

# CardioVASS Device

FOR CARDIOLOGY TRAINEE

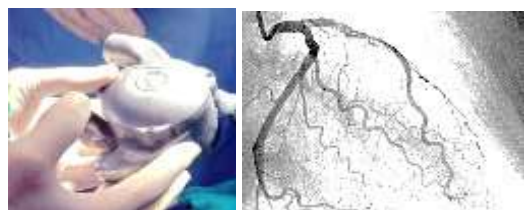
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## Patent

- IP number 2013700270
- PT/4466/UMP/13

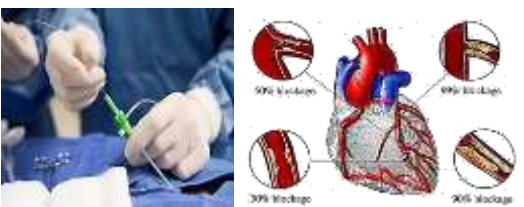
## INTRODUCTION



## CardioVASS DEVICE?

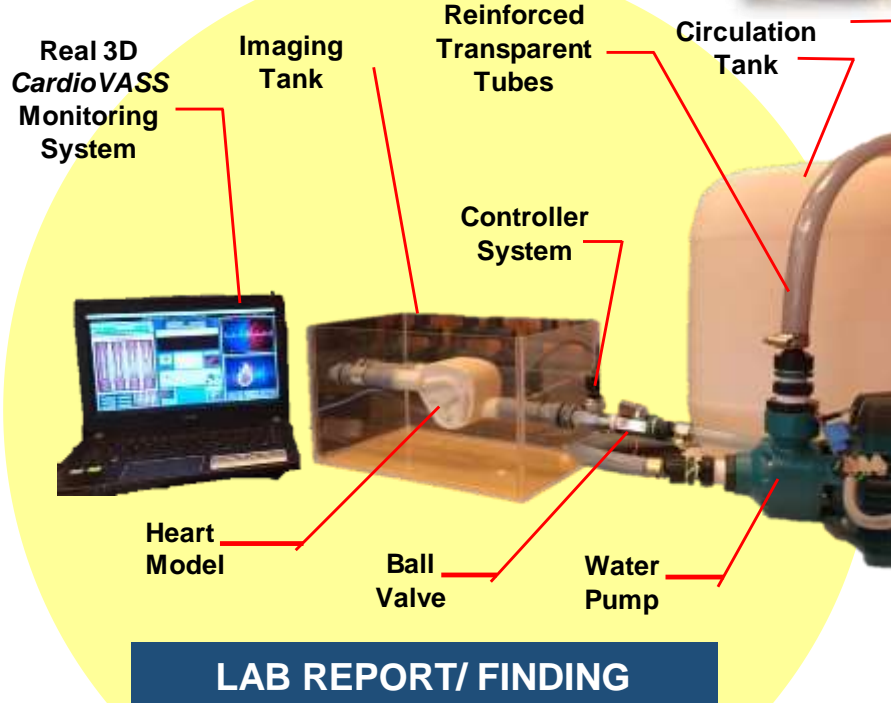
*CardioVASS* device is a medical device that have been developed to assist the medical training process especially for the cardiology trainee. Our current *CardioVASS* device are equipped with the latest "Real 3D Monitoring System" that enables the user to experience a real time monitoring system with upgraded electronic and mechanical complete system that ready to be commercialize.

## FUNCTIONALITY / OPERATION



## NOVELTY

1. Affordable *CardioVASS* training device
2. Compact portable design (Less 5 kg)
3. Cardiac training adapt real patient condition (Speed, contraction and heart rate controls)
4. Suitable for all trainer/ cardiologists/medical educator/ medical student to use
5. Real 3D *CardioVASS* monitoring system occupied with electronic sensor detection
6. A complete monitoring system that analyze blood pressure, heart rate and oxygen level of the heart model based on the real accumulated data



