

BIOPLASTICS FOR MEDICAL APPLICATIONS

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Bio-sourced polymers

- **Polyhydroxyalkanoates (PHAs)**
- Bacterial cellulose
- γ -Glutamic acid



High performance materials

- Highly **biocompatible**
- **Tailor-made:** properties adjusted to meet product requirements

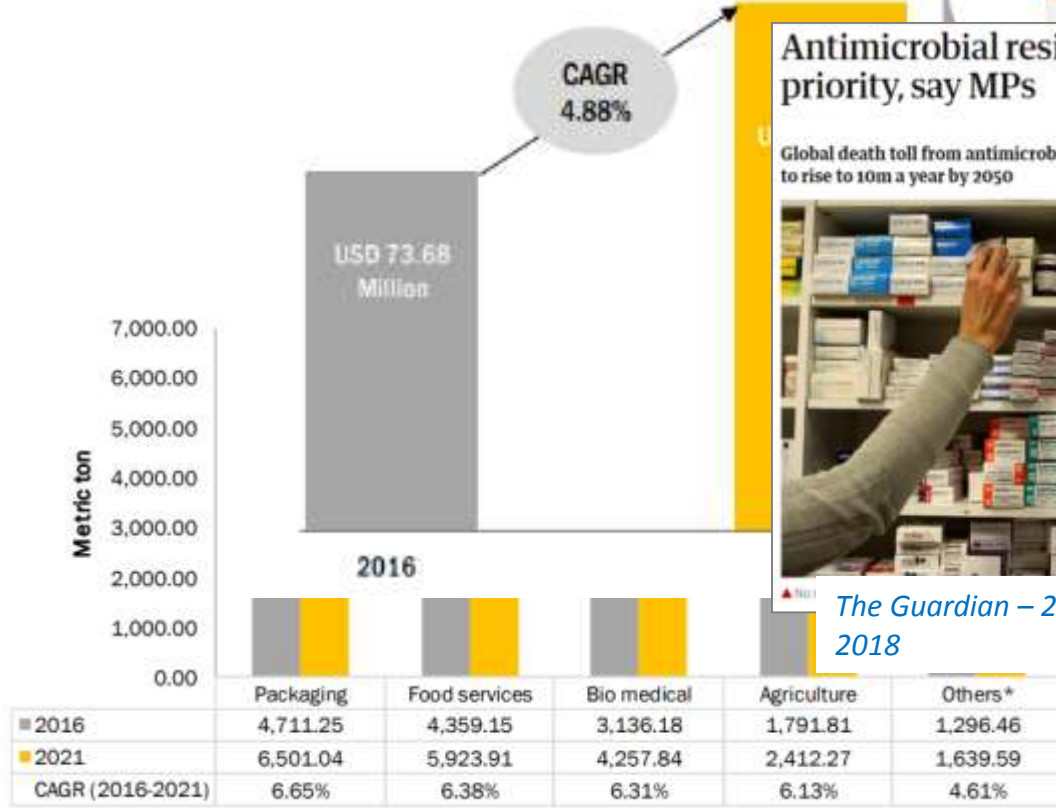


Biodegradable

- in **human body, soil** and **marine environments**

Growth of PHAs market

Stents : projected to reach USD 1,786.6 million by 2021 from USD 473.4 million in 2016



Antimicrobial resistance must be policy priority, say MPs

Global death toll from antimicrobial-resistant infections expected to rise to 10m a year by 2050



The Guardian – 21 October 2018

OPPORTUNITIES

Microplastics found in human stools for the first time

Study suggests the tiny particles may be widespread in the human food chain

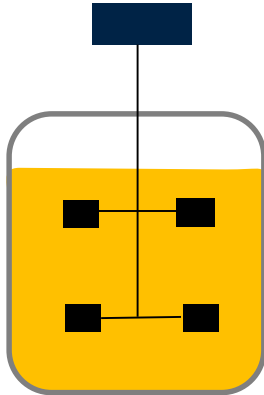


Scientist looking through microscope in laboratory. Photo credit: Alan Stock Photo

