

**Minutes of the 4<sup>th</sup> Management Committee Meeting**  
**COST Action FP0802**  
**Experimental and Computational Micro-Characterisation Techniques**  
**in Wood Mechanics**  
**Helsinki (Finland), 25/08/2011 from 15:40-17:20**

**0. Welcome to participants**

The following 12 of the 24 countries having accepted the MoU of the Action were represented at the meeting:

Austria, Denmark, Finland, France, Germany, Greece, Latvia, Romania, Slovenia, Sweden, Switzerland, Turkey

**1. Adoption of agenda**

The agenda was adopted by the MC. Martin Greimel asked the MC members to report on their activities to promote the Action in their home country under item 13 AOB.

**2. Minutes of last meeting**

The MC approved the minutes of MC3 held in Hamburg, Germany on October 7, 2010.

**3. Matters arising**

The MC recorded in the minutes that it had previously approved the following MC decisions:

- approval of final budget & support grant for WS “Mixed numerical and experimental methods applied to the mechanical characterization of bio-based materials”, Apr 11, Vila Real amounting to € 1,020
- approval of revised budget for 2011, budget increased by EUR 6,100 to EUR 121,100

**4. Report from the COST Office**

The new science officer of the Action is Ms. Xin-Ying Ren. She replaces Melae Langbein who is currently on maternity leave.

The MC is asked to think about a follow-up of the Action. There are a lot of open questions which need coordination. A possibility of joint networking would be a new COST Action. The next relevant call deadline is March 1, 2012. Especially the FPS domain needs more proposals in the future. In addition, there are interesting new Actions which have already been approved or will be approved in the near future.

There are also interesting FP7 calls. The call on EraNet plus which is the continuation of WWN might be of great interest. There is only one call with a budget of € 25-30 Mio.

**5. Progress report****5.1 Working groups**

*WG1 – Wood microstructure:* Lisbeth THYGESEN

*WG2 – (Hygro-)mechanical properties:* Michaela EDER

### *WG3 – Modelling of the material behaviour: Kristofer GAMSTEDT*

Extensive reports on the activities in the working groups were given in an extra session at the workshop in Helsinki, in which the state-of-knowledge was reviewed and remaining knowledge gaps pointed out.

Lisbeth THYGESSEN recapitulated the main objectives of the action, as laid down in the MoU, and reported on related activities in WG1. Aside of numerous presentations at the workshops, there were two Training Schools and about 9 STSMs dedicated to microstructural aspects. By means of examples, she sketches achievements in the thematic scope of WG1. She concludes that good progress has been made in relation to microstructural characterization and wood-water interrelations, while the use of modified wood as a tool to understand native wood, environmental effects on wood structure and behaviour, and the molecular origin of time-dependent material behaviour were hardly dealt with. She particularly points out a lack of integration of computational methods, experimental methods, and new characterization techniques, which she formulates as main aim for the last year of the action.

Michaela EDER and Olivier ARNOULD jointly reported about the current state in WG2. They assessed the progress of the action in relation to (i) the material, (ii) experimental micromechanical characterization, and (iii) effect of moisture. In relation to the material, modification techniques, targeted towards improvement of material properties, gained particular attention. From a methodological point of view, the potential of single fiber testing was assessed, and major advancements in the field of nanoindentation and AFM as mechanical characterization techniques at cell wall scale were achieved. In relation to moisture, there are very active, ongoing discussions. Finally, Michaela EDER pointed out the potential of combined methods and cited the long list of STSMs carried out in relation to WG2.

Kristofer GAMSTEDT sketched the purpose of WG3, particularly in relation to the other WGs, and listed activities in the framework of WG3 (WG meetings at the annual workshops, STSMs, and two focussed meetings on modelling in Krakow and Vila Real). Since one of the main aims of the action is to integrate the 'two worlds' of experimental and numerical techniques, he focuses on possible strategies to achieve that. He presents examples of combined experimental-numerical methods, which are particularly promising in this context.

