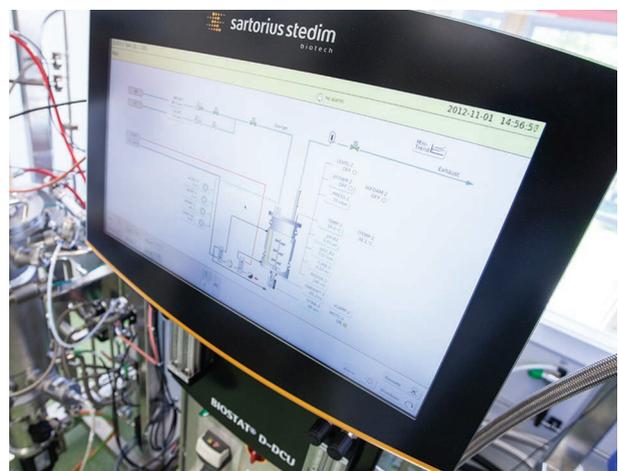




Industrial fermentation platform

Scion's fermentation platform enables scale up of industrial biotechnology capability to generate microbially-produced products including enzymes, biopolymers (bioplastics), biofuels and biochemicals.



Scion is developing biological processes to use wood and other biomass feedstocks to create new products to support growing circular and bio-based economies. Companies can use our fermentation platform and work with us to test approaches to modifying and adding value to biomaterials and biofuels.

Fermentation resource

The industrial fermentation platform consists of closed sterilisable vessels in which microbial or biochemical reactions are carried out under a controlled environment (temperature, pH, redox, oxygen content, stirring). Experiments can be conducted from 1L to 100L scale, producing sufficient quantities for downstream processing. The process yields high cell densities and hence biomass productivity. The platform has a continuous centrifuge allowing rapid harvesting of biomass or supernatant containing biofuel or biochemicals secreted into the growth medium.

This platform is housed inside our modern PC2 fermentation laboratory. This facility allows research and testing with genetically modified organisms or imported non-GE production strains with applications for biopolymer and biofuel production.

Fermentation research

We are investigating ways to modify fibres, biopolymers, biochemicals and biofuels. Examples include:

- Production of enzymes at sufficient quantity to modify and add value to biomaterials (lignocellulosics, biopolymers, lignin).
- Modifying biomaterials using enzyme-based cell-free systems.
- Production of bioplastics such as polyhydroxyalkanoates (PHAs) by microbial fermentation.
- Converting product streams from biorefinery sugar solutions and waste derived feedstocks into biofuels and biochemicals.

Work with us

Scion works directly with industrial manufacturers. We can tailor relationships to meet individual customer needs, including services such as specialised testing, troubleshooting, one-on-one confidential research, joint development partnerships and strategic multi-party alliances.

Multi-disciplinary research teams can be assembled to provide the full range of skills needed for any given project. We can also call on our national and international partners to help bridge gaps between ideas, research, technologies and commercial needs.

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About Scion

Scion is the Crown research institute that specialises in research, science and technology development for forestry, wood and wood-derived materials, and other bio-material sectors.

Scion's purpose is to create economic value across the entire forestry value chain, and contribute to beneficial environmental and social outcomes for New Zealand.



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