

Rheological properties of granular biomass with experimental and DEM modelling

The main objectives of the project is the recognition of mechanical behavior of granular biomass determined in designed and constructed of the vane shear tester that would allow for examination of granular biomass, having different properties than those of mineral or chemical granular materials.

Using the new method torque/stress/ strain characteristics of the materials will be determined. Results of laboratory examinations will deliver new knowledge regarding behavior of weakly recognized material in specific conditions. Numerical investigations will be proposed. The goal of this phase of the research is adaptation of DEM to specific requirements of investigations of granular material of plant origin.

Scientific supervisor: dr hab. M. Stasiak, prof. IA PAN

Profile of the candidate:

- mechanical, physical and IT education
- the ability to use programs for the statistical processing of test results
- ability to use CAD design programs
- Matlab, C ++ programming skills
- knowledge of DEM programs and programming
- advanced English
- the ability to analyze data and make conclusions
- knowledge of laboratory techniques for determining the parameters of granular materials
- the ability to write publications and perform presentations