BIOPOLYMERS & CHEMICALS

Scion provides New Zealand’s leading centre of expertise in bio-based chemicals, polymer and composites research. Our focus is developing functional chemicals, biopolymers and composites from renewable resources, preferably from New Zealand. Applications include plastics, composites, foams, adhesives and coatings.

POLYMERS & COMPOSITES

Our research is focused on manufacturing polymers and composites from renewable resources and developing their applications. Our capabilities include:

- **Synthesis (polycondensations, emulsions)** of new functional biopolymers such as modified biopolymesters (polylactic acids, polysuccinates), functional additives and cross-linkable bioresins derived from natural polyphenolics, terpenes and other bio-precursors.
- **Extrusion compounding and reactive extrusion** of biopolymers, bio-additives and complex biomasses, and their applications in plastics and composites.
- **Development of high performance long fibre (e.g. wood, harakeke), reinforced plastics and bioplastics.**
- **Biofoam technologies** including extrusion foaming, particle (bead) foaming (PLA and other biopolymers) and other foaming processes (polyurethane, phenolic).
- **CO₂ mediated polymerisation, processing and foaming** of biopolymers.
- **3-D printers.**

PACKAGING SOLUTIONS

This research encompasses sustainable packaging solutions and functional food packaging solutions. Our capabilities include:

- **Packaging** based on pulp/paperboard, plastics/bioplastics/biofoams and hybrid materials also including biomass and process residues.
- **Improved packaging properties** such as creep and humidity resistance, odour.
- **New barrier coatings and films** for improved moisture resistance and barriers.
- **Printing technologies and troubleshooting; new inks and new applications of printing.**
- **Light-weighting of packaging and packaging designs.**
- **Recycling and end-of-life reuse of packaging.**
- **Specialty testing of packaging products** such as cool store box testing, humidity-creep, biodegradation-compostability, accelerated aging.

www.scionresearch.com

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