



Dynamic 3D holography of thrombus

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Department: Division of Biological Engineering

Pre-requisites to do this project: You must currently be in your penultimate year (2011)

This project is open to: All students from the Faculty of Engineering who have a keen interest in biological systems and students studying a **Biomedical Science** degree.

The Problem

Vascular disease is the leading cause of death in the developed world. Researchers are interested in exploring the interrelationship between local blood rheology and vascular disease. This requires the development of new technology to perform high speed imaging of the 3D structure and flow over a thrombus.



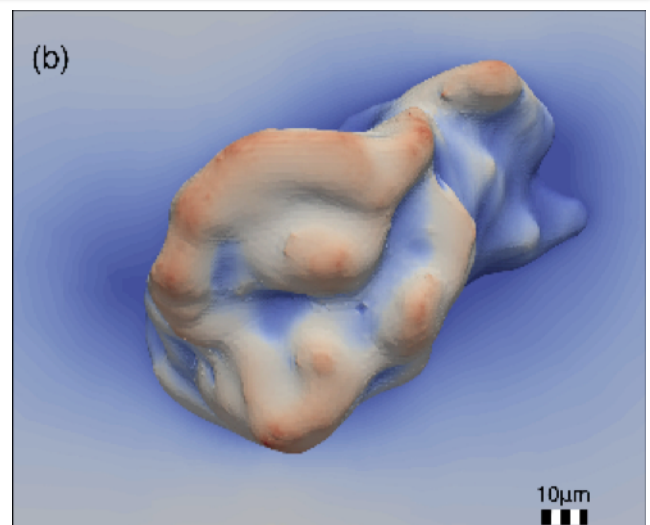
PhD student Zac Ismadi preparing an experimental setup in LDI's facilities. Image Courtesy: LDI.

Facilities

- LDI experimental facilities
- World-leading image analysis suite

This project is offered by the Division of Biological Engineering

For more information about the Laboratory for Dynamic Imaging, please visit: <http://www.mubeta.monash.edu/>



Reconstructed 3D render of a scanned thrombus. Image Courtesy: C. Butler, Mech&Aero Eng.

The Project

You will develop and apply a holographic microscopy system within the LDI Lab to image and study the 3D structure and flow over a thrombus. The flows will be visualized and measured using combined laser holography and tomography based imaging and image reconstruction techniques.

To achieve success in this challenging project, interest in **biomedical research** and **imaging** will be essential. The successful candidate will be required to work in a team including engineers and physicists.

