Master thesis assignment: Pumping of viscous and shear thinning liquids

Tetra Pak delivers liquid food processing equipment. One critical component in engineering is the pump. Different pump types are available on market. In general, centrifugal pumps are used for less viscous food products whereas positive pumps are used for more viscous food products. This must be challenged! It is important to investigate the possibilities and limitations for different pump types in order to make an optimal engineering.

The main tasks of the diploma work are:

- Study centrifugal pump efficiency for viscous products. Possibilities and Limits
- Study centrifugal pump efficiency for shear thinning products. Possibilities and Limits
- Develop test method
- Perform pilot scale test
- Write pump guidelines

We think that for this task the student need to have an interest in pilot scale experiments and in developing an experimental setup. Knowledge in, and interest for fluid dynamics is needed as well as curiosity for process equipment and measurement systems.

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Time needed: 20 weeks
Starting date: Any
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