



R&D services

for the forestry, forest products and bioproduct sectors, and for businesses adapting to the circular bioeconomy.

We work with customers to understand their needs, then we look at how we can use technology and science to make a difference.



Scion – R&D for forestry and the circular bioeconomy

Scion is helping industry solve new challenges and support the transition into a new economy focused on sustainable design and renewable resources.

Scion has been creating science impact for New Zealand's forestry industry for 75 years, maximising the value and range of products derived from trees. We are dedicated to helping New Zealand transition to a biobased economy. We have developed new bioproducts from renewable resources, with our science covering biorefining, biomanufacturing, biomaterials and fuels made from trees and other biomass.

We are here to support your business to adapt and grow. Backed by our strong international networks, we provide unique R&D expertise across entire value chains specialising in:

- Sustainable forest management and tree improvement.
- Managing forest biosecurity, fire and climate change risks.
- Wood products and processing.
- Wood fibre, pulp, biopolymer and biochemicals.
- Bioenergy (heat, power and liquid fuels from wood).
- Creating value from waste and residue streams.
- Sustainable packaging and distributed manufacturing.
- Biodegradation and recyclability.
- Biomanufacturing.



Tax credits for R&D work with Scion

To help build a skilled, productive economy, New Zealand businesses can apply for tax credits when they invest in research and development.

Scion is an approved research provider under this scheme which means there is no minimum investment requirement when you contract your R&D work with us.

The tax incentive offers:

- A tax credit equal to 15% of eligible R&D expenditure.
- A \$120 million per year maximum on eligible expenditure.
- No minimum R&D expenditure threshold if you work with an approved provider, such as Scion.

The R&D tax incentive is delivered jointly by Callaghan Innovation and Inland Revenue.

Scion's R&D services

Our scientists are world leaders across sustainable forest management and tree improvement, forestry biosecurity, forest ecosystems, wood processing, bioenergy, waste streams and biomaterials. We have a range of technical services, specialist facilities and state-of-the-art technologies.

Working with Mana Whenua

At Scion, we work with whānau, hapū, iwi – including kaitiaki of the whenua and Māori forestry and farming enterprises. This includes methods to reduce the carbon impact from farming, new ways of viewing and valuing the ngahere, preserving fresh water, and also growing and using taonga species such as tōtara for future generations.

Nursery production, tree site species mapping, indigenous and exotic species

Our science enables plant production at scale to produce sustainable, healthy, resilient and cost-effective forest trees that have been tested in a wide range of sites and climates.

Forest establishment and maintenance

Forestry research enables diverse and mixed-use productive forests to be planned and grown for a range of wood/fibre product, environmental, economic, societal and cultural outcomes. Scion offers land use assessment and modelling from farm to regional level.

Forest protection, biosecurity and fire research

New biosecurity surveillance, diagnostic, and biological control tools allow the industry to prevent and manage new pest and disease incursions. This includes remote sensing and disease monitoring platforms to manage the impact climate change will have on forest health. Scion uses new tools and fire theory to prepare forest owners and communities for an increasing wildfire prone environment.

Ecosystem services and social impact assessments

We have specialist ecosystem service valuations that quantify how forests contribute to habitat, water quality, carbon sequestration, erosion prevention and recreation. Community engagement and social impact evaluations for forestry include engagement with mana whenua.

Species/product/carbon value chain mapping

We enable a smart, connected value chain for the forestry and wood products sector by visualising and quantifying information flows from germplasm through to wood products. Scion develops new carbon models for indigenous and mixed forests which includes new frameworks that characterise carbon in the whole forest ecosystem.

Wood processing and product development

Transitioning the wood products and building sectors towards circular, high-efficiency and low-impact manufacturing by ensuring consistent performance.

Timber engineering and built environment solutions

Reshaping building design and in-service protection through new building physics modelling.

This supports timber construction sectors via product development, testing and standards compliance. We deliver new solutions around planning circular, sustainable and regenerative built environments and communities.

Residue processing options

We explore the wide range of residue options available from woody biomass and other processing residue streams to create new fibre, chemical and energy opportunities.

Consultancy

We provide expert advice and technical services that can create new high-value opportunities related to: additive manufacturing, circular bioeconomy, bioenergy and biofuels, biorefineries, food contact compliance, process development and supply chain optimisation, socioeconomic analysis, technoeconomic and resource modelling and biomass availability assessments.

Accredited laboratory services

Facilities are available for biodegradation analysis, chemical characterisation, environmental analysis and biomass characterisation.

Materials performance, characterisation and product development

Physical and thermal material properties, chemical composition analysis, stress testing, microscopy services, polymer formulations, adhesives and coatings, composites, sustainable packaging, plant chemical extracts.



Advanced chemical characterisation and development

Chemical extraction from biomass, analytical identification, extruders for use in plastic, bioplastic and biocomposites, injection moulding and foaming, fibre thermoforming, box performance testing in chilled supply chain conditions, biomass pyrolysis, biomethane potential analysis, organic compound analysis, metals analysis, compound identification and structural analysis by solid-state and solution-state.

Biotechnology and fermentation services

Production of enzymes, bioconversion of biomass, biopolymers and biochemicals production and gas fermentation.

Biorefinery technology development

Biochemical extraction, thermomechanical process development, pulping process optimisation and process modelling.

Get in touch

If you'd like to talk to someone about R&D and want more information about the services and pilot equipment we offer, then please contact us.

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About Scion

Scion is a New Zealand Crown Research Institute that specialises in research, science and technology development for forestry, wood and wood-derived materials, and other biomaterial 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.

For further information visit www.scionresearch.com



Prosperity from trees - *Mai i te ngahere oranga*