Forest&Wood Products Australia
Knowledge for a sustainable Australia

R&D works.

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R&D Works – December 2015

Welcome to our December edition of the R&D Works newsletter. This month our stories includes two stories on UAVs the first on the potential benefits on their use in forward-looking infrared in firefighting and a second in relation to forest conservation in tropical regeneration projects; a new study into cellulose-based 3D printable construction materials; a remote controlled robotic tree-felling machine designed to improve forest workplace safety; and an update on the recent FWPA R&D project call that has resulted in the submission of 27 project proposals.
I do hope you enjoy reading about these exciting research projects and their applications.
The FWPA office will close on Thursday December 24th 2015 and reopen on Monday 4th January 2016.
I wish you a safe and happy holiday season.

Chris Lafferty
R&D Manager
FWPA

MAIN NEWS

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FWPA call for R&D project funding proposals closed 30 October

In September FWPA invited the submission of detailed research proposals for projects commencing from 1 March 2016 addressing published FWPA industry research priorities.
The round closed on 30 October and a total of 27 project proposals were submitted across a wide range of topics.

Read more

Project launched to 3D print houses with cellulose

While the construction industry today depends a great deal on the use of wood and wood products, researchers in Sweden may be able to change the entire landscape of construction via a unique 3D printing technology.
Read more

UAVs and improving cost effectiveness of current forest fire fighting

While there is increasing concern about the danger posed by flying unmanned aerial vehicles (UAVs) near forest fire fighting activities, the use of the technology by the firefighters themselves has potential.
Read more

Novel scanning technology to assess wood qualities

Developed and built in-house, Scion's new 'DiscBot' is a novel scanning technology designed to assess a range of wood properties that affect the quality of sawn timber and other end products. The automated disc scanner uses a robot to move wood discs past different sensors, which capture information on wood density, microfibril angle, chemical composition and spiral grain angle.
Read more

FOREST GROWING

Drones to help improve forest conservation

Drones could be about to transform forest conservation by monitoring forest regeneration projects in the tropics. Drone-based monitoring was tested recently as part of a study by the University of Maryland and University of California, Santa Cruz, together with the Organization for Tropical Studies in Costa Rica.
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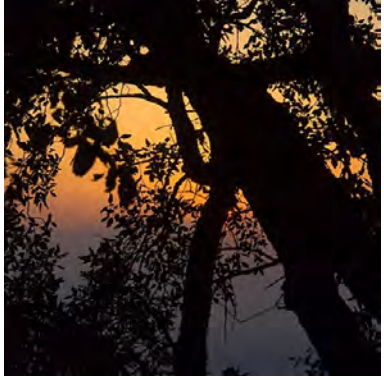
Carbon accounting in the



Eucalyptus forests of South-Eastern Australia

The aboveground carbon (AGC) storage of open Eucalyptus forests is currently unknown, yet they are estimated to account for almost 25% of all Australian forests and about 60% of forests in Victoria.

Read more

Using remotely sensed auxiliary data for forest inventories

Over the past decades it has been shown that remotely sensed auxiliary data have a potential to increase the precision of key estimators in sample-based forest surveys. A new University of Helsinki study has investigated how the data can be used for improving both the design and the estimators in sample-based surveys.

Read more

WOOD HARVESTING TRANSPORT AND LOGISTICS

Improving accuracy of kinematic positioning under forest canopies

Harvester heads now enable detailed roundwood data to be collected during harvesting operations. This data can be used to improve the efficiency of wood procurement and also replace a number of field-based measurements.

Read more

Robotic tree feller to improve operational safety

The forestry industry in New Zealand has unveiled a robotic tree logger to improve operational safety, reduce injuries and boost production. Future Forests Research (FFR) chief executive Russell Dale described the technology as a world leader which would go a long way to reducing forestry accidents.

Read more

NEW PRODUCT INNOVATIONS

New process for creating ultra-low density composites with wood

Ultra-low density composites (ULDC) are made from composite materials that have a very low weight per unit volume. This is a significant advantage in a range of applications, including the thermal and acoustic insulation materials used in construction and other industries.

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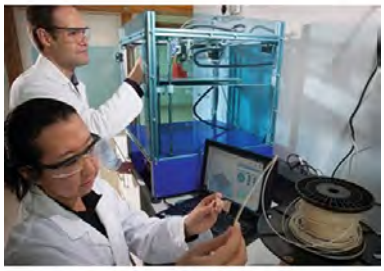

Reconstructing biomass by 3D printing

An investment in 3D printing technologies enables Scion to develop a range of new bioplastics for use in these technologies, such as filaments (thin strands of material), powders and fibre reinforced filaments.

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OTHER

Robots can build your house in just two days

A West Australian company has a robot they say can lay 1,000 bricks per hour and build the frame of an average house in under two days. The robot is still in prototype stage, but Fastbrick Robotics is hoping to bring a commercial machine onto the market within the next couple of years.

Read more

Forest-mapping instrument for space station passes major milestone

A laser-based instrument for mapping the 3D structure of Earth's forests has passed a major milestone toward deployment on the International Space Station in 2018. The Global Ecosystem Dynamics Investigation (GEDI), led by College Park from the University of Maryland, successfully transitioned to "Phase B," moving from requirements development and mission definition to preliminary design

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Paper tubes make stiff origami structures

From shipping and construction to outer space, origami could put a folded twist on structural engineering. Researchers from the University of Illinois, the Georgia Institute of Technology and the University of Tokyo, have developed a new “zippered tube” configuration that makes paper structures that are stiff enough to hold weight yet can fold flat for easy shipping and storage

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