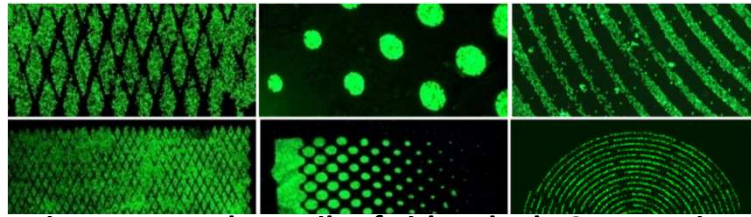


2D Patterning & Cell Sheet Roller

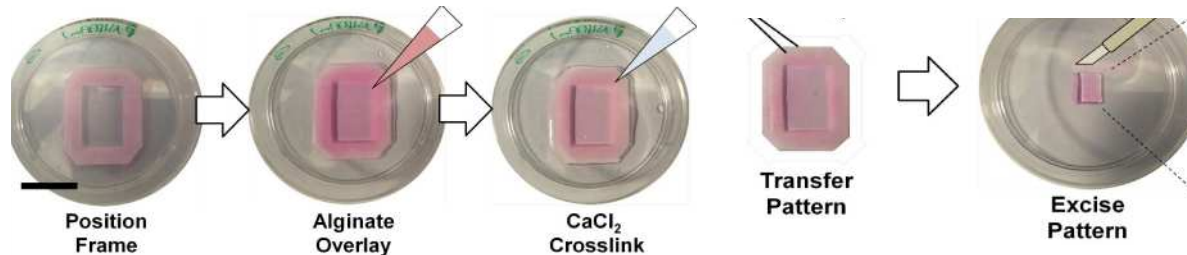
Deepak Kumar (deepak.kumar@manchester.ac.uk) (Start Date: Dec 2014)



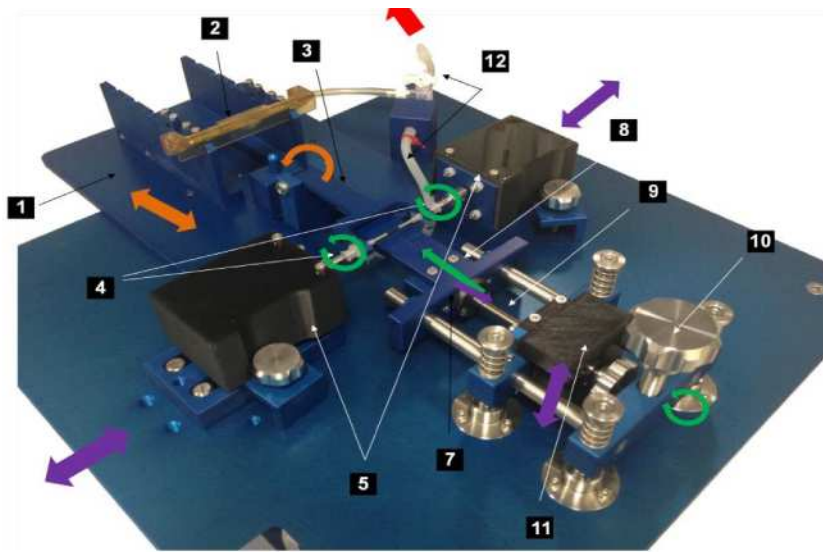
UK Regenerative
Medicine Platform



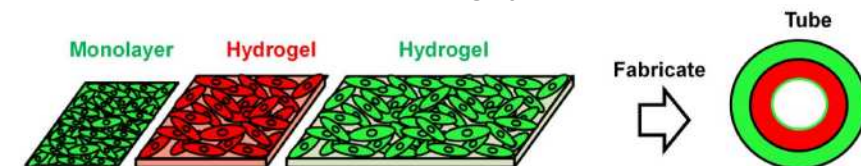
Micropatterned stencils of airbrushed ECM proteins



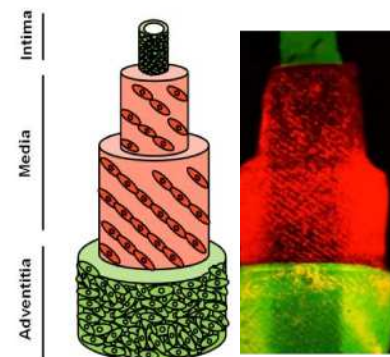
Detachment and transfer technology of cell patterned surfaces



Cell sheet rolling system



Schematic of multi-layer and -thickness tube fabrication



Fabrication of a biomimetic vessel; human endothelial cells, smooth muscle cells and fibroblasts

What is it?

Novel, automated platform which allows accurate, standardised and repeatable fabrication of tubular architectures composed of multiple layers.

Strengths

Fabrication of multi-layered structures.
Automated with minimal manual handling.
Fast, efficient and reliable.
Rapid and standardised procedure.
Built-in perfusion bioreactor.

Weaknesses

Only restricted to tubular tissues.

Potential Applications

Oesophagus Tissue engineering.
Vascular grafts.
Nerve Tissue Engineering.