

## PROJECT MODELING DRUM DRYERS (INTERNSHIP OR DIFFERENT)

Company: Avebe (Innovation Center)

Duration: 4-6 months for 1 or 2 students, working as team

Location: Zernike Campus Groningen



### Project description

Avebe ([www.avebe.com](http://www.avebe.com)) is a cooperative aiming at processing starch potatoes. Most of Avebe's final products are dry powders, while the starting material, potatoes contain about 75% of water. This makes drying a very important unit operation within Avebe because it is the step that creates the final product attributes. Unfortunately the energy consumption of drying is very high too. A lot of energy gets lost because the water leaves the production facility as a vapor. Heat pumps are able to regain the latent heat in water vapor and use the heat for e.g. steam production.

Ideally heat pumps should be integrated with existing drying equipment, such as drum driers, to avoid excessive investment and maintain product quality. Unfortunately, the operating conditions of existing drying equipment were optimized for product formation. These conditions do not match well with the ideal conditions for energy recovery.

This research project aims at building a drying model for drum dryers that is able to describe and predict the drying process based on first principles. This model will be used to balance the drying conditions with the operating conditions of the heat pumps. This project is a collaboration with the Institute for Sustainable Process Technology ([www.ispt.eu](http://www.ispt.eu)), where Avebe collaborates with TNO, Cosun, and Hutamaki. You will interact and report to this project team.

Please contact Kees Maarschalk ([kees.maarschalk@avebe.com](mailto:kees.maarschalk@avebe.com)) when you are interested or need more information.