OPTIMUS Dual Modality Imaging with Ultrasound and DOT

OPTIMUS®

Symbow Medical Technology Co.,Ltd.

Symbow Medical
新博医疗

Introduction

Symbow Medical Technology Co.,Ltd. (Symbow Medical) is a high-tech joint venture founded by a group of scholars from the USA. With more than 10 years' experience in the medical device industry, Symbow Medical is providing higher quality technologies and products to the world.

The company focuses on the technology development and industrialization of innovative medical devices in early diagnosis of tumors and minimally invasive precise-treatment. We have successfully developed and introduced to the market of innovative products including a novel breast imaging system (OPTIMUS), MRI and CT guided minimally invasive therapy platforms using optical and electromagnetic tracking techniques, the OPTIPET dual-modality molecular imaging system in the past few years. The company owns numerous international patents and has dozens of peer-reviewed research publications using the devices. Symbow Medical's products have been awarded more than a dozen national-level government Hi-Tech grant supports and many national fund supports. The company has obtained all necessary certificates such as SFDA, FDA, CE, and the sales licenses of many countries or regions.

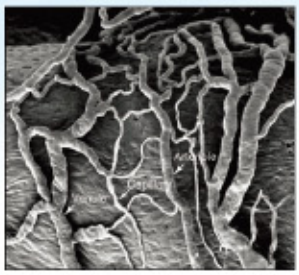
Symbow Medical's innovation comes from its own team as well as world-wide collaboration, including world renowned institutions such as Harvard Medical School, Johns Hopkins University Medical School, University of Connecticut, the USA National Center for Image-Guided Therapy, Chinese Academy of Sciences, Tsinghua University, PLA General Hospital, Peking Union Medical College Hospital, Tianjin Tumor Hospital, Sun Yat-sen University Cancer Hospital, etc. With the strength of its own talents and support of others, Symbow Medical aims at providing the latest and best medical solutions, comprehensive clinical support and advanced research opportunities for its customers.

OPTIMUS Dual Modality Imaging

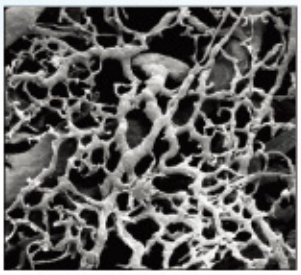
Combined Ultrasound and Optical Imaging System

- **OPTIMUS**-Provides a comprehensive analysis and evaluation of tumors in two aspects: morphological imaging by ultrasound, and functional imaging by diffused optical tomography.
- **Localization**-Ultrasound imaging is a well-developed technology, which offers good spatial resolution, and can detect breast lesions of a few millimeters in size. OPTIMUS takes advantage of this technology to locate tumors.
- **Identification**-Optical tomography, a new technique that employs diffused light in the near infrared spectrum, provides functional images of tumor angiogenesis and tumor hypoxia.
- **Early Detection**-OPTIMUS can detect and diagnose lesions as small as 0.5cm in diameter.

Angiogenesis and DOT



Normal Blood Vessel



Cancerous Blood Vessel

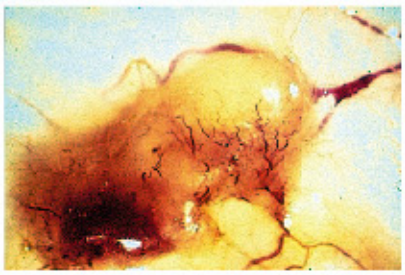
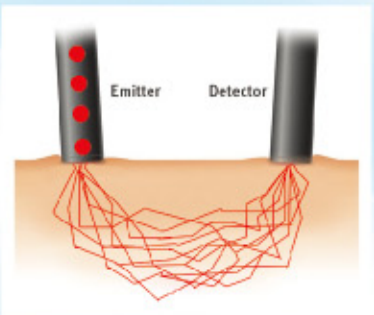
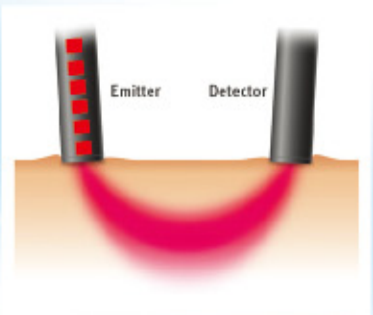
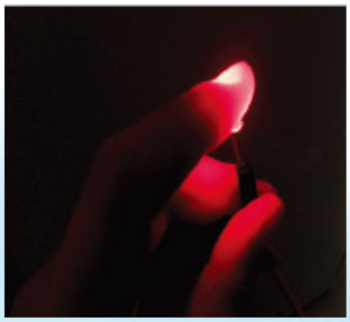


