



Delivering visionary medical technology

# **Biophan Technologies, Inc. Investor Presentation**

**Michael Weiner, CEO**

**NanoEquity Europe 2006**

**Frankfurt, Germany**

**July 10, 2006**

# Cautionary Statement

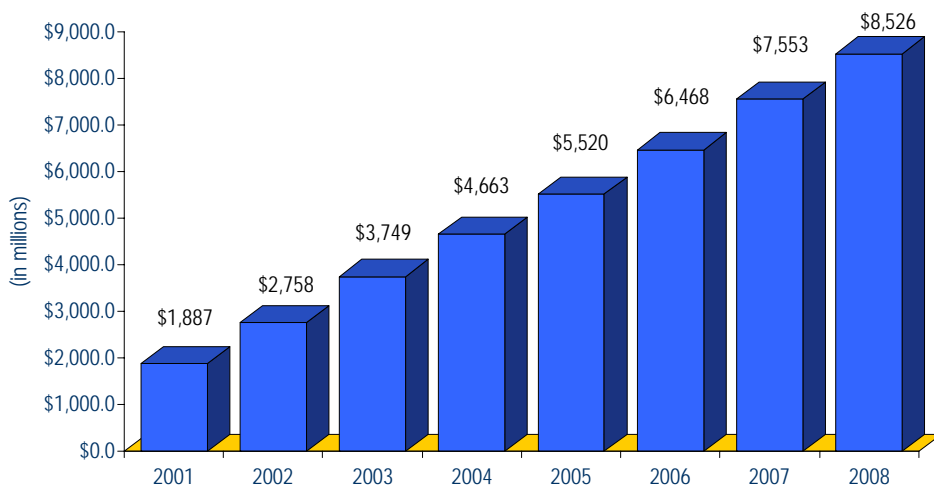
**Certain statements included in this presentation may constitute forward-looking statements within the meaning of applicable securities laws. These statements reflect what Biophan anticipates, expects or believes may happen in the future. Biophan's actual results could differ materially from the outcome or circumstance expressed or implied by such forward looking statements as a result of a variety of factors including, but not limited to: Biophan's ability to develop its technologies; the approval of Biophan's patent applications; the successful implementation of Biophan's research and development programs; the ability of Biophan to demonstrate the effectiveness of its technology; the acceptance by the market of Biophan's technology and products incorporating such technology; the ability of Biophan to effectively negotiate and enter into contracts with medical device manufacturers for the licensing of Biophan's technology; competition; the ability of Biophan to raise capital to fund its operating and research and development activities until it generates revenues sufficient to do so; and the timing of projects and trends in future operating performance, as well as other factors expressed from time to time in Biophan's periodic filings with the Securities and Exchange Commission (the "SEC"). As a result, this presentation should be read in conjunction with Biophan's periodic filings with the SEC which are incorporated herein by reference. The forward-looking statements contained herein are made only as of the date of this presentation, and Biophan undertakes no obligation to publicly update such forward-looking statements to reflect subsequent events or circumstances.**

# The Biophan Story

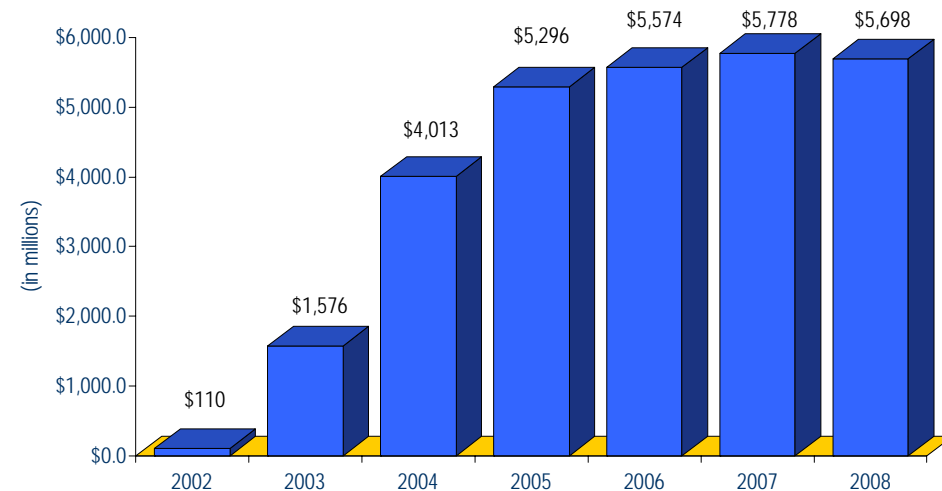
- **Robust technology portfolio applicable to broad range of cardiac, vascular and orthopedic devices**
  - **Solve problems that can move market share between large and fierce competitors**
- **Enable \$12B of medical device products shipped annually safe for use and imageable with MRI**
- **Licensing annuities from extensive 200-patent portfolio; licensing deal with Boston Scientific; others in process**