The Guardian – 22 October 2018

Fermentation technology

Nutrients
+
Bacteria



Characterization & processing

Solvent casting

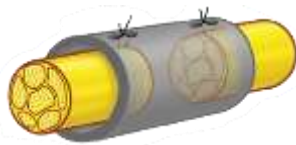
Deep moulding

Electro-spinning

3D printing

Prototype desing

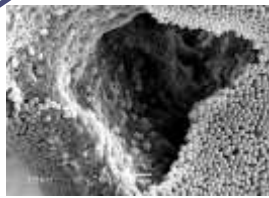
Nerve conduits



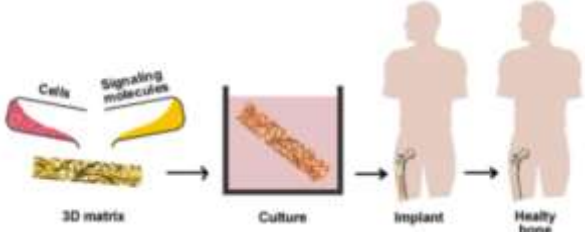
Stents



Antimicrobial coatings/
scaffolds



Microspheres



Tissue engineering



THE TEAM



Scientific Advisor

- detailed design of technical work-plan and guidance



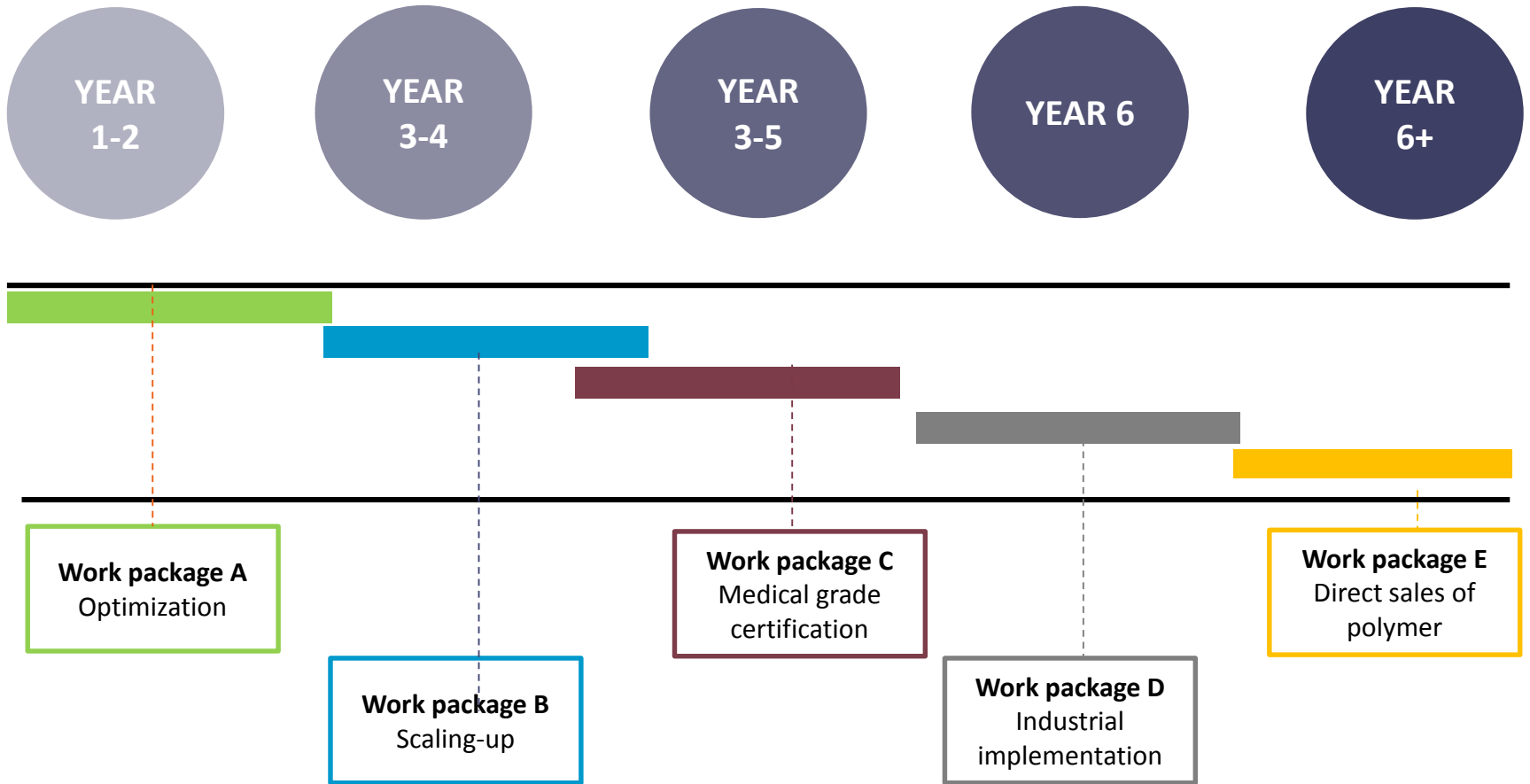
Biochemical Engineer

- development and optimization of the production process



Polymer Scientist

- downstream, purification & functionalization



Roadmap



Imperial College
London



Thank you for your attention!



ReBioStent

Reinforced Bioresorbable Biomaterials for Therapeutic Drug Eluting Stents