

MINUTES

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Prof. Álvaro Ramírez-Gómez
Dept. of Mechanical, Chemical and
Industrial Design Engineering
Technical University of Madrid
Ronda de Valencia, 3
Madrid - SPAIN
Tel.: +34 91 3366837
Fax: +34 91 3365620
alvaro.ramirez@upm.es

Annual Meeting of the EFCE Working Party “Mechanics of Particulate Solids”
23.08.2014 in Prague, Czech Republic.

Abstract

The Annual meeting of the EFCE Working Party Mechanics of Particulate Solids (WPMPs) took place on August 23, 2014, 14.00h in Room Stella of the Clarion Congress Hotel, Prague, Czech Republic. The Meeting was held in conjunction with the 2014 CHISA Conference.

Prof. Jiří Zegzulka, Lucie Jezerská and Jan Nečas (VŠB Technical University of Ostrava, Prague) opened the meeting with a presentation on their institution and scientific activity. Prof. Andrea Santomaso (University of Padova, Italy), new elected member from PARTEC2013, followed with a presentation also on his institution and scientific activity.

Advances were presented on the current WP tasks as follows:

- 1) **K/λ Testing:** Prof. Massimo Poletto prepared a report on the progress of the K/λ Testing project. He summarized the motivation of the project and the activities carried out in the past on non-compressible free flowing materials and on compressible cohesive materials. From those experiments the conclusions were that: 1) twisting of the cell lid is the only procedure, with the proposed equipment to obtain reproducible data; 2) results are coherent with the Koenen ratio with non compressible powder and with DIN 1055 prediction with compressible powders.
- 2) **Validation of DEM Simulation:** Prof. Jin Ooi of The University of Edinburgh sent a report on the advancements of the **Multiscale Analysis of multiPhase Particulate Processes (T-MAPPP)** project (<http://www.t-mapp.eu>), funded for ~4.05 million EUR. This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no ITN607453, for the period 2014-2018. 12 PhD and 3 Post Doc positions will be trained.
- 3) **Wall friction project:** Some slides prepared by Dr Eddie Mc Gee of Ajax, Prof. Jin Ooi and Prof. Don McGlinchey of Glasgow Caledonian University on the state of the wall friction project were presented. Containing a summary of the status of the project: a) A statistical analysis with the previous data was carried out obtaining standard deviations of wall friction angles for each participant group; b) Acrylic Powder (homogeneous, hand sieved, inert) was chosen as a free flowing material (but trusted to be non segregating). However some experience reported difficulties with coarser free flowing materials. The next stage will consist in carrying out another round of tests with the fullest participation on a cohesive fine powder. **We need someone to supply a suitable powder and of course participants.**
- 4) **Flow properties of biomass:** Prof. Sylvia Larsson, of Swedish University of Agricultural Sciences, Department of Forest Biomaterials and Technology, presented the activity carried by the WP members working on projects related to the study of biomass flow. After

a summary on the activities of the last years and recalling that the group on biomass had joined in 2011 with a demonstration project called Bio4Flow involving 4 partners and funded by Processum Biorefinery Initiative. The most important action this year has been the presentation of an ITN-Marie Curie proposal titled “*Efficient, reliable and safe **BIO**mass **H**Andling, **P**retreatment and **P**rocessing for a sustainable EU **B**io-based economy^Y” (BIOHAPPBY). At the time of the meeting the proposal was under evaluation.*

- 5) **Internal friction project:** In the last meeting Dr David Craig of Jenike and Johanson Inc., presented some slides prepared in collaboration with Mr Tim Bell of Du Pont to highlight some issues related to the Jenike and, especially, to the ring shear tester procedure that might have been faced by the WP in order to have a greater consciousness of the scientific meaning and of the correctness of some empirical practice often carried out in the measurement procedure. Some discussion was opened at this point and the WP agreed on the necessity to identify first, which are within the WP the most used tester and for what purpose. Dr Morgeneyer volunteered to prepare a survey to circulate within the WP to better understand these issues.

Prof. Chandana Ratnayake was identified as a valuable candidate to become Norwegian Delegate and Prof. Peter Wypych of the University of Wollongong, Australia, was elected new guest member.

The next annual meeting of the WPMPS will be held in Tel Aviv (Israel) on May 2015. The precise date will be defined in the following months.

On September 22nd, 2014 a Mini Symposium titled “Particle-Based Multiscale Analysis” would take place within the ICNAAM Conference in Rhodes (Greece). The deadline for abstract submission in CHoPS2015 Conference, Tel Aviv (Israel) is November 30th, 2014. The session/symposium title “Bulk Materials Handling & Processing” will be organized by the WPMPS in ECCE10+ECAB3+EPIC5 Conference in Nice (France). The deadline for abstract submission in “1st International Conference on Solids Handling and Processing”, TBA (South Africa) is November 14th, 2014.