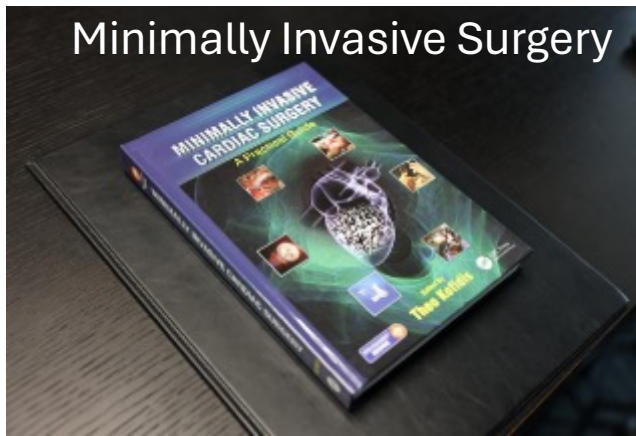
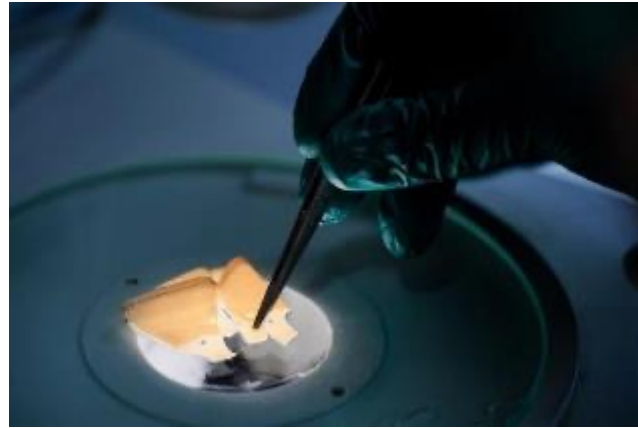


# Innovation / Books

## A new Heart Valve: Naturally Designed, Personalized Heart Valve

## Endopsis



Prof Theodoros Kofidis

## New invention a plus for heart surgery

Flexible, miniature video camera replaces a bulky system and helps reduce trauma, hasten recovery



Alexandros Papanicolaou (left) holds the new Endopsis system that he used when performing minimally invasive heart surgery (right) on a 69-year-old patient at National Observatory Hospital on Jan. 31, 2019. (PHOTO COURTESY)

**Endopsis**  
 Papanicolaou's new invention is a flexible, miniature video camera that can be inserted through a small incision in the chest, providing a clear view of the heart during surgery. This new system is designed to be used in minimally invasive cardiac surgery, where a large incision is avoided. The system is made of a flexible, thin tube with a camera at the end. It is inserted through a small incision in the chest, and the camera provides a clear view of the heart. This allows the surgeon to perform the surgery with less trauma and faster recovery. The system is also designed to be used in a variety of other minimally invasive procedures.

**MINIMALLY INVASIVE CARDIAC SURGERY**  
 A Practical Guide  
 by Theodoros Kofidis

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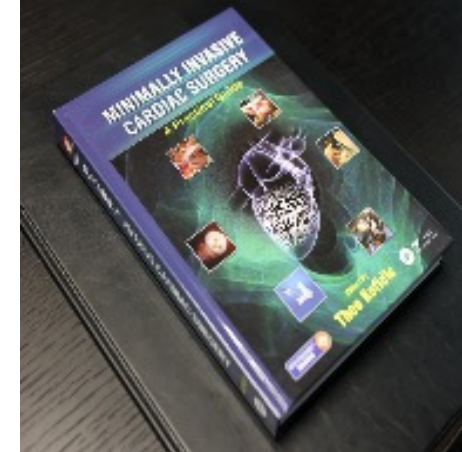
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## Holographic visor helps surgeons see with 'X-ray' vision

**Use of fresh all eyes, NECC's 3D vision plan surgery, anticipate problems**  
 Holographic visors are being used in the operating room to help surgeons see through the chest wall and visualize the heart and lungs. This technology allows surgeons to see the internal organs in 3D, which helps them to plan the surgery and avoid complications. The visors are also used to help surgeons see the position of the heart and lungs during the surgery. This technology is being used in a variety of other minimally invasive procedures.

# Peak of Excellence – Minimally Invasive Cardiac & Thoracic Surgery



## BENEFITS

- Faster and Better Recovery
- Shortened Length of Hospital Stay
- Decreased Risk of Infection
- Less Blood Loss
- Less Arrhythmia
- Less Lactate/ Higher Albumin

### Clinical Excellence

Globally Recognised Hub  
Better clinical Outcomes  
Value Driven Outcomes  
Multi-disciplinary

### Research & Technology

One of Asia's top Animal & Wet-labs  
Expert GLP Lab (In progress)  
Novel medical devices  
Patents / IPs / Industry  
Collaboration  
MedTech Startups  
Published Papers in PubMed

### Training & Education

Simulation & Training Hub  
MICS Workshops (Regional)  
MICS Book  
360 OT CAMERA and Virtual  
Reality

Types of Minimally Invasive Heart Surgeries

To date, over 500 patients in Singapore & around the region have gone through the MICTS Programme at NUHCS.

CABG/  
TECAB/  
MIDCABG

Mitral Valve  
Surgery

Tricuspid Valve  
Surgery

Aortic Valve  
Surgery

ASD  
Closure/Maze  
Procedure

Endoscopic,  
Trans-areolar  
Surgery

Mini-AVR  
(mini-  
thoracotomy)

Combined  
Surgeries