A discussion among workshop participants on how to improve cooperation between scientists from different fields and on how to enhance integration of different methods concluded the series of WG reports.

### **5.2 Events**

The **workshop on “mixed numerical and experimental methods applied to the mechanical characterization of bio-based materials”** was held on April 27-28, 2011, Vila Real, Portugal. 36 scientists from 14 countries were giving 13 oral presentations and 10 posters. The number of ESRs participating was enormous, 40 ESR = 83 %.

Highlights:

- presentation and discussion of strategies on how to combine experimental and numerical approaches in investigating mechanical and transport properties of wood (and other biological tissues)

- successful application examples from other fields (plenary lecture by Stephane Avril, leading scientist on full field displacement measurements on soft tissues)
- intensive discussions, particularly among young researchers

The **Training School on “X-ray tomography”** took place on August 15-19, 2011 in Jyväskylä, Finland and was jointly organized by COST Action FP0802 and Jyväskylä Summer School. 45 applications from 17 countries were received. 27 trainees from 11 countries were accepted from which 16 have received financial support by COST. Within the Training School introductions to X $\mu$ CT equipment, physical basis/measurement principle, X $\mu$ CT image processing (pre-processing, segmentation, analysis), available image processing algorithms and tools, and application of X $\mu$ CT to wood were given.

#### Highlights

- introduction into rapidly evolving field
- training at excellent equipment
- training by experts in the field, focus on knowledge beyond textbook contents based on personal experience

The MC unanimously approves the Training School support grant amounting to € 540. The MC asked Martin Greimel to put forward the request to COST to increase the support grant for Training Schools and also workshops in the future which is currently only EUR 30 per participating person.

The **workshop on “hierarchical structure and mechanical characterization of wood”** took place on August 24-25, 2011, Helsinki, Finland. 37 abstracts had been submitted. The final scientific program consisted of 2 keynote lectures, 17 oral and 14 poster presentations. In a thematic session on thermo-hygro-mechanically (THM) modified wood, one keynote and 3 oral presentations were given. 56 scientists from 16 different countries registered. 31 Early Stage Researchers (55 % of all participants) participated.

#### Highlights:

- thematically focused sessions on THM modified wood in cooperation with COST Action FP0904
- WG-reports: state-of-the-art review, discussion of remaining knowledge gaps

#### Final budget:

Room and technical equipment rental	€ 560
Photocopying, printing of programme, Book of Abstracts	€ 990
Phone, fax, mailing costs, letters of confirmation	€ 0
Personnel	€ 1,705
Local transport	€ 0
Coffee breaks and light refreshment	€ 1,250
Meals / dinner	€ 4,355
Others	€ 200
<b>Total expenditure</b>	<b>€ 9,060</b>
Registration Fees	€ 7,350
COST	€ 1,710
<b>Total income</b>	<b>€ 9,060</b>

The MC approved the final budget of the workshop as well as the support grant amounting to € 1,710 (57 registered participants x € 30).

## 6. Action planning

### 6.1 Annual Progress Conference (preparation and/or feedback from DC)

Following the last FPS Annual Progress Conference held in March 2011 in Istanbul, Turkey the Domain Committee provided the following monitoring feedback to the Chair of the Action: *“The DC commented that the Action is well on track and running very smoothly. The high number of STSMs and the quality of the training school are viewed as outstanding by the DC. The DC commends the Action’s efforts towards interdisciplinarity (e.g. the joint workshop with IE601 and the key lectures given by high profile experts from other fields (bringing new knowledge and techniques into the Action)). The attempts to give gender balance and ESR participation high attention are well regarded by the DC. The Action’s intention to establish stronger links with industry during the upcoming period is noted as very important by the DC. The DC also commended the Action for already beginning to think about how to ensure continuity of the network beyond the end of the life of the Action.”*

Following the success of the Action, an additional budget of € 6,000 was granted for 2011.

