

Master Thesis/Bachelor Thesis

Design of Calibration Unit for Particle Simulations

THESIS AT THE AUTOMATION TECHNOLOGY LAB

Prof. Dr.-Ing.
Andreas Schwung

Department of Electrical
Energy Technology

Fachhochschule
Südwestfalen

University of Applied Sciences

Contact

Fabian Westbrink, M.Sc.
Lübecker Ring 2
59494 Soest

Tel.: 02921 378 3414
E-Mail:
Westbrink.fabian@fh-swf.de

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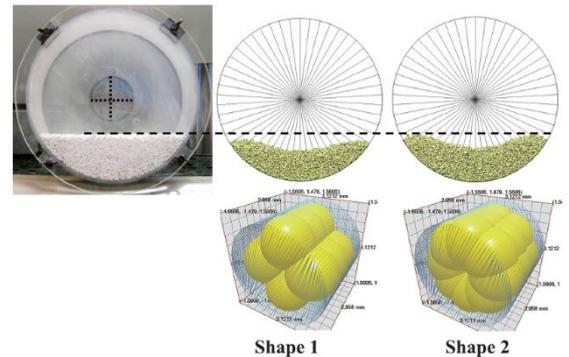
Prof. Dr.-Ing.
Andreas Schwung
Lübecker Ring 2
59494 Soest

Tel.: 02921 378 3419
E-Mail:
schwung.andreas@fh-swf.de

Motivation

One of the upcoming research field is the simulation of complex particle behaviours. In this field, a major part is the calibration and definition of the desired particle properties.

The objective of this thesis is the mechanical design of a complete stand-alone calibration unit for particle materials.

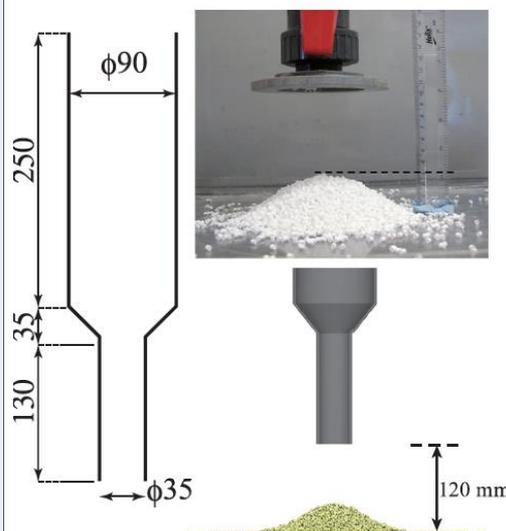


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Task

During the offered thesis, a first step, is to be familiar with particle simulations in general. Particularly focus should be on discrete element method. A deep research of the most important particle parameters for this type of simulations is

to be done. Depending on the parameters, appropriate calibration procedures are to be chosen. These standard procedures need corresponding calibration devices. The major task of this thesis is to develop these devices and place them into one complete unit. Due to this, the complete design, drawings, calculations, part lists etc. are to be created and afterwards to be assembled. The thesis ends with a final calibration of existing material.



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knowledge in design and computer aided design. General knowledge of material properties is desired. We are looking for master or bachelor students of the South Westphalia University of applied sciences who want to complete their thesis.

[1] M. Marigo and E. H. Stitt, "Discrete Element Method (DEM) for Industrial Applications: Comments on Calibration and Validation for the Modelling of Cylindrical Pellets," KONA, vol. 32, no. 0, pp. 236-252, 2015.

Requirements

Strong affinity towards innovative and modern technologies. Profound