# Large and Growing Markets

## Worldwide High Power Medical Device Market



## Worldwide Drug Coated Stent Market



Source: Lehman Brothers Estimates: 12/30/05

# Medical Device MRI Imaging Safety

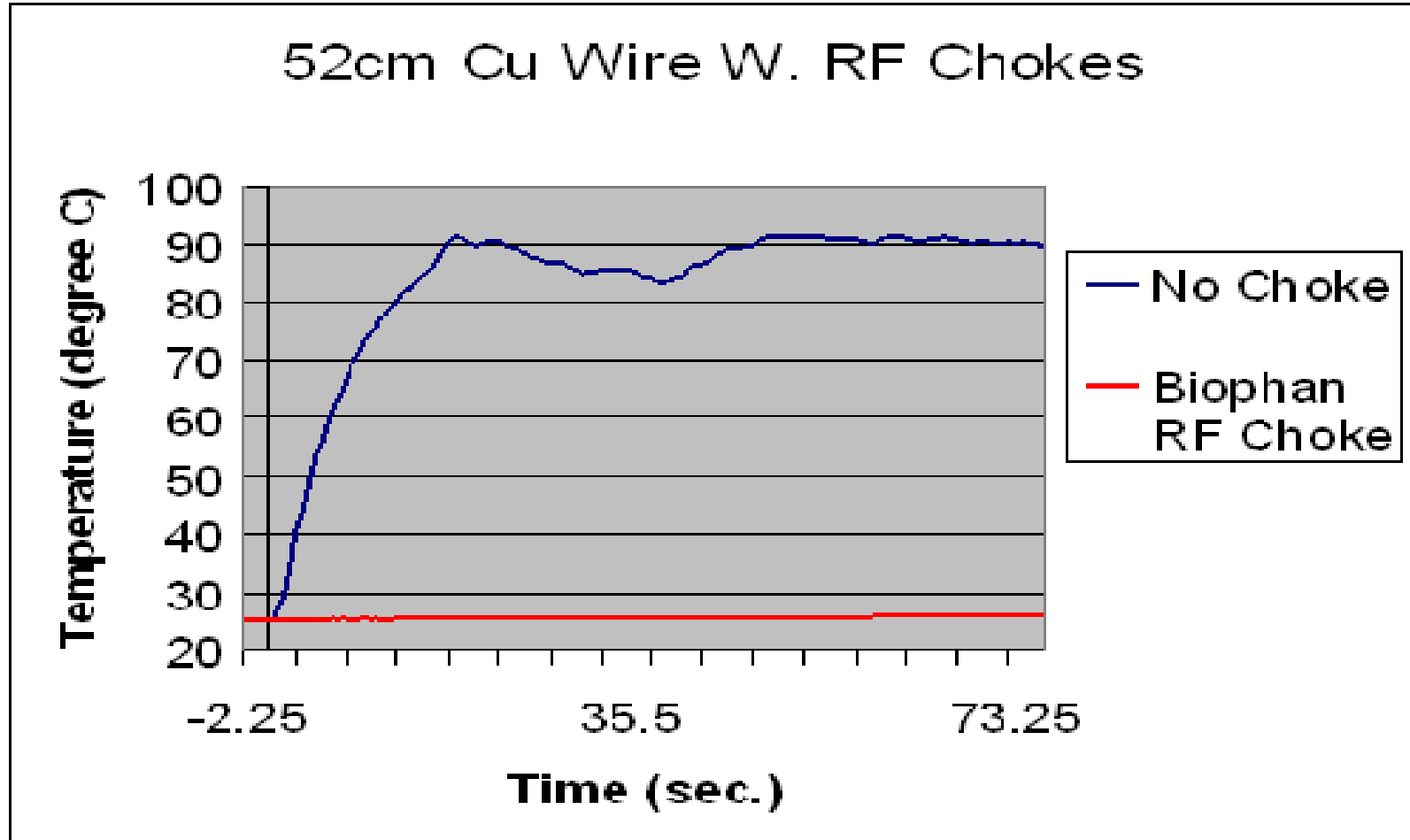
## **PROBLEMS:**

- **Implantable medical devices such as pacemakers and defibrillators are unsafe for use with MRI**
- **Patients may need MRI to stage for cancer operation or detect brain tumors**

