The CRC Wood Innovations has built up considerable IP platforms to support its technology packages. The platforms vary but generally consist of patents, know-how and designs.

Readers of this newsletter will be aware that the CRC has already entered into commercialisation agreements for two of its packages: wood bending and preservation. We aim to have another four packages commercialised before June 2008.

It is, of course, not prudent to discuss our know-how and our designs in this public forum. But I thought that it was timely to outline the features of our patent portfolio that are already in the public domain.

Tom Spurling
Chief Executive Officer

The CRC patent portfolio

The CRC has maintained a patent portfolio since it commenced in 2001. It has an annual budget of around $100,000 to maintain this portfolio.

A key patent for a number of the platforms is that entitled:

**A method for increasing the permeability of wood**
Peter Vinden, Francisco Javier Romero and Grigory Torgovnikov

*Abstract*

*A method for increasing the permeability of wood which comprises subjecting wood with a moisture content (based on dry weight) of at least 15% to microwave radiation at a frequency (f) in the range of from about 0.1 to about 24 GHz with a power intensity (p) from about 10 W/cm² to about 100 kW/cm² for a duration of from about 0.05 to about 600 seconds to cause water in the wood to vaporise resulting in an internal pressure in the wood such that the permeability of the wood is increased by partial or complete destruction of ray cell tissue, softening and displacement of wood resin, formation of pathways in the radial direction of the wood and/or by creating, on the base of destroyed rays, cavities in the wood, said cavities being primarily in radial-longitudinal planes of the wood, and wherein the overall integrity of the wood is substantially maintained. A wood-based material may be formed having a permeability which is at least 5 times that of the untreated wood.*
Our other microwave treatment patents are:

**Process for the treatment of wood**  
Peter Vinden

*Abstract*

A method of microwave treatment of wood with a moisture content (based on dry weight) of at least 12% for rapid drying and stress relief which includes determining an area of the wood that is not to be treated, selectively subjecting a surface of the wood outside said determined area to microwave radiation at a frequency \(f\) in the range of from about 0.1 to about 24 GHz to provide a modified wood zone having increased permeability relative to the untreated wood, wherein said zone is located in an exterior shell of the wood and has wooden rays directed from the core of the wood to the irradiated surface.

**A method of microwave treatment of wood**  
Grigory Torgovnikov and Peter Vinden

*Abstract*

A method of microwave treatment of wood with a moisture content (based on dry weight) of at least 12% for rapid drying and stress relief which includes determining an area of the wood that is not to be treated, selectively subjecting a surface of the wood outside said determined area to microwave radiation at a frequency \(f\) in the range of from about 0.1 to about 24 GHz to provide a modified wood zone having increased permeability relative to the untreated wood, wherein said zone is located in an exterior shell of the wood and has wooden rays directed from the core of the wood to the irradiated surface.

The next patent covers the Vintorg/Torgvin process:

**Modified wood product and process for the preparation thereof**  
Grigory Torgovnikov and Peter Vinden

*Abstract*

A process for the preparation of a modified wood product, the process comprising: modifying moist wood by subjecting the wood to microwave radiation having a microwave energy of from 100 to 4000 joules/cm\(^3\) and a frequency \(f\) of from 0.1 to 10 GHz for a period of from 0.1 to 100 seconds to form a plurality of cavities disposed in radial-longitudinal planes of the wood, at least some of the cavities being interconnected by channels in the radial, tangential and/or longitudinal directions of the wood, drying the modified wood; impregnating the modified wood with an adhesive component; and applying pressure to the impregnated wood to at least partially close the cavities and channels formed during the modification step and to adhere wood fibres with the adhesive component.
Our pyrolysis technology is covered by the following patent:

**Process for the recovery of low molecular weight phenols, furfural, furfural alcohol and/or cellulose-rich residues**

Branko Hemescec and David Butt

Abstract

A process for the recovery of furfural, furfuryl alcohol, low molecular weight phenols and/or cellulose or a cellulose-rich material from a lignocellulosic material comprising: feeding a carrier gas into a reaction chamber to facilitate a fluidised bed effect and to carry reaction products and residues away from the reactor via entrainment; introducing a feedstock comprising particulate lignocellulosic material of a predetermined particle size into the reaction chamber; degrading the feedstock in the reaction chamber under an oxygen-containing atmosphere at a temperature of from 250 °C to 320 °C; and quenching the degraded feedstock and carrier gas to deposit solid residues entrained in the carrier gas and to condense a liquid product.

Finally, some of our preservation technology is covered by the following patent:

**Boron-based wood preservatives and treatment of wood with boron-based preservatives**

Peter Vinden and Francisco Javier Romero

Abstract

A process for treating wood comprising applying to the surface of the wood a boron based preservative which reacts with moisture within the wood to form a boron compound and alcohol and subjecting the wood with the applied preservative to a substantially moisture-free and enclosed environment for a period sufficient for the applied preservative to be absorbed into the wood and to produce the boron compound on reaction with the moisture in the wood and for the alcohol by-product of the reaction to be adsorbed within the wood structure.

**New forestry education website**

Federal Forestry Minister, Senator Eric Abetz, recently launched a new online resource which provides young Australians with a portal to forest education. The National Association of Forest Industries, and the National Forest Education and Awareness Network (NFEAN - a group of forest educators from each forestry region in Australia) developed the new website “Australian Forests”.

“The website provides access to comprehensive information on the concept of sustainable forest management, including how forest ecosystems are managed and how renewable forest resources are produced,” said NAFI’s President, Dr Douglas Head.

You can check out this website at: www.australianforests.org.au
Launch of the FPC and University of Western Australia joint venture

On July 27th the University of Western Australia and the Forest Products Commission launched their Joint Venture at the impressive Poll Residence in Dalkeith.

With over 100 guests on a wet Friday afternoon the interest in initial research projects undertaken by the Joint Venture were displayed and created a lot of interest.

In particular the much talked about "shimmer chairs" in jarrah and karri were very impressive.

Guests included The Hon Kim Chance, Minister for Forestry in the Government of Western Australia, Professor Alan Robson, the Vice Chancellor of UWA, guests from the WA forestry, furniture and building industries, Peter Vinden and Tom Spurling.

The ‘green tank’ is now operational

The CRC has acquired a second hand high pressure treatment tank. It has been fully restored and is now in operation. This will enable our researchers at the ACAWP to do conventional preservation treatment of timber when required.
Project Reviews

The penultimate project reviews for this CRC were held at Prahran on September 6th and 7th. The modifications to the research provider budgets will be presented to the September Governing Board meeting.

The main conclusions from the meeting were that the research program of the CRC, as promised in the Commonwealth agreement, will be more than 90% completed before the end of the CRC and that the commercialisation of the CRC’s technology packages is on track to exceed the expectations of the Commonwealth Agreement.

As usual Dawn Gager and her team did an excellent job in organising the review.

Finally

Many of you will know that presbyopia is the inevitable loss of the ability to focus on near objects, which means that most people over the age of 45 need reading glasses.

The ageing population means that presbyopia will soon affect over 40% of the population. The Vision CRC is developing a revolutionary gel lens system which would replace the lens in an ageing eye, restoring total and continuous vision for the enormous presbyopia and cataract markets.

This development was not in time for my cataract operation, but my rigid lens implants are going well.