deeco

Advanced Equipment Engineering Co.

شرکت مهندسی تجهیزات پیشرفته آدیکو

Fluorescence Molecular Tomography Imaging System
Nano-Imager

- Benchtop Preclinical Optical Imaging System
- Extremely sensitive versatile and extremely fast

Nano Imager Fluorescent Molecular Tomography

Nano-Imager Principle

The Nano-Imager module was developed to provide molecular imaging capability and precise 3D quantification of fluorescence signals in-vivo. The imaging system contains a high performance EMCCD camera to record the image collected by large aperture lens with automation for filters. Our systems enable multi-modality imaging by co-registering FMT images with CT/PET/SPECT/MRI data.

Key Features

- FMT technology (license CE 1282.0F41111.TANQT 35)
- US patent
- Planar fluorescence preview
- Laser illumination (up to 4 wavelenghts)
- NIRF Therapeutic window
- Surface reconstruction for 3D rendering
- PET/SPECT/CT/MRI co-registration

Key Benefits

- Very high sensitivity for fluorescent imaging
    - -A f/1.1 lens coupled to EMCCD camera
    - -TEM00 laser source
- Unmatched imaging versatility & rapid multimodal acquisitions
    - -Precise co-registration of optical signal with high resolution X-ray
- High throughput molecular imaging
    - -Rapid acquisition of fluorescence images
    - - Large 7cm FOV
- Fast, convenient workflow
    - -Automatic co-registration between imaging modalities
    - -Full automation of all image capture settings
- User-friendly acquisition and analysis software
    - -Standard and advanced user interfaces
    - -Quantitative image analysis tools
- World –class service, training and technical support
    - -On-site service for your convenience
    - -Remote access, technical and applications support
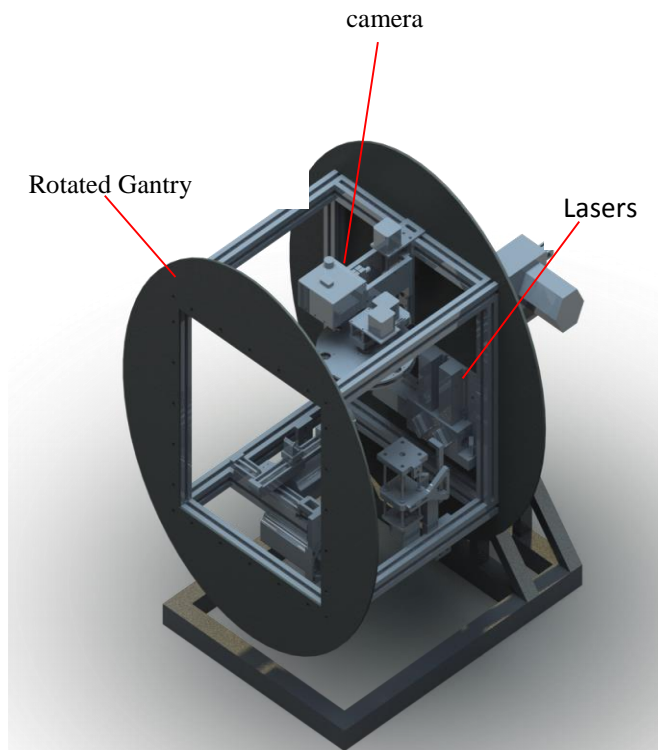   - -Complete installation, calibration and training

Nano Imager Fluorescent Molecular Tomography

Specifications

Camera and Lens	16MP EMCCD camera
Detector Type	8×8
Pixel Size (W x H; μm)	8×8
Read noise (e⁻)	<1 to 18 @ 13.5 MHz
FOV (cm)	Max 7×7
Lens	f/1.1-f/16 ,30 mm lens, xed
Quantum efficiency	>85% from 500-650 nm, >30% from 650-850 nm
CCD operating temperature	-20 ºC, air cooled
Dark current (e/pixel/s)	<0.0003
Minimum Detectable Radiance (photons/sec/cm²/sr)	45
Binning	$1 \times 1, 2 \times 2, 4 \times 4, 8 \times 8, 16 \times 16$
Frame Rate	15 fps at 1024 ×1024 pixels
Fluorescence Emission Filters	10
Space Requirements	80 cm wide, 70 cm deep, 90 cm high
Interface Connector	Standard USB 2.0 high speed interface
Resolution(mm)	<0.5
Weight (kg)	150

- Lasers
  - Up to 4 lasers-custom wavelength (typical range 600-800nm)
- Attenuation filter
  - Step variable neutral density filter
- Ten Emission Filters for Fluorescence Imaging
  - 490,510, 530, 550, 570, 590, 610,630, 670,710
  - Custom filters available upon request
- Holder
  - "CT and MRI ready" PPMA animal plate holder
- No External Coolers
- Advanced Software
  - Ease of use and familiarity
- Cost effective
  - Save money and get better performance