### 6.2 Action Budget Planning

The MC approved the following items:

- Organisation support grant of up to € 3,000 for the Local Organiser of the *COST FP0802 Workshop* to be held in Edinburgh, UK, October 17-19 or 24-26, 2012
- Organisation support grant of up to € 3,000 for the Local Organiser of the *COST FP0802 Training School* to be held in Montpellier, France in 2012
- Organisation support grant of up to € 3,000 for the Local Organiser of the *Joint COST FP0802 & FP0904 Meeting* to be held in Delft, The Netherlands in 2012

Per registered participant € 30 support will be granted from COST.

Karin Hofstetter presented a proposal for the Action’s budget for 2012:

A. SUMMARY BUDGET	
(1a) Travel/hotel for joint meeting with FP0904 (Delft)	€ 8,800
(1a) Joint meeting support grant	€ 300
(1b) Travel/hotel for annual workshop (WG-&MC-Meeting) (Edinburgh)	€ 57,200
(1b) Workshop support grant	€ 2,400
(2) Short-term scientific missions	€ 15,000
(3) Travel/hotel for Training School	€ 12,200
(3) Training School support grant	€ 600
(4) Dissemination – publications	€ 0
<b>TOTAL SCIENCE EXPENDITURE</b>	<b>€ 96,500</b>

<b>B. SECRETARIAL SUPPORT</b>	
15 % of total science expenditure	€ 14,500
<b>C. TOTAL EXPENDITURE</b>	<b>€ 111,000</b>

The MC approved the Action's budget for 2012.

### 6.3 Action Planning (including meetings)

#### 6.3.1 Location and date of next meeting

The MC approved the following coming meetings:

<i>Date</i>	<i>city, country</i>	<i>type of meeting</i>
date to be defined	Delft, Netherlands	the Joint meeting with FP0904
date to be defined	Montpellier, France	Training School
Oct 17-19 or 24-26, 2012	Edinburgh, UK	Annual & final Workshop, WG-meetings, MC-meeting

The respective local organisers will send the necessary documentation to the Grant Holder at least ten weeks before the date of the meeting.

The joint meeting with COST Action FP0904 will be organised by Wolfgang Gard and Parviz Navi. From COST Action FP0802 ten persons will be reimbursed and the local organiser support grant for those people will be borne from the Action's budget.

The annual workshop will take place in Edinburgh, UK. It will be jointly organized by Forest Research, Napier University and University of Glasgow. The local organizers will be Barry Gardiner and Elspeth MacDonald. The format will be different from the previous workshops as it is the final one of the Action. As of the COST office, the main objectives are dissemination of the outcome to key stakeholders and to facilitate final evaluation by the evaluation panel. It requires that a final workshop of an action consists of:

- Half a day focused on dissemination main outcomes and impact of Action for the general audience (including stakeholders), either condensed in single session or spread throughout conference
- Half a day (min 3 hours) closed session with MC and evaluation panel (presentations by Chair and WG leaders, explaining how Action as a whole and individual WGs met objectives (from MoU) and delivered deliverables (both from MoU), outcomes and objectives, at least one success story
- 2 days scientific program (presentations from Action members, not more than 1-2 external 'invited expert' speakers)

Plans for dissemination session:

- Presentations based on review papers, content-related summary of activities in Action
- Presentation of senior member of Action, evaluating the achievements of the Action in relation to objectives and remaining questions and challenges
- STSM session

- Invitation of representatives from industry / associations / technology platforms to meeting
- Encouragement of (local) students to participate in workshop

Plans for the evaluation session:

- Presentations by Working Group leaders about findings/research work, pointing out particular activities in Action
- Report of Chair about outcome (papers, projects) and industrial background of work by individual participants (All participants are kindly asked to provide information for this report. According emails will be sent by Karin HOFSTETTER.)
- Summary of activities (workshops, STSMs, Training Schools, etc. – some numbers) and presentation of success stories by Chair
- Ideas for follow-up activities / continuation of network (European Society of Wood Mechanics, other COST Actions)

Martin Greimel suggested that in the evaluation panel taking place during the final workshop, the MC should show what has been achieved and also what has not yet been achieved. Staffan Svensson proposed to present also PhD students who participated in the Action and have now gone to the industry during the dissemination session.