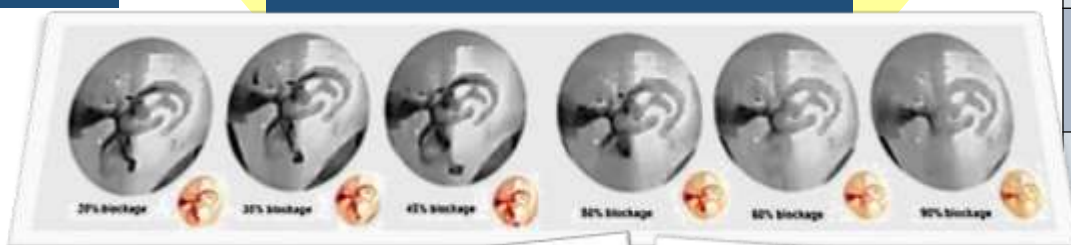
## COMMERCIALIZATION

1	What is the community/industry project that your technology/product try to solve?	i) To act as a real-time apparatus in understanding the blood flow in human heart ii) To facilitate the medical educators in practical teaching session
2	Which community/industry that will benefit from your technology/product? How will they benefit?	i) Medical Educator ii) Medical Student iii) Cardiologist
3	How will UMP benefit from the technology/product?	i) UMP becoming pioneer in developing the medical apparatus focusing on cardiology field
4	What is the level of development of your product/technology?	i) R&D ii) Clinical Study

## CHARACTERISTICS

1. Lightweight
2. User friendly
3. Compact portable design
4. Fast and easy preparation
5. Excellent data acquisition
6. Equipped with the latest Industrial Revolution (IR 4.0) system
7. Real-time learning process
8. Safe product (non -hazardous)

## LAB REPORT/ FINDING



## ENVIROMENTAL IMPACT

1. Enhance development in artificial heart valve study
2. Expansion of knowledge in insertion of the catheter inside the coronary arteries in human heart
3. Introduce limit the dependency on imported medical devices as treatment tools
4. Growth the potential of Biomedical Engineering fields in Malaysia especially in the development of our own medical devices

## PRODUCT REVOLUTION



## COLLABORATIONS



## MARKETABILITY



**Pangolin Heart Simulator**  
Price: > RM 30k



**Heart Catheterization Bilateral Arterial**  
Price: >RM20k

1	Who are the potential users of product/invention?	• Faculty of Medicine • Teaching Hospital • Cardiac Intervention Center
2	Are there similar products in the market?	• Non similar product identified in the local market
3	Who are the competitors and what is their market position?	• Outside competitors does exist but with different features and objectives.
4	What is the cost comparison between your product and the existing product in the market?	• We expect our price around RM3000- RM5000

## ACHIEVEMENTS

1. **THE BEST INNOVATION MEDICAL DEVICE AWARD**, 9<sup>th</sup> International Medical Device Expo & Health Intervention (IMDEHI), 2018, Negeri Sembilan, Malaysia.
2. **GOLD MEDAL**, International Festival of Innovation on Green Technology (i-FINOG), 2018, UMP, Malaysia.
3. **THE BEST POSTER AWARD**, Innovation Research and Industrial Dialogue (IRID), 2018, UTEM, Malaysia.

## PUBLICATIONS

1. Development of 3D printed heart model for medical training. Intelligent Manufacturing & Mechatronics, pp. 109-116, 2018. [Scopus Indexed].
2. Development of heart simulator (Heart-S) on the left ventricle for measuring the blood circulation during cardiac cycle, Journal of Biomimetics, Biomaterials and Biomedical Engineering, pp. 78-83, 2018. [Scopus, Q4, SJR: 0.18]
3. Development of Cardio Vascular Simulator (*CardioVASS*) device on Angiographic Image for Medical Training System, Journal of Advanced Research in Fluid Mechanics and Thermal Sciences, pp. 103-111, 2019. [Scopus, Q3, SJR: 0.24].
4. Effect of the Hemodynamic Parameters on Physiological Blood Flow through Cardiovascular Disease (CVD) -The Perspective Review, Journal of Advanced Research in Fluid Mechanics and Thermal Sciences, pp. 19-34, 2020 [Scopus, Q3, SJR: 0.24]

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