition	Specify up to 50 user-defined regions for separate analysis
Data Collection Options	(1) Graph ion concentration in each cell during experiment. (2) Save images for later analysis and animated playback
Image Forma	TIFF
Data Storage Format	Tab-delimited ASCII

PMT Data Capture and Display	
Maximum Speed	150 ratiometric points per second 1000 single-wavelength points per second
Time Lapse	Up to 1 measurement every 10 minutes
Field of View	Rectangular area, user-definable
Graphic Display	Real-time during experiment
Data Storage Format	Tab-delimited ASCII

Other	
Calibration	From standard solutions or formula
Ions	Works with hundreds of fluorescent dyes for measuring: Ca ²⁺ , pH, Na ⁺ , K ⁺ , Mg ⁺² , H ₂ O ₂ , cyclic ADP Ribose, etc.

Data Presentation

- Animated playback of images
- Montages of selected images with user-defined annotation
- Graphs of ion kinetics in user-defined regions
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3518 Cornell Place, Cincinnati, Ohio 45220
Corporate Headquarters:
(513) 351-4260 (voice)
(513) 453-4003 (fax)

Corporate Headquarters: [Dave Will](#)
Service Department: [Jess Luna](#)
Research & Development: [Eric Gruenstein](#)
Marketing: [Eric Vanderhoef](#)