Photo courtesy of Dr. David Cheresh

- **Angiogenesis:** A common denominator in breast cancer
- **Abnormal blood supply:** An important factor in early diagnosis
- **Common characteristics of malignant tumor growth:** Research has shown solid breast tumors become clinically relevant once they develop a blood supply, and malignant tumors have higher MVD of their surrounding tissues. Subtle vascular changes are often associated with breast cancer in its earliest stages. DOT technology can detect abnormal blood supply changes in local tissues, and thus provide information for early diagnosis before the detection of morphological changes.
- **OPTIMUS imaging** provides functional information of breast tissues, and reveals the concentration of Hemoglobin and Oxygen saturation, reflecting angiogenic status of lesions.

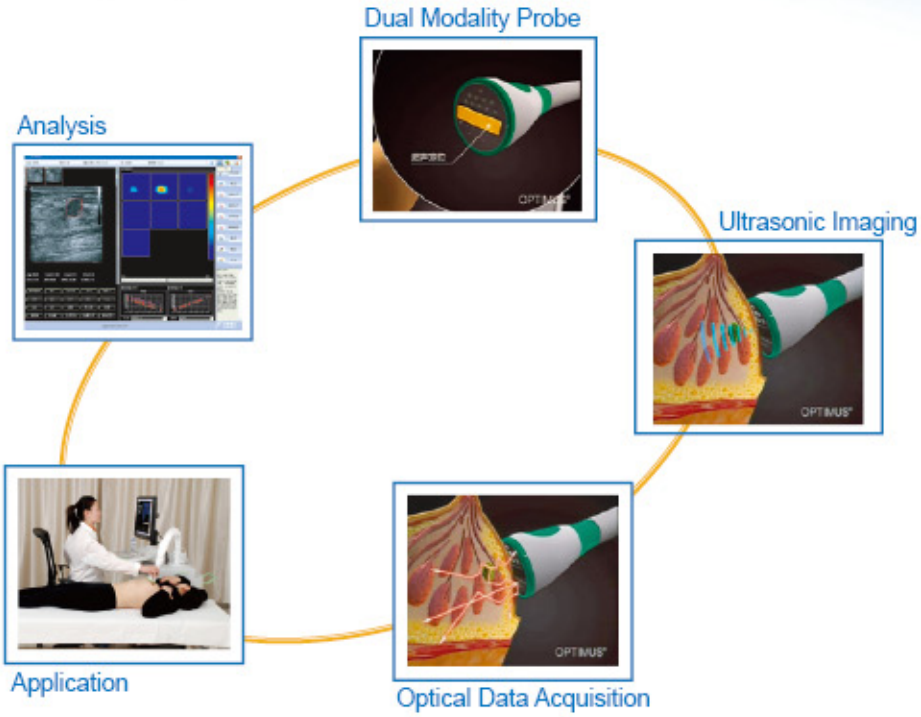




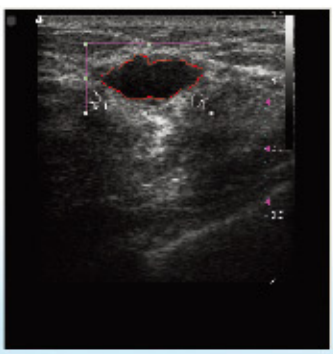


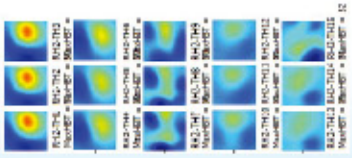
Unique Advantages

- **Non-invasive:** No radiation, no side effect, and no pain
- **Technology** protected by multiple US and Chinese patents



