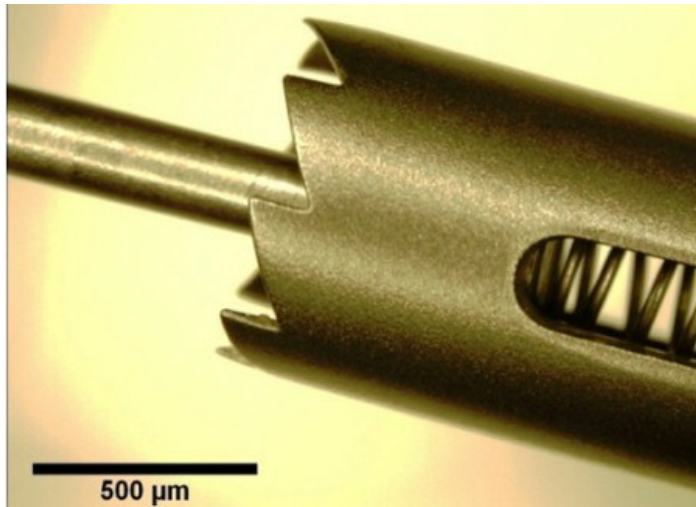


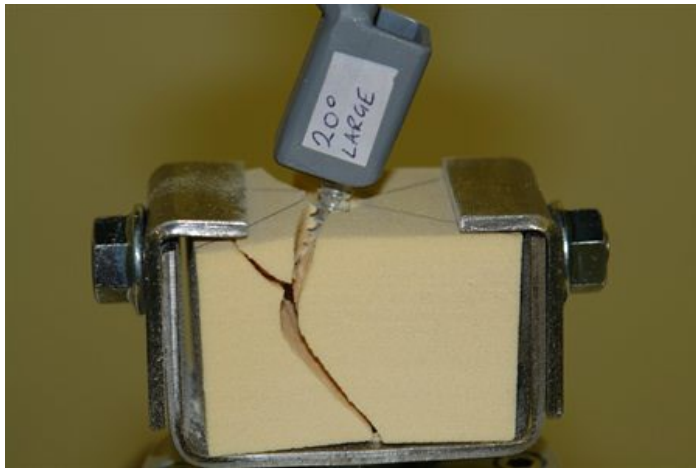
## Bio-Medical research

### Development of medical devices involving:

- Computer aided design
- Computational modelling (finite element analysis, multi-physics)
- Mechanical testing



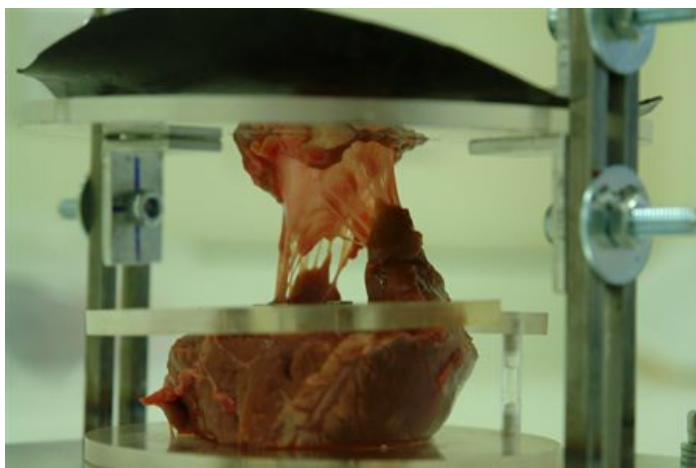
Development of a surgical instrument for spinal surgery



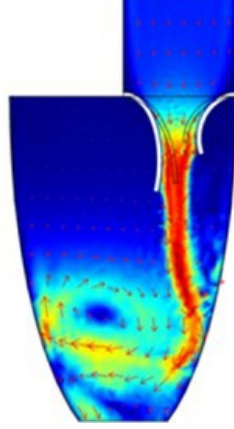
Mechanical testing of screw fixation in synthetic bone

### Natural and synthetic biomaterials: relationship between composition, structure, function, failure and replacement for:

- Understanding mechanical basis of injury
- Improved materials selection for implants
- Improved fixation of implants



Mechanical testing of heart tissues



Computational modelling of the mitral valve.

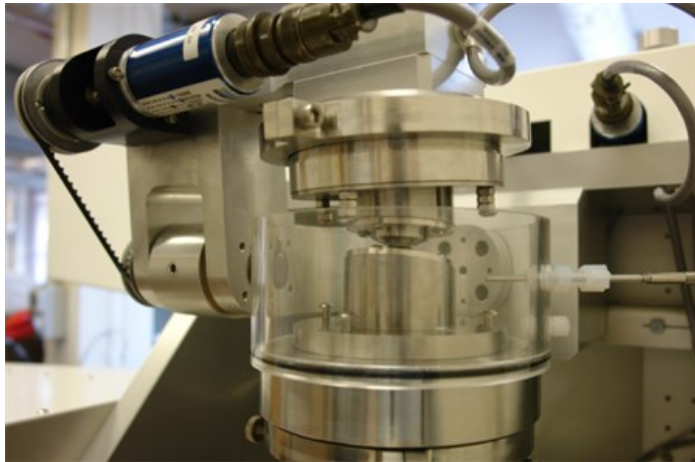
### Applications of emerging technologies in bio-medical engineering:

- Micro-engineering and nanotechnology
- Tissue engineering

### Facilities

Research facilities include:

- Bio-medical Engineering laboratory with a class II containment area
- Three Bose materials testing machines
- Three single-station Bose SDWS-1 Spine Simulators



Spine simulator