## **SOLUTION:**

**Biophan technology solves dual problems of tissue heating and induced electrical voltages that make pacemakers and other devices dangerous for use with MRI**

# Biophan Solution for Pacemaker Lead Heating



# Biophan MRI Safety Solutions

- **Massive 240+ patent portfolio (56 issued in U.S.) covers multiple solutions for making devices safe**
- **Biophan MRI Safety Symposium with FDA and NIH in May, 2006 validate cause of problem and solutions**
- **Boston Scientific (NYSE: BSX) holds non-exclusive for pacemakers, defibrillators and neurostimulators; extends to Guidant product line since acquisition**
- **Negotiating with other pacemaker companies for potential “co-exclusive” license**

# PATENT PROTECTION

- **240 Patents Pending or Issued**
  - 177 U.S. Patents
    - 56 issued
    - 121 pending or allowed
  - 63 International Pending or Issued

(Figures as of 6/30/06.)

- **Owned by Biophan or licensed exclusively to Biophan for the medical market**



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# Technology Portfolio

# Imaging Stent Interiors

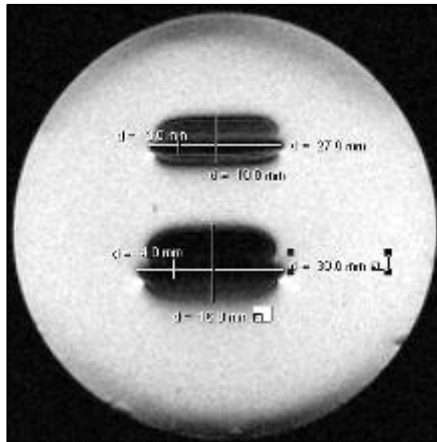
## **PROBLEMS:**

- **Detection of in-stent restenosis requires invasive procedure (angiogram)**
- **Stent interiors cannot be imaged for blockage or thrombus**

## **SOLUTION:**

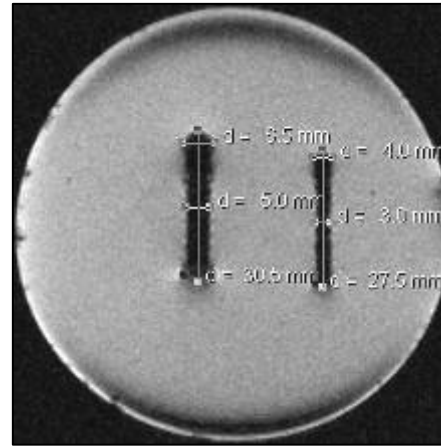
**Biophan technology enables MRI detection of in-stent restenosis.**

# Inside of Stents Cannot Be Imaged with MRI or X-Ray

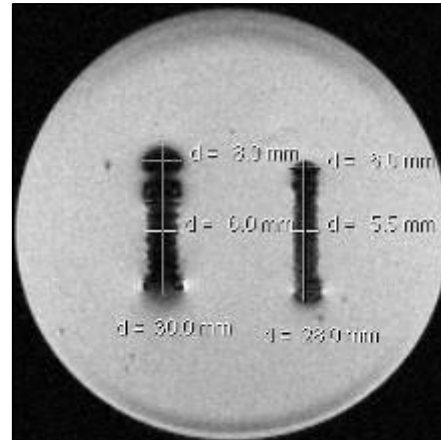
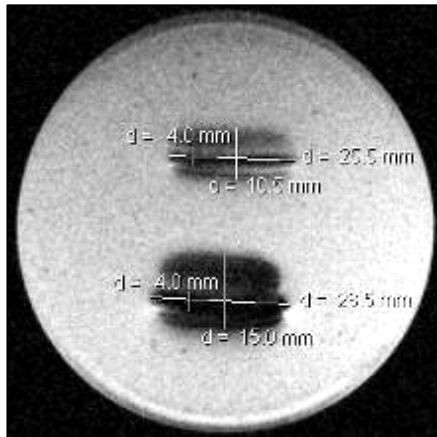


