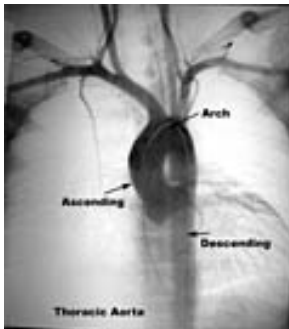


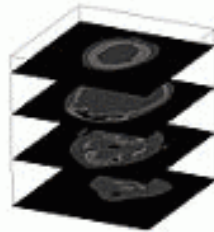
## 2009 PhD / Masters Project

### 3D X-Ray Measurement of Flow Through the Heart

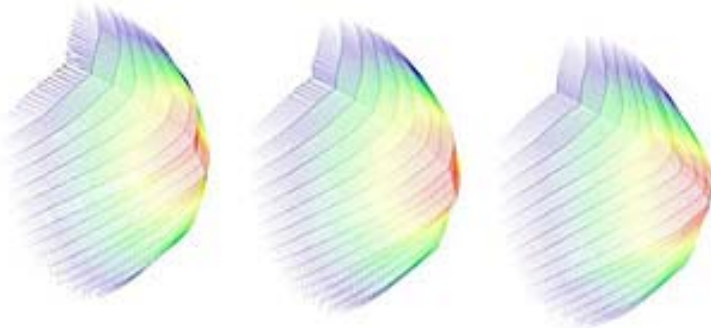
Some of the most exciting applications of synchrotron research tools over recent years have been for medical research. These tools such as X-ray angiography or more general X-ray imaging typically focus on anatomy, or the physical structure of the biological components being imaged. Recent work led by a group of researchers from the faculty of engineering at Monash University has seen successful combination of phase contrast synchrotron X-ray imaging and PIV (a measurement technique with its origins in the wind tunnel).



X-Ray angiogram of Aorta



X-Ray Imaging can yield 3D data through use of Computed Tomography



3D velocity field measured using new x-ray PIV technique developed at MuBeta Laboratories



Schematic diagram of a Synchrotron showing accelerator, booster ring, storage ring and beamlines

### The Project:

The successful applicant, with interests in imaging, fluid mechanics, mathematics and computer programming will be a key part of a team continuing ground-breaking work in combining PIV and X-ray imaging. In particular, the project will focus on successfully transferring these techniques as they are developed to the measurement of blood flow in hearts of living animals.

### Contact Details:

For more information, please visit:  
<http://www.MuBeta.monash.edu/>

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### Facilities

- SPring-8 Synchrotron (Japan)
- Australian Synchrotron
- MuBeta Synchrotron Analogy Facility
- Image Processing Computer Grid