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## R&D WORKS – JUNE 2014

Welcome to this month's edition of the R&D Works newsletter.

Our stories include research into a wide variety of new products including ultra-strong cellulose fibres achieved by spinning filaments from cellulose fibrils, biodegradable plastic bags using lignin from wood; using oil from Mallee trees for the production of an aviation grade biofuel; and the recent release of the "Timber due diligence" website that provides guidance tools in relation to the Illegal Logging Prohibition Amendment Regulation that comes into force in November.

I hope you enjoy reading about these research projects and the potential benefits they can bring to our industry.

Ric Sinclair  
Managing Director  
FWPA

## MAIN NEWS



### Help for businesses to comply with Australian illegal logging laws

On 30th November 2014 the Illegal Logging Prohibition Amendment Regulation comes into force. The Regulation and its associated Act prohibits the import into Australia of illegally harvested timber as well as the processing of illegally harvested raw logs, and is similar to legislation operating in Europe and the United States.

It is therefore vital that businesses understand their obligations and what they must do to comply. To assist with this the Timber Development Association (TDA), with support from industry via FWPA (Forest & Wood Products Australia), has developed a suite of tools and guidance for both

**Project PNA252-1112**

[\(more\)](#)



## Commercialisation of cellulosic nanomaterial

The U.S. Endowment for Forestry and Communities has announced a Request for Proposals to advance the commercialisation of cellulosic nanomaterial through P3Nano – a public-private partnership founded with the USDA Forest Service Forest Products Laboratory. The partnership has dedicated about \$3 million to fund proposals that rapidly advance the commercialisation of this promising technology through application in green products of the future. P3Nano will accept proposals from any qualified individual, university, company, or research organisation.

[\(more\)](#)



## Greenhouse gas benefits of wood pellet trade

Power utility companies in the United Kingdom are using imported wood pellets from the southern region of the United States for electricity generation to meet the legally binding mandate of sourcing 15% of the nation's total energy consumption from renewable sources by 2020.

[\(more\)](#)

## NEW PRODUCT INNOVATIONS



## Transforming offcuts into a biodegradable packaging material

Scientists have discovered a way to transform offcuts of wool and wood into biodegradable packaging material, which could help reduce the world's plastic consumption.

The unlikely marriage is thanks to work done at Deakin University's Institute for Frontier Materials. The university's Dr Nishar Hameed said humans consumed more than 100 million tons of plastics annually. This new processes will instead lead to more biodegradable materials being used.

[\(more\)](#)

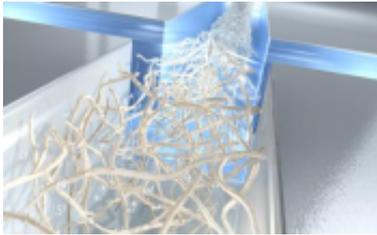
## New sugar extracting demo plant

Canadian based Port Hawkesbury Paper hopes to move ahead with a demonstration sugar extracting operation within a year.



The mill has commissioned an engineering study that is nearly complete for the plant, which would be located at the Point Tupper mill site.

[\(more\)](#)



## Stronger than steel: scientists spin ultra-strong cellulose fibres

A Swedish-German research team has successfully tested a new method for the production of ultra-strong cellulose fibres at DESY's research light source PETRA III. The novel procedure spins extremely tough filaments from tiny cellulose fibrils by aligning them all in parallel during the production process.

[\(more\)](#)



## Study shows mallee based jet fuel has firm roots

New research suggests biofuel made from oil mallee trees could be a viable source of jet fuel, offering a glimmer of hope for growers in Western Australia who planted the trees in large numbers in the past two decades.

A two-year study published by the Future Farm Industries Cooperative Centre (CRC) concludes that jet fuel made from the mallee tree will meet strict sustainability criteria determined by the Roundtable for Sustainable Biomaterials and will be suitable for commercial flights according to the American Society for Testing and Materials.

[\(more\)](#)



## Plastics to dust: easy-to-compost plastic bags move closer to mainstream

US based cycleWood Solutions have developed biodegradable plastic bags using lignin, a natural polymer that helps form the cell walls of plants. The bags can be composted just like any other plant-based material and will biodegrade in 180 days.

The process is speeded by the structure of the polymer, the composting process, and the addition of another biodegradable polymer with the lignin. "Lignin gives the plastic the needed strength," said chief scientific officer Wolfgang Glasser.

[\(more\)](#)

## Wood-waste bio-fuel could transform shipping industry

Aston University scientists are involved in the ReShip project,



which will use low quality wood waste, chippings and un-merchantable wood to produce new bio-fuels. Sustainable bio-fuel made from forest wood waste could not only help transform the shipping industry, but also reduce global greenhouse gas emissions.

[\(more\)](#)

## TIMBER CONSTRUCTION AND DESIGN



### Termite genome lays roadmap for 'greener' control measures

A team of international researchers has sequenced the genome of the Nevada dampwood termite, providing an inside look into the biology of the social insect and uncovering new genetic targets for pest control.

Michael Scharf, a Purdue University professor of entomology who participated in the collaborative study, said the genome could help researchers develop control strategies that are more specific than the broad-spectrum chemicals conventionally used to treat termite infestations.

[\(more\)](#)

## OTHER INFORMATION



### Aussie honey good for gut health: new research uncovers prebiotic qualities

A world-first study has discovered that Australian eucalypt honey has prebiotic qualities, meaning that regular consumption could improve gut health.

Prebiotic foods stimulate the growth of gut bacteria that contribute to human health and reduce the growth of deleterious gut bacteria. Prebiotic foods are not digested by human enzymes, but reach the large intestine intact and act as a food source for beneficial bacteria including bifidobacteria and lactobacilli.

[\(more\)](#)



### Pine bark substance could be potent melanoma drug

A substance that comes from pine bark is a potential source for a new treatment of melanoma, according to Penn State College of Medicine researchers.

Current melanoma drugs targeting single proteins can initially be effective, but resistance develops relatively quickly and the disease recurs. In those instances, resistance usually develops when the cancer cell's circuitry bypasses the protein

that the drug acts on, or when the cell uses other pathways to avoid the point on which the drug acts.

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