Expanded  
Stents

Original size



Crimped  
Stents



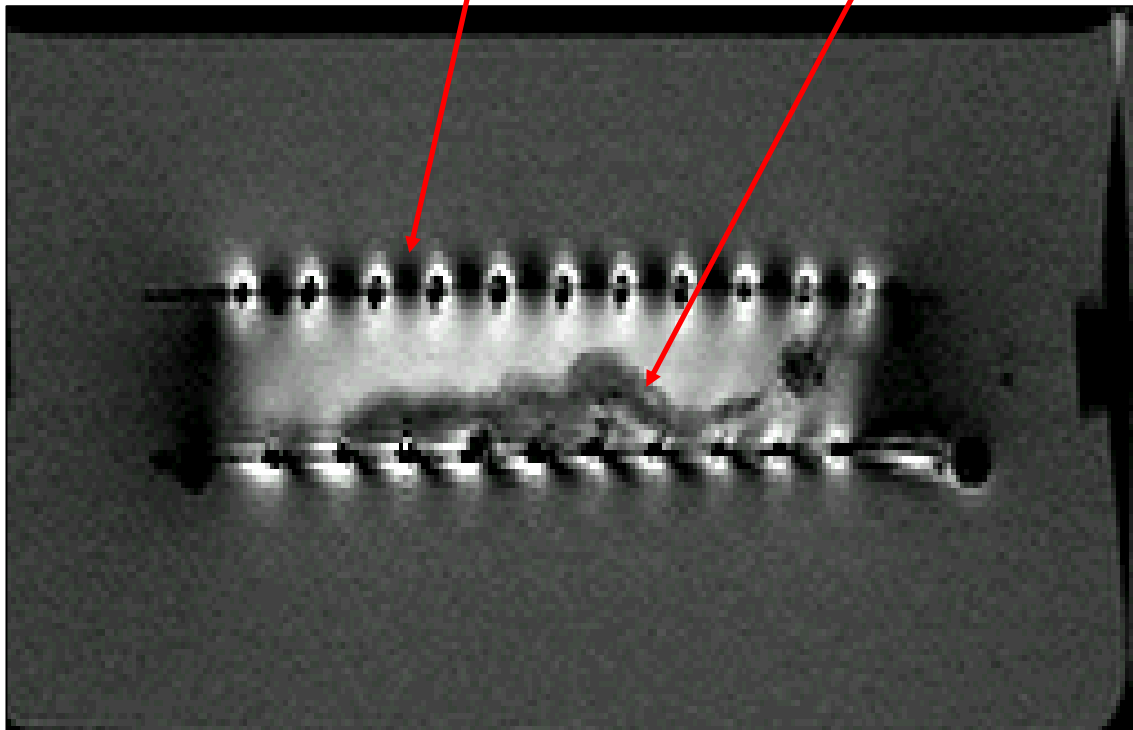
*With existing stent technology, MRI cannot produce useful images from within common stents.*

# Breakthrough: Imaging of In-Stent Blockage Using Biophan Resonator Technology

Resonant Stent

Blockage

1 Tesla Philips NT, head coil, TR=300ms,  
TE=6ms, FA=40°, transversal



***Biophan's technology enables imaging of the blood clot within the metal stent. It also improves polymer stent imaging.***

