Simulation-based Development of Tracking Approaches to Improve Optical Bulk Sorting

Collaborative research project of the Forschungs-Gesellschaft Verfahrens-Technik e.V. (GVT), supported via the AiF

Motivation and Challenges
- Wide area of application: Food, Recycling, industrial minerals, and more
- Improve efficiency of optical sorters
- Tools: Modular experimental platform & numerical simulation

The TableSort System
- Rapid prototyping platform for system design
- Implement different kinds of sorters (chute, belt) and fast evaluation of system parameters
- Easy adaption to new sensors, extension by additional sensors for process analysis

DEM–CFD Simulation
- Models for motion of products, e.g., during feeding, transport, and physical separation

Multi-Object Tracking
- Extending system by high speed camera
- Extend evaluation by multi-target tracking
  - Prediction of positions at separation mechanism
  - Improve classification

Results
- Successful calibration between experiments and DEM simulation

Want to know more?
- Join us at Special Session 6: Data Fusion in Sensor-based Sorting on Wednesday, 21.09.16, 13:30 in Room C
  - 2-Slot talk introducing to the field of Sensor-based Sorting by Prof. Längle
  - 3 presentations on Data Fusion in Sensor-based Sorting