

Meet our bioplastics research team



ALAN FERNYHOUGH – SCIENCE LEADER

Alan graduated from Liverpool University with a PhD in Polymer Chemistry. He has nearly 30 years experience in the synthesis, characterisation, formulation and processing of polymers. He has worked in the industry with BP and The Kobe Steel Group developing high performance polymer products (plastics, composites, adhesives, coatings) for business units within these companies and for IBM, Apple, Nokia, Sony, Matsushita, Ford, Boeing, and the London Hospital.

Since joining Scion in 2002 he has focused on biobased polymer (bioplastics, biobased additives, thermoset bioresins, biopolymer foams, wood and other biofibre composites). He currently is Science Leader of the Biopolymer & Green Chemical Technologies team.

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JEREMY WARNES – BUSINESS DEVELOPMENT

Jeremy is the Business Development Manager for new bio-based materials at Scion. His expertise is in natural fibre/bio-polymer composites, composite timber products and adhesives.

Jeremy's role is to provide a business interface and facilitate technology commercialisation. He played a major role in the commercial implementation of Scion's wood hardening technologies and wood fibre "dice" with Sonae Industria.

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----- **SCIENCE STAFF** -----



DAWN SMITH

Dawn has a PhD in polymer science from the University of Connecticut, USA. Her 12 years of industry experience include ten years at CIBA Vision in the United States developing polymers for biomedical device applications. Her current research focus is on biopolyesters, synthesising polymers from renewable resources and utilising naturally-derived polymers. Dawn is also the Science Leader of the Food Packaging Programme



MARTIN MARKOTSIS

Martin has a PhD in polymer engineering from the University of New South Wales, Australia. In his current role as a polymer chemist, Martin is developing new products from biobased and biodegradable polymer systems.

His focus is on incorporating biobased by-products or residues as renewable filler materials, or additives into petrochemical and/or bioplastic materials.

Martin is pictured with the bioplastic biospife that incorporates kiwifruit waste



KATE PARKER

Kate Parker graduated from the University of Auckland with a PhD in Chemistry. She has a background in environmental and waste treatment technologies, PHA polymer production and polymer foam processing. She is Science Leader for biopolymer foam developments at Scion.



DANIEL PARKER

Daniel is a research assistant in the plastics, bioplastics and biocomposites research programmes. His role assisting senior scientists includes processing new biomaterials and establishing mechanical and thermal properties by characterisation and testing. For the past four years that he has worked at Scion, Daniel has assisted in material development for many commercial clients and participated in processing trials at plastic manufacturers in New Zealand.



MARIE JOO LE GUEN

Marie's role as a scientist is in the development of high performance biocomposite and bioplastic materials. She has been involved in developing products using New Zealand's natural, renewable resources including harakeke (flax) and in novel fibre reinforced bioplastic materials. She is undertaking a PhD in natural fibre composites while at Scion.

Marie with a biofibre surfboard developed as part of the Biopolymer Network

ROSS ANDERSON

Ross is a scientist with long experience at Scion. After many years of research and development in traditional wood panels and products, he is now helping to create advanced composites using wood fibres and bioplastics or plastics. He is very experienced in adhesive developments and testing.





DAMIEN EVEN

Damien is a material scientist with an MSc in engineering science, specialising in polymers and composites. His role involves the development, formulation and production of bioplastics and biocomposites with tailored properties. His current focus is the development of a new wood plastic composite technology for industrial application of wood fibre reinforced thermoplastics, suitable for injection and extrusion plastic processing.



WARREN GRIGSBY

Warren Grigsby is a senior scientist and project leader in bioadhesives. He has a PhD from the University of Waikato. His research is in synthetic and polymer chemistry applications of biopolymer systems and the understanding polymer interactions in wood and biopolymer composites. His research interests include extraction, functionalisation and synthetic utility of bark tannins, polyphenolics and proteins in a range of applications; evaluation of interfacial behaviours of polymers on natural fibres; and development of adhesive and polymer systems for composite and modified wood products.



JAMIE BRIDSON

Jamie has an MSc in chemistry, specialising in biomaterials. Prior to joining Scion he worked in industry for Douglas Pharmaceuticals. His role involves assisting in the development, processing, chemical and physical analysis of polymers and biomaterials. The current focus of his research is developing bio-derived polymer additives using pine bark tannins, lignin, and other naturally derived polymers.



NANCY HATI

Nancy's role as a material scientist involves developing bio-based materials primarily biopolymers and biocomposites, but also includes research into matauranga Māori and indigenous flora. Nancy's current focus is on formulating biobased adhesives formulas for industry, testing industry developed MDF adhesives and developing new biopolymer foams and resins.



NAVASIVAYAM (NAVA) NAVARANJAN

Nava has a PhD in mechanical engineering from the University of Canterbury. In his previous position, Nava investigated the effect of silica fillers on the mechanical properties of glass fibre reinforced plastic composites and performed quality assurance experiments for leading plastic industries in Botswana and Sri Lanka. His current role as a scientist focuses on polymer, fibre and metal hybrid materials for the local packaging and building structural industry.



JAWORSKI CAPRICO

Jaworski is a packaging and polymer technologist with previous experience in developing new packaging products at Grace Davison Materials and Packaging in the Philippines. At Scion he has developed a range of pulp and polymer technologies and prototype products.



MEETA PATEL

Meeta has a PhD in Chemistry from The University of Auckland. Her PhD thesis was on polymerisation studies in supercritical fluids. As a Chemist she is now involved in the wood modification technology which involves developing new polymers, formulations, impregnating and characterising wood materials for targeted properties such as stability, durability and appearance.



SAMIR SHAH

Samir has a post graduate degree in "Plastics Processing and Testing". Prior to joining Scion he worked as a research and development chemist in leading plastics masterbatch manufacturing company in India. At Scion he has worked with developing and testing of bioplastics composites. Currently he is working on patented PLA foam technology, of which he is one of the inventors.