# MRI Visible Vena Cava Filter

## **PROBLEMS:**

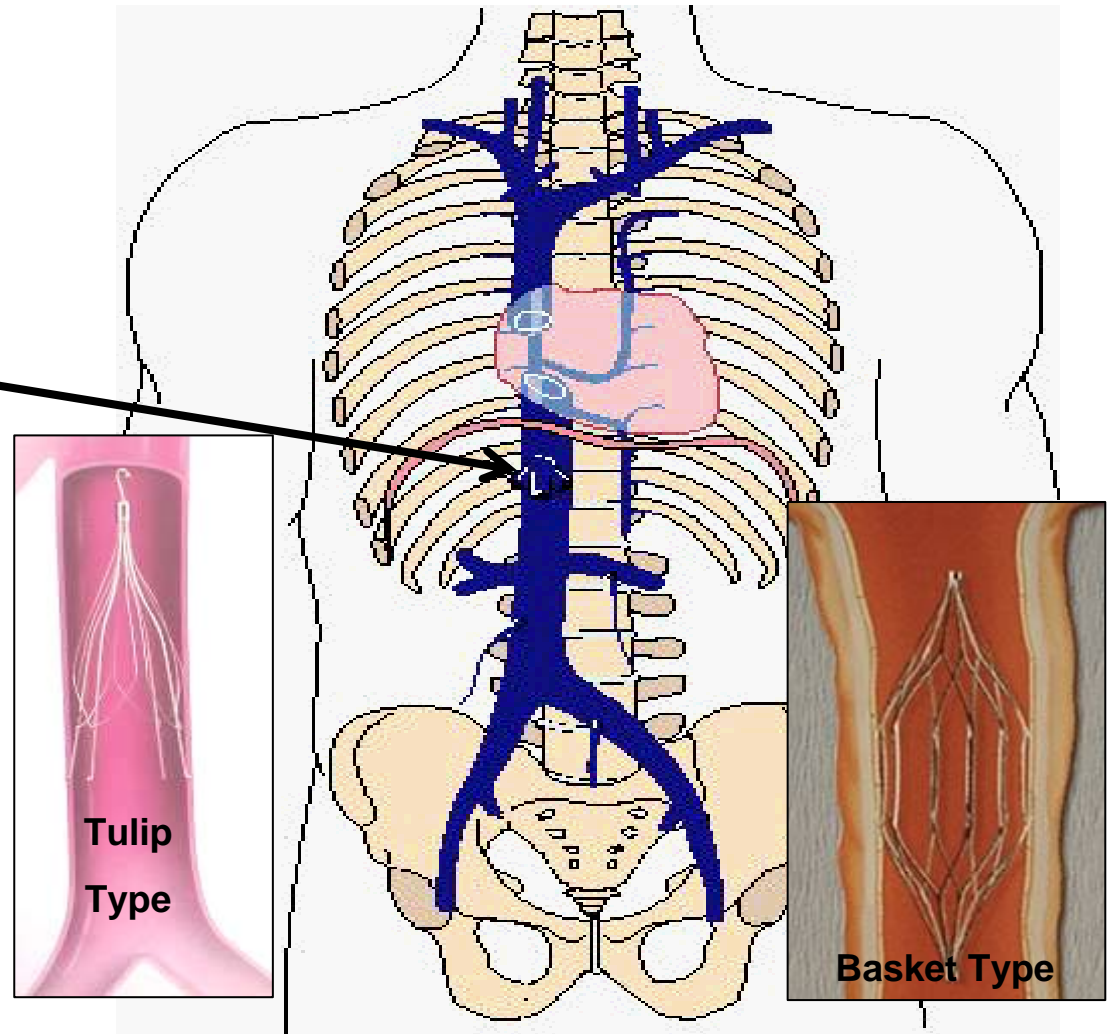
- **Thrombus in vena cava filters are not detectable**
- **Removal of filter when thrombus is present can cause fatality**

## **SOLUTION :**

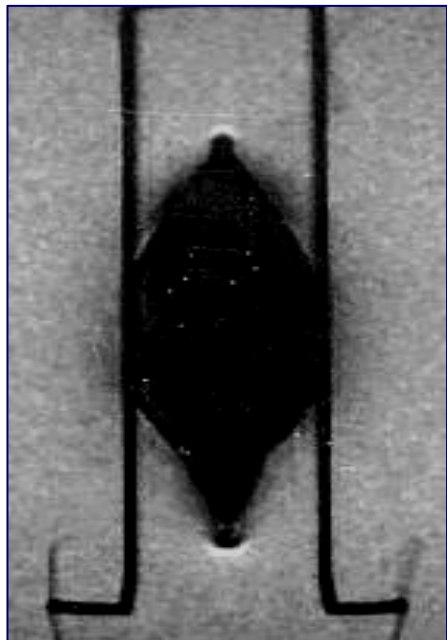
**An MRI visible vena cava filter allows viewing thrombus prior to removal. If blocked, drugs can be administered to clear filter.**

