One of the CRC’s PhD graduates, Dr Lyndall Bull (right) has been developing a wood and paper products skills shortage strategy for DEST, NAFI and A3P. The final report has not yet been issued but the broad outcomes are available on the NAFI website. She identifies shortages in cross sector skills as well as in industry specific skills. The industry specific skills include forest workers (silvicultural), wood machinists, foresters, harvest machine operators and saw doctors.

DEST has also released its ‘Audit of science, engineering and technology skills’ which predicts a shortage of 20,000 scientists and engineers by 2012-13. Both of these reports reinforce the importance of our education and training programs.

Tom Spurling  
Chief Executive Officer

**FURNITEX 2006**

One of our participants is the Furniture Industry Association of Australia (Vic/Tas). It is responsible for Australasia’s largest furniture Trade Fair, FURNITEX. This is a long established Trade Fair that continues to develop and grow in stature from year to year. It is co-located with DECORATION + DESIGN. The two events involve more than 500 Exhibitors and attract in excess of 17,000 Trade Visitors over 4 days.

The CRC and Wood Shapes had a stand at FURNITEX. Thanks to John Osmelak for securing a premium spot for us. The stand was organized by Barbara Ozarska and Lotars Ginters. Amerind Forest Products Pty Ltd provided the veneers for the stand and Hygrade Waterjet Profiling Pty Ltd the CNC routed CRC logo.
The Swinburne Design Centre designed, developed and installed the stand. Thanks also to Lyndon Anderson and Michelle Hyams (nee Pataki) for providing their furniture prototypes. The stand looked good and attracted a lot of interest.

On Friday 21st July the Central Highlands Agribusiness Forum sponsored a breakfast meeting to update the furniture industry on the progress of the wood bending technology. Diane Tregoning (General Manager, Black Forest Timbers Pty Ltd), Michelle Hyams, Graham Allsop (a manufacturing consultant) Jarrod Lim (a designer from Swinburne) and Luke Juniper all made excellent presentations. There was considerable interest and enthusiasm from the manufacturers in the wood bending technology.

Thanks to all who staffed the stand over the four days of the exhibition.

**Wood Shapes Pty Ltd**

Wood Shapes Pty Ltd and Marand Precision Engineering are making considerable progress in designing the automated wood bending machine.

As mentioned last month, Luke Juniper has been employed by the company to transfer his wood bending know how and provide expertise to Marand. Luke’s work is proving very valuable and he will play a key role during the commissioning of the machine and in the production of shaped components. Our team of CRC experts in the microwave modification and drying of wood from the University of Melbourne and Industrial Research Institute Swinburne are also providing valuable assistance.

The first stage of works (concept definition) is almost complete. Following this, detailed drawings and specification will be developed.

**Microwave modification of hardwoods for improved quality**

This important key project is proceeding according to plan.

Both the blackbutt and messmate timbers have been microwaved processed and are now in the kilns with the control sample at Boral Timbers and Gunns respectively. Drying will be completed by the end of August after which the boards will be sliced for analysis.

The CRC is now processing the third species in this trial, mountain ash timber from Black Forest Timbers and Neville Smith Timbers.

Many people are putting in a significant effort on this project and we are excited by the potential to use microwaves to improve the quality and value of increasingly scarce Australian hardwoods.
**Pyrolysis project**

The CRC is now preparing the project contract with the Sugar Research Institute where it will receive approximately $180,000 over two years to assist its efforts in comparing its fast pyrolysis science against the existing state of art 'Supryield' furfural process.

Recently, we have also made a presentation to a supplier of turn key particle board plants who have expressed interest in adopting this technology. Additional information is being exchanged with this company and our aim is to enter into a project where a pyrolysis reactor would be customised for the larger substrate material that this company utilises in their plants.

**Australian Centre for Advanced Wood Processing (ACAWP)**

Contract research is being completed at the ACAWP for an overseas timber processor where microwave modification and envelope preservative treatment of sitka spruce is underway, designed to achieve an H4 rating as well as minimum strength loss.

The work is quite complex as only microwave modification of the outer layer of the timber is being targeted. If successful, the client has expressed interest in getting an independent costing for a microwave plant with a view to acquiring a plant.
Science

The CRC Wood Innovations has concentrated on developing technology packages ready for commercialisation. Behind these packages is excellent science published where possible in refereed journals.


This paper presents a method for calculating the complex dielectric permittivity of an anisotropic wood structure at microwave frequencies. They developed a model for describing the 3D wood structure and worked out a numerical method for calculating the effective dielectric constant of the wood. Their method gives values in good agreement with experimental values.

This paper not only advances fundamental knowledge of the properties of wood but will also be useful in assisting in the design of microwave applicators.

Finally...

We don’t talk about the finance and administration of the CRC Wood Innovations very much because it works very well. This is due to the knowledge and diligence of our General Manager, Dawn Gager (below) and the oversight given by Neil Morrison, a Director of IWM Centre Management Pty Ltd. Allison Roper and our new recruit, Sunny Munn provide great support.