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Advances in the use of bio-based resources in polymer products

Scion's biomaterials and bioproducts research focuses on supporting New Zealand, international manufacturers and brand owners with innovative technologies that utilize sustainably-derived, bio-based resources. Increased bio-based content into products is promoted by legislation as well as consumers and brand owners who are demanding sustainability and renewability claims as well as excellent product performance. New Zealand is not set up for refining petroleum to chemicals and polymers and heavily relies on imported plastics and polymers. One possibility to reduce this dependency is to partially replace them with sustainably produced New Zealand biomaterials. Therefore, we have developed leading expertise in extrusion processing of biomass, biopolymers, fillers, novel bio-based additives and fiber addition. We continue to expand our capability, adding new manufacturing technologies to our processing portfolio. A good example is 3D printing, a rapidly developing and highly disruptive manufacturing technology that is expected to change much of the way business is done. This presentation will outline some of Scion's products, materials and technologies targeting the use of bio-based resources resulting in new functionalities such as lighter weight, water resistance, durability, or enhanced biodegradation. By building on features designed by nature, we aim to develop sustainable products that will meet the demands of the global market place.

Biography

Dawn A Smith is the Research Leader of Polymers and Composites at Scion in Rotorua, New Zealand, where she has been working for the past six years. Scion is the New Zealand government-owned research institute that specializes in science and technology development for forestry, wood product, wood-derived materials and other biomaterials. Her team has expert capabilities in polymer synthesis, characterization and compounding of polymers, with a focus on renewable systems. She has worked for nine years in a Biomedical Device Industry in R&D and new product development (CIBA Vision/Novartis). She has done her PhD in Polymer Science from the Institute of Material Science, University of Connecticut, USA.

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