

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”
03.05.2015 in Tel Aviv, Israel.

Abstract

The Annual meeting of the EFCE Working Party Mechanics of Particulate Solids (WPMPs) took place on May 3, 2015, 15.00h in Room Galil of the Dan Panorama Hotel, Tel Aviv, Israel. The Meeting was held in conjunction with the 2015 CHoPS Conference.

Prof. Haim Kalman and Prof. Avi Levi (Ben-Gurion University of the Negev, Beersheba) were thanked for kindly support the celebration of the meeting, included and announced in the program of the Conference. Prof. Chandana Ratnayake (Tel Tek University, Norway), new elected member from PARTEC2013, introduced his institution and presented his scientific activity. Dr. Johannes Härtl presented a historical overview of BASF on the occasion of the 150th anniversary of the company and Prof. Irena Sielamowicz followed presenting her research activity over the last years.

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. A new experimental device for the measurement of the horizontal to vertical stress ratio of non-compressible free flowing materials and compressible cohesive materials was designed and built. The results indicates that this new design does not require the twisting action, that was required in the previous version of the split cell to release friction effect on the lid and on the base planes. The results also indicate a good agreement between experiments and Jaki equation for free flowing materials, and between experiments and former DIN 1055 equation, for cohesive materials. This new design cell is promising in the measurement at low consolidation levels.
- 2) **Validation of DEM Simulation:** Prof. Stefan Luding of The University of Twente presented a report on the advancements of the **Multiscale Analysis of multiPhase Particulate Processes (T-MAPPP)** project (<http://www.t-mappp.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 2 Post Doc positions are being trained, an additional 1 Post Doc position will be announced in 2016.
- 3) **Flow properties of biomass:** Dr. Robert Berry, of The Wolfson Centre at the University of Greenwich, presented some problems handling biomass materials based on the long experience acquired with this research field.
- 4) **Wall friction project:** Some slides prepared by Dr Eddie Mc Gee of Ajax on the state of the wall friction project were presented. Previous results showed: a) A statistical analysis of previous data with standard deviations of wall friction angles for each participant group; b) Acrylic Powder (homogeneous, hand sieved, inert) was chosen as a free flowing material.

However some experiences have reported difficulties with coarser free flowing materials. Therefore, another round of tests with the fullest participation on a cohesive fine powder was agreed. After a fruitful exchange of information before the meeting several type of powders were identified as potential candidates for the next stage of the project. Finally, Limestone (PARDEM reference powder) and Alumina were selected. Wall friction tests will be carried out using Aluminium and Stainless Steel wall samples according to the procedure followed in previous rounds of tests.

- 5) **Internal friction project:** In the annual meeting held in CHISA2013 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 has prepared a survey that will be circulated through the WP members to shear tester users.

The next annual meeting of the WPMPS will be held in Nuremberg (Germany) on April 2016, and the following one will be held in Skien (Norway), on June 2017. Precise dates of both meetings will be announced a few months before each event.

On September 22nd, 2015 a Symposium “International Symposium on Handling and Hazards of Particulate Solids in Industry” (HANHAZ2015) organized by the WPMPS will take place within the ECCE10+ECAB3+EPIC5 Conference in Nice (France). The deadline for abstract submission in 12th International Conference on Bulk Materials Storage, Handling and Transportation (ICBMH2016), Darwin (Australia) is **September 30st, 2015**.