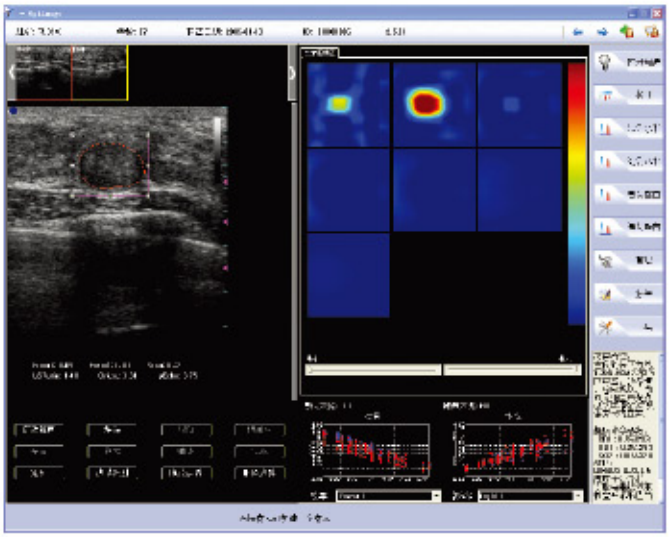
- **Ultrasound Imaging:** use the probe in the same way as a regular ultrasound imaging to locate lesion or areas of interest, and acquire an image
- **Laser Scanning:** use multi-wavelength laser scan to acquire optical information of the suspicious area
- **DOT Image Construct:** reconstruct 3D tomographical images to reflect the spatial distribution and concentration of HBT, HBO2, and HB of the interested tumor area

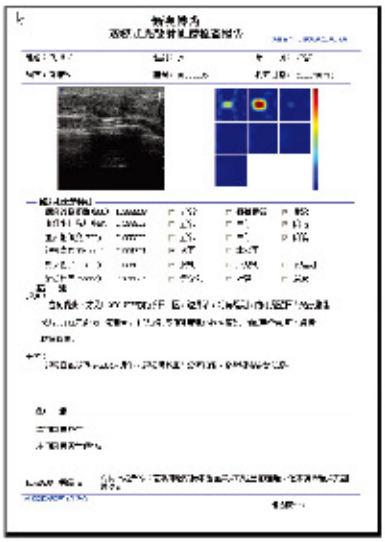




OPTIMAGE-Diagnostic Tools

- Dual modality operation and visualization, simple and easy to use
- Rich information about tumor blood and morphological characteristics, including hemoglobin (HBT), Oxygen concentration(SO2), tumor shape, lobe. and orientation, etc.
- CAD provides standard results in compliance with BI-RADs
- Easy and clear report generation, storage, and PACs compatible





- Quantitative Analysis of DOT and ultrasound images to generate a report with BI-Rads rating values

Broad Cooperation

Symbow Medical has established close R&D collaborations with world renowned institutions:

- Havard University
- Massachusetts Institute of Technology
- University of Connecticut
- Tsinghua University
- Peking Union Medical Collage Hospital
- Beijing Hospital and PLA General Hospital
- Tianjin Cancer Hospital
- Chinese Academy of Science

Company Milestones

- 2003, XinAoMDT Technology Co., Ltd. was founded in Langfang, Hebei Province.
- 2004, National Model Site of Flexible Manufacturing.
- 2005, Successfully Hosted "International Symposium on New Advances of MRI".
- 2006, Successfully Hosted "Symposium on Breast Optical Imaging Fundamentals and Recent Advances".
- 2006, Key Foundation Grant of the 11th Five-Year National Plan (MRI).
- 2006, Successfully Hosted "International Symposium on MRI-Guided Therapy".
- 2006, Successfully Hosted "International Symposium on MRI-Guided Therapy".
- 2007, National Tour of Free Breast Screening for Women.
- 2007, Major National Foreign Collaboration Fund (MRI-Guided Therapy Technology).
- 2007, National Certified Software Incorporation.
- 2008, National Certified Hi-tech Incorporation.
- 2008, National Science and Technology 863 Fund (OPTIPET).
- 2008, National TORCH Program (Open MRI).
- 2009, Gold Medal for the Most Innovative Technical Company in Medical Equipment in China.
- 2009, National Model Site of MRI-Guided Therapy System Manufacturing.
- 2010, the 10th National IT Innovation Award (MRI-Guided Therapy System).
- 2010, National Award for Technology Invention 2nd Prize (OPTIPET).
- 2011, Symbow Medical Technology Co., Ltd. was founded in Beijing.

Non-Invasive,Non-Ionizing Early Detection and Diagnosis of Breast Cancer

Symbow Medical
新博医疗

Symbow Medical Technology Co., Ltd.

Add：18 West Ring South Road, Building C, Room 408,
YiZhuang Economic & Technical Development Zone,
Beijing, P. R. China, 100176

Tel：+ 86 – 10 – 51570080
Fax：+ 86 – 10 – 51570098
Website：www.symbowmed.com
E-mail：sales@symbowmed.com
marketing@symbowmed.com

Toll-free Service Hotline: 400 - 7065 - 897