The Governing Board of the CRC held its 3rd 2006 meeting at the Highett laboratory of CSIRO Manufacturing and Materials Technology on the 18th October. We were pleased to welcome Catherine Murphy to her first meeting. Some of the issues discussed are summarised in this newsletter.

Prior to the meeting Dr Voytek Gutowski took Board members on a tour of his well-equipped laboratory.

The next meeting of the Governing Board will be held on Tuesday 5th December at Swinburne University of Technology, Hawthorn Campus.

Annual Report

The Governing Board approved the 2005-06 Annual Report. Thank you to all who have contributed to this year’s report.

For the next Annual Report we need a supply of photos, graphs, models to make sure that we have current images in the report.

This year, along with other 7th round CRCs that are not submitting ‘new-from-old’ bids, we are required to submit a ‘Track Record’ document with our Annual Report.

Both the Annual Report and the Track Record document will be available on our website:
www.crcwood.unimelb.edu.au

Budget and Project Reviews

The Governing Board agreed that we should conduct a Project and Budget Review in the last quarter of 2006. This will follow the process set out in the Centre Agreement. The review panel will be the CRC Management Committee. One objective of the review is to find whether there are any gaps in our science which are an impediment to commercialising our technologies. If there are the Governing Board will consider ways of funding that research.

We hope to complete the review process before the next Governing Board meeting in December.
Research Presentation

Associate Professor Barbara Ozarska made a presentation to the Board on the ‘Development of Microwave Wood Bending Technology’. She outlined the market drivers for a more efficient wood bending technology and explained in detail how the CRC had developed its technology. The CRC technology is soundly research based with a high level of collaboration between projects, research providers and with a healthy emphasis on student involvement.

CRC research studies covered...

- optimal softening conditions for bending solid wood using microwave heating,
- changes in wood structure during bending,
- mechanical behaviour of wood during bending,
- comparative study on steam bending of wood,
- microwave drying of bent components,
- designing wood products using bent components,

...and Barbara gave a brief description of each area.

Barbara emphasised that the while the research was of a very high academic standard little of it would be published in the open literature until the commercialisation was complete.

Commercialisation Update

Jim Grigoriou gave the Governing Board a progress report on the commercialisation of the CRC’s seven most prospective technologies. The following is a brief summary of Jim’s presentation.

Wood Bending

Path to market: Wood Shapes Pty Ltd has contracted Marand Precision Engineering to build the first machine. There are three stages of works:

1. Concept design – completed
2. Detailed drawings and specifications

Initial daily production capacity is estimated at 240 components. Relationships are being formed with lead customers.

Enhanced Adhesion

This technology is a water based primer that can increase the bond strength in adhesive joints by up to 500%.

Path to market: License to a manufacturer and distributor of sealants and adhesives.

Currently evaluating the technology on rubberwood. Results to be available at the end of November.
**Improved Pyrolysis**

Pyrolysis is the use of heat to break large molecules into small molecules.

The CRC technology is a clean conversion process, using heat and catalysts, for recovering furfural, furfuryl alcohol, phenols and/or a cellulose rich material from a lignocellulose material.

There is a market opportunity to add value to waste material from the sugar and timber industries – extract commodity chemicals before material used for ethanol production.

Funding from SRDC to benchmark technical and economic efficacy against current process has been secured. Preliminary results will be available in November 2007. If the project is successful, the plan is to establish a Research, Development and Commercialisation Agreement between CRC Wood Innovations, QUT and the Sugar CRC to further advance to commercialisation of the technology.

**Hot Wood Treatment Process and Fast Treatment Plant (Wood Preservation)**

Path to market: License to TimTech Chemicals for Australia and NZ.

The fast treatment plant and improved process provides a rapid treatment that can be consistently controlled over many cycles. An international company is negotiating an agreement with TimTech with a view to installing up to eight plants.

Five – seven percent (5-7%) of the capital cost of building each plant will accrue to the CRC. A second fee will be earned for use of the CRC’s treatment schedules (monthly fee, for a set period reflecting the value created by the treatment schedules).
**Microwave modification of Timber**

This technology is applicable to two product classes:

1. Appearance grade hardwoods. Microwave modification used to improve drying quality and reduce drying time.

A large experiment underway to test three of Australia’s major hardwood species in collaboration with some major timber companies in Australia. The project Steering Committee is chaired by the FWPRDC’s Dr Glen Kile.

First stage of works, (Calibration Trial) applied five microwave energy levels to blackbutt, obliqua and regnan boards, followed by kiln drying with controls. First samples now being returned to Creswick for image analysis.

Next stage (Treatment) will select the most appropriate microwave regime and treat larger sample to verify the efficacy of microwaves to improve drying quality.

This proof of concept project is of considerable interest to Australia’s hardwood processors.

2. Improve permeability of the corewood in lower value timbers

Microwaves used to create voids’ or checks in corewood making it permeable and treatable.

Technical proof of concept and economic viability studies now underway to prove this technology for a number of local and international companies.

**Vintorg**

Product: Microwave modified low value timber filled with resin to form an engineered wood product.

Koppers Wood Products is preparing a research brief for the CRC to apply Vintorg to the power pole industry.

**Growth stress meter**

Beta model being fabricated with help of lead users.

Device to be field tested early 2007.

Results from trials and opinion of lead users to guide future strategy including our path to market.

Intellectual property will be know-how (algorithms) which we would licence to an instrument company.
International Seminar and Workshop: Challenge from China

FIAA Vic/Tas in conjunction with the University of Melbourne and the CRC organized an international seminar on October 23rd and a strategic workshop on October 24th.

The speakers at the seminar were Jesus Navarro from AIDIMA (the Spanish furniture industry research association) and Torsten Lihra from Forintek (Canada’s wood products research institute). They both emphasized the importance of within country collaboration between companies and international collaboration between countries in Europe, North America and Australasia.

2007 Program Meeting

We plan to hold the 2007 Program Meeting following the February 2007 Governing Board meeting which is scheduled for February 20th at Creswick. The Program Meeting would commence in the afternoon of the 20th and conclude by 3.30 pm on the 21st.

We propose to hold a Participants Meeting after the Board meeting on February 20th. The purpose of that meeting is to discuss the CRC wind-up strategy.

Finally

The Prime Minister's Science, Engineering and Innovation Council (PMSEIC), of which I am a member as President of FASTS, invites outstanding young scientists and engineers to talk about their work and raise issues concerning their work and career development.

We have nominated Dr Lyndall Bull to speak at the December meeting.

Established and supported under the Australian Government’s Cooperative
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