## **7. STSM status, applications**

In 2009 and 2010 16 STSM were completed. In 2011, 13 applications were received. 11 STSMs were approved by the Steering Committee. As there is still budget available for 2011, an additional call will be launched with an application deadline on September 30, 2011.

## **8. Publications, dissemination and outreach activities**

The planned review papers will be published in “Wood Science and Technology”. The average length of each paper should be 46-50,000 characters incl. blanks. Lengths up to 60,000 characters seem acceptable.

Themes, authors, coordinators:

1. Spatially resolved micro-spectroscopy of wood and fibers  
*Lisbeth Thygesen (coordinator), Karin Fackler, Burgi Gierlinger*
2. Properties of fibers and fiber networks  
*Michaela Eder (coordinator), Joanna Hornatowska, Lennart Salmén*
3. Micro-tomography  
*Jan van der Bulcke, Ritva Serimaa, Markku Kataja, ... Lennart Salmén (coordinator)*
3. Mixed experimental and numerical methods  
*Kristofer Gamstedt (coordinator), Thomas Bader, Karin Hofstetter*
5. Wood/moisture interrelations  
*Emil Tang Englund, Callum Hill, Staffan Svensson, Karin Hofstetter (coordinator)*

Time schedule:

- September 2011: tentative list of authors and titles sent to editor of WST
- December 2011: completion of papers

- March 2012: completion of internal review
- April 2012: submission of papers to WST
- late 2012 / early 2013: publication of papers

COST in principle pays for the online access of review papers, however, the upper limit of the costs is not clear and will be discussed by Karin Hofstetter with Xin-Ying Ren at the COST Office. She will also ask Springer for an offer.

The 2012 IUFRO all division 5 conference, taking place in Estoril, Portugal, July 8-13, 2012 (<http://www.iufro2012.org/>) might be a good opportunity to disseminate the results of the Action.

## **9. Request for new members**

No new requests for new members.

In Norway, there are some people who are interested to get active in the Action and become a MC member, they are however blocked by the current, inactive members. Similar situations in other countries should be reported to the Action chair.

## **10. Promotion of gender balance and of Early Stage Researchers (ESR)**

The gender balance within the Action is:

- Steering Committee: 60 % female
- Management Committee: 25 % female
- Working Groups: 24 % female
- Attendance at workshop in Vila Real: 29 % female
- Attendance at workshop in Helsinki: 28 % female

Early Stage Researchers:

- Steering Committee: 40 %
- Management Committee: 19 %
- Working Groups: 37 %
- Workshop in Vila Real: 83 %
- Workshop in Helsinki: 55 %

## **11. Non-COST country participations**

The following institutions from non-COST countries have previously been approved as non-COST country participants in the Action:

- Hydro-Quebec, Canada (contact Louis Gastonguay)
- Scion, New Zealand (contact Chris Lenth)
- University of Canterbury, New Zealand (contact Clemens Altener);

## **12. Web news**

The Action webpage can be reached at <http://cost-fp0802.tuwien.ac.at>

In the public area information on MC- & WG-Members, STSM-information, minutes/presentations of MC- & SC-meetings can be found. Presentations of the workshops are to be included.

In the internal area (user name, password: to be requested from the Action Chair) STSM reports are included. The SC decided not to include a database for scientific publications and documents of coordinated research efforts in the webpage.

### **13. AOB**

The MC members briefly reported on the activities in their home countries.

The next MC meeting will take place in October 2012 in Edinburgh, UK in the framework of the annual workshop.

### **14. Closing**

The meeting closed at 17:30.

See the presentation of Karin HOFSTETTER (MC4\_Presentation\_Hofstetter.pdf) which constitutes a part of the minutes.