# Vena Cava Filter

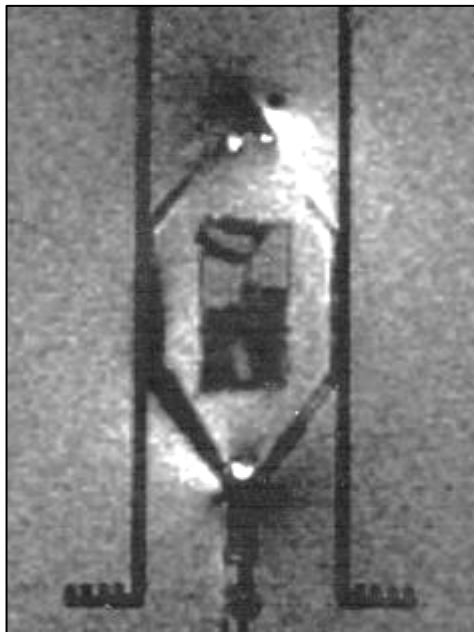
Vena cava filters prevent pulmonary embolisms by intercepting thrombotic material within the inferior vena cava.



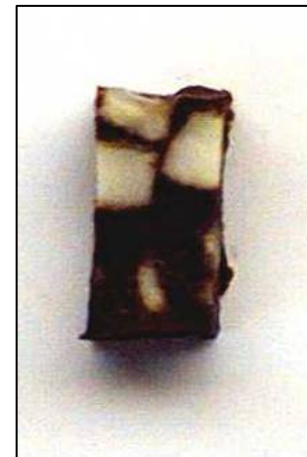
# MR Images of Vena Cava Filter Containing Biophan's MRIs Technology



**Passive MRI vena  
cava filter cannot  
be imaged**



**Active MRI vena  
cava filter with  
Biophan technology**



**Cross-section of  
specimen**

Gregor Schaefer 2002

**Simulated thrombotic specimen in phantom is now visible.**

# Other Devices in Development

- **MRI imageable heart valve**
- **MRI Occluder for PFO**
- **Imageability improves medical efficacy**
- **Patented technology provides competitive advantage**
- **Licensed to Boston Scientific (NYSE: BSX)**

# Interventional Surgery Safety under MRI

## **PROBLEMS:**

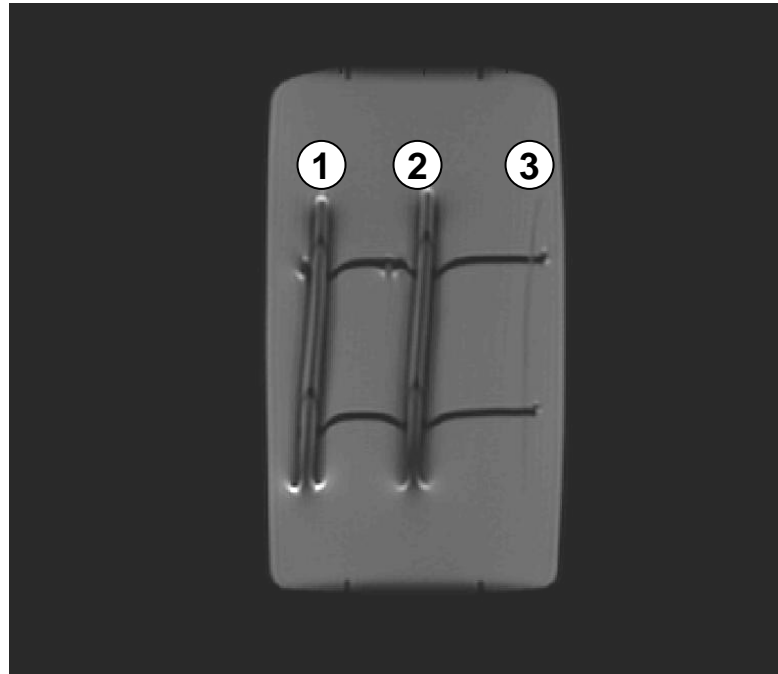
- **Over heated catheters and guidewires prevent many interventional surgical procedures under MRI and its superior tissue imaging capabilities**
- **Image artifacts and/or invisibility of devices limit interventional surgery under MRI**

## **SOLUTION:**

**Biophan's thin-film nanomagnetic particle coating technology provides a controllable, "magnetic" signal capable of creating an image of the coated device.**