Nano Imager Fluorescent Molecular Tomography

camera

Rotated Gantry

Lasers

Applications

- Oncology
  - Metastasis monitoring – Angiogenesis-Gastric neoplasia
- Cardiovascular Diseases
  - Atheroscloresis –Ischemic Heart Disease-Myocardial inter
- Respiratory Diseases
  - Asthma-Sacroidosis-Tuberclosis
- Skeletal disorders
  - Arthritis-Osteosarcomas—Osteoporosis
- Inflammation
  - Vasculitis-Rheumatoid arthritis-Colitis
- Immune disorders
  - Type 1 diabetes-Multiple Sclerosis-Transplant rejection
- Infectious diseases
  - Schistosomiasis-Tuberclosis
- Renal function
- Renal clearance –GFR-RAS function-Acute
- Drug delivery
- Biodistribution
- Stem cell therapy
- Oxymetry

The Power of the Technology Inside

Your laboratory is a strategic asset, and the research that you perform for yourself and others requires the highest quality standards, performance and functionality in the imaging system that you purchase. We engineered and built Nano-Imager to be one of the most dependable, reliable and versatile imaging systems on the market today. With Nano-Imager, you have the greatest choice of imaging modalities in one easy-to-use system that delivers the highest quality images with the speed, sensitivity and resolution that you demand , each and every time. Take a look inside . You won't disappointed

Nano Imager Fluorescent Molecular Tomography

with you. Put Nano-Imager's power to work for you in research studies such as:

Robust Software Suite

nNano-Imager comes with a software, a powerful suite of tools for acquisition, visualization and precise quantification of imaging data. Features includes

- Easy to use standard and advanced user capture interfaces
- Simple export options allow data analysis with any 3rd party software
- Powerful protocol builder for complex multimodal imaging
- Multiplex feature for simultaneous visualization s and analysis of multiple images
- Powerful multispectral software for unmixing overlapping fluorescent signals and eliminating autofluorescence
- Image real –time changes in biochemical pathways in live cells and animals
- Use, development, and validation of probes and biomarkers
- Quantifying changes in soft tissue structure
- Track migration of cells in vitro and in vivo
- Easily co-register functional images with anatomical MRI and X-ray images

The Power of Imaging Your Way

Research needs are diverse and you do not want to be constrained by not having the right imaging modality at your fingertips when you need it. Our company had a long tradition of building preclinical imaging systems that remove these constrains and put the power where it belongs –
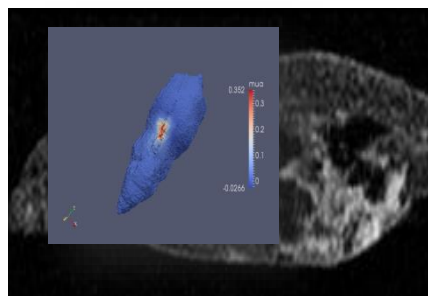
Multimoda l fluorescence and MRI image of a skin irritation model

Nano Imager Fluorescent Molecular Tomography

In vivo imaging of GFP istribution after subcutaneous injectios

possible to take an image of tumorization using GFP stable cell line

Worldwide Service, Training and Technical Support

At our company, we want your research programs to succeed, so we are here to support you with a comprehensive suite of service, training and technical support programs that are second to none.
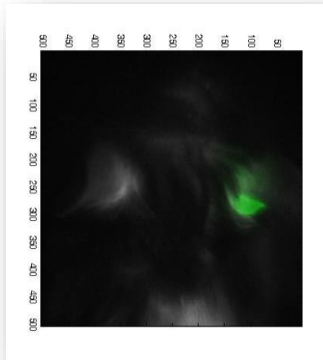
Comprehensive Support and Protection for your Investment

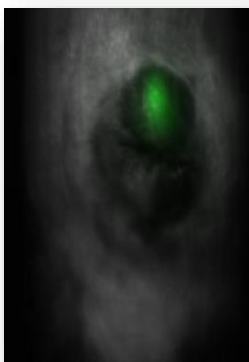We help you protect your investment by offering:

- A comprehensive warranty, backed by an expert service team, so you are covered from day one
- A range of technical support options including phone support
- Application support by our team of PhD scientists
- Problem solving assistance by our imaging experts and highly responsive world wide support team

Training Programs for Users at all Levels
We help you achieve more by offering training programs that are custom designed to met your specific imaging and application needs. Select from cost-effective options for users at all levels: from basic introductory skills to in-depth techniques for advanced users.

From one-on-one instruction to a full classroom-it's your choice.