

COST Action FP 1005

WG2 (RHEOLOGY MODELLING) – Minutes of the meeting at Nancy, 2011
14th October 2011

Six action members were present in the meeting:

M. Graça Rasteiro – University of Coimbra, Portugal (WG Leader) - mgr@eq.uc.pt

Roland Zelm – Dresden University, Germany – roland.zelm@tu-dresden.de

Jean Claude Roux – Institut du Papier, Grenoble, France –

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Salaheddini Skali-lami, INPL, Nancy, France –

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Sanna Haavisto, VTT, Finland – sanna.haavisto@vtt.fi

Florin Ciolacu, Technical University Iasi, Romania - florinciolacu@yahoo.com

After a brief introduction of the members present, the group chose two members to act as deputy leaders:

Jean Claude Roux, INP, Grenoble, France

Roland Zelm, Dresden University, Germany

who will be proposed to the management committee.

Group discussion was directed, mainly, to the item proposed by the management committee:

“Definition of test cases including definition of geometries to be studied transversely by the WG members and by the different Working Groups.”

Regarding this point, the proposal of the group is to focus, as a first approach, on tests and modelling varying only the following variables:

- consistency
- fiber type
- velocity

Temperature will be fixed at 40 °C, and water quality will not be considered as a variable in this stage (only distilled water will be considered in the tests).

Regarding the aforementioned variables the proposal is to study the following ranges:

- consistency – 1 to 4%
- fiber type – hardwood and softwood bleached fibers. These fibers will be fully characterized (hydration rate, SR and coarseness, fiber length, crowding factor).
- Velocity – 1, 2 and 3 m/s.

Florin Ciolacu suggested that it would be very important to measure, for the test samples, the disruptive stress of the suspension plug, which can be done using the facilities of the University of Iasi in Romania. Evaluation of the disruptive stress of fiber flocs is also of importance for the modelling.

It was agreed that once the test cases had been defined among all the members, it would be important to measure the apparent viscosity of the test suspensions using the different measuring techniques available within WG 2.

This data could then be used in different modelling strategies (mechanistic approach or mixing approach), and to model different operations important for papermaking (refining or transportation).

Regarding test geometries the group agreed it would be difficult to fix a common geometry for the tests of the modelling approaches.

It was also agreed that, at a later stage, higher concentrations could be considered, as well as other fiber types, namely recycled fibers.

Maria Rasteiro informed the WG members about the Symposium on “***Rheology of Nano- and Natural Composites***”, included in the XVI International Congress on Rheology, where one of the focus is on the rheology of fiber suspensions. She invited WG members to participate in this symposium.

The group discussed, as well, the importance of attracting industrial partners to the COST action, namely to WG 2. We will prepare a text describing the objectives of WG 2 in relation with the Cost Action FP 1005, which will be proposed to the action executive committee, and later distributed by the WG members to possible industrial partners.

Finally, the group agreed that it would be more convenient to have the next WG meeting at the same time as the next MC meeting

Nancy, October 14th, 2011