**Licensed to Boston Scientific (NYSE: BSX)**

# MRI Device Imaging



**SE coronal image of 3 aluminum wires (1/32"). Wire (3) is uncoated.**

## Relationship with Boston Scientific

- **Equity investment and technology license closed May 30, 2005**
- **\$5.75 million in equity and license fees**
- **Royalty rates of 3-5%**
- **Exclusive for resonant circuit on vascular implants**
- **Non-exclusive rights for MRI safety and imageability of medical devices, pacemakers, defibrillators, et al**



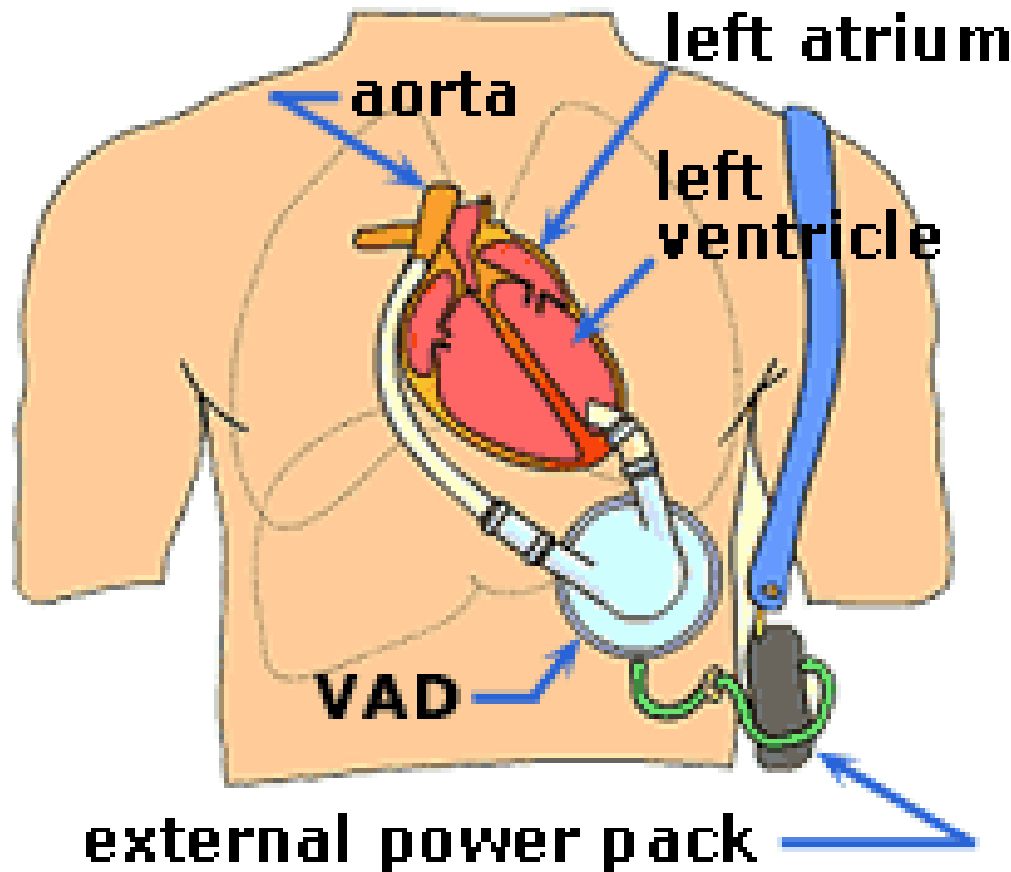
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# **Strategic Cardiology Transaction**

# Entrance into Ventricular Assist Device Market

- **Acquired minority interest in early stage Ventricular Assist Device (VAD) developer Myotech, LLC: December 2005**
- **40% interest cash and stock deal with right to acquire majority interest**
- **Developer of next-generation VAD**
- **Substantial competitive advantages over current VAD technology**

# Existing VAD Technology



Perforates the heart and great vessels

High risk of thrombus, stroke, bleeding, and infection due to several moving parts

Limited applications at specialized transplant and cardiac centers

Average procedure cost:  
\$205,800

# VADs Summarized

- **Designed to restore cardiac output in patients suffering from many forms of heart failure**
- **Can provide left-only (LVAD), right only (RVAD), or full ventricular support**
- **Implanted as a “bridge-to-transplant,” “bridge-to-recovery,” or “destination therapy” for indefinite support**
- **Today’s devices have many complications due to blood contact leading to bleeding, clotting, stroke, and infection**
- **Biophan’s Myotech Myo-Vad resolves these problems, provides minimally invasive alternative; rapid install**
- **Emerging \$7 billion market**

# Myotech VAD Technology

## The MYO-VAD



Simple installation (~3 mins.) and removal

No blood contact nor mechanical parts; decreases risk of complications

Wide array of applications; likely to be available at nearly every community and rural hospital

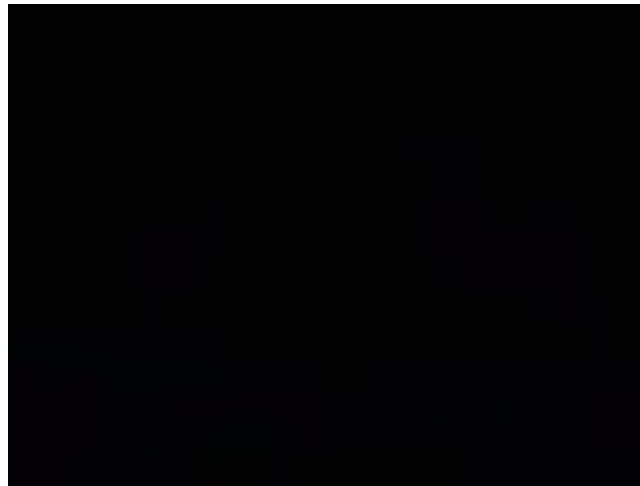
Anticipated procedure cost: \$60,000 (vs. \$205,800)

# The MYO-VAD Competitive Difference

	MYO-VAD	Thoratec Heartmate II	Worldheart Novacor	Arrow CorAide	Ventricor VenrAssist	BerlinHeart Incor
No contact with circulating blood	●					
Rapid installation	●					
Systolic and diastolic support	●					
Physiologic pulsatile flow	●					
Support of all size hearts in nearly all disease states	●					
Long-term support destination therapy	●	●	●			
Enhance myocardial circulation	●	●	●	●	●	●
Recover from Cardiac Arrest	●					

# The MYO-VAD's Potential

Dr. James E. Lowe



In slide-show view, click on a black bar to run the video of James E. Lowe, M.D. - Professor of Surgery and Pathology, Duke University.



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# **Stock Progression and Financials**

# Stock Progression

BIOPHAN TECHNOLOGIES INC

as of 30-Jun-2006



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# Summary of Key Financial Information

- Share Price: \$1.10
- 52-Week High: \$3.13
- 52 Week Low: \$.98
- Shares Outstanding: 81.8 million
- Float: 68 million
- Market Cap: \$89.98 million
- Average Daily Volume (90 days): 282,097
- \$30 million financing at \$3 per share average;  
Boston Scientific investment at \$3.02

*Figures as of June 30, 2006*

# Strong Management Team

- **Stu MacDonald, VP R&D – formerly VP R&D at J&J division, with a 400 person organization**
- **Jeff Helfer, VP Engineering – formerly Dir. Of Engineering at J&J**
- **John Lanzafame, COO – former President STS Biopolymers, acquired by Angiotech (ANPI)**
- **Darryl L. Canfield, CPA, VP Finance, Treasurer, Secretary, and CFO –30-year finance career**
- **Michael Friebe, Ph.D. (Biophan-Europe) – Entrepreneur/CEO**
- **Andreas Melzer, MD (Biophan-Europe) Inventor and Surgeon**
- **Michael Weiner – CEO – Patent, finance and sales experience**

# Biophan Potential Impact Within 5 Years

- **Stents, Vena Cava, Heart Valve**
  - **Pacemaker, Defibrillator, Neurostimulator safety**
  - **Myotech Myo-Vad**
- **\$100-\$200 million annual**
  - **\$40 million**
  - **\$100 million  
(growing to \$500+ million)**

# Investment Rationale

- **Innovative technologies that improve competitive advantage of medical device companies**
- **Solve problems that can move market share between large and fierce competitors**
- **Robust technology portfolio**
- **Licensing annuities from extensive 200-patent portfolio**
- **Potential product revenue from high-margin sales of several product lines to be sold OEM to partners**
- **Validating deal with Boston Scientific, with significant revenue potential; 2<sup>nd</sup> deal in negotiation**