

## **STØTEK A/S offers a chance for you to complete a project or dissertation on flow simulation with specific pumps.**

STØTEK A/S in Vojens manufactures melting, dosing, and holding furnaces for aluminium foundries world-wide, and our customer database includes automobile manufacturers such as Audi, Tesla, BMW, and VW. The furnaces are used for the aluminium component casting for the automotive industry – see a video of the processing cycle here: <https://www.youtube.com/watch?v=Q36bKQVESpE>

STØTEK's furnaces are the most energy efficient furnaces on the market, and case studies show that they account for 40 to 70 per cent less CO<sub>2</sub> emissions than competing products as well as a reduction of the oxidization of aluminium – making the final product better and ensuring even greater savings.

STØTEK A/S offers a chance for you to complete a project or dissertation on flow simulation with specific pumps that are used in STØTEK's dosing furnaces, where controlling the correct quantity, precision, velocity, air, and sequence are of very high priority.

### **Flow simulation with an aluminium pump well**

The industry is developing towards larger blanks, shorter processing times, and more stringent quality requirements. In order to optimize our dosing process, we wish to have a simulation made that describes the impact of various parameters.

#### **The application:**

- Dosing of liquid aluminium 720°C
- 2 to 100kg
- Precision +/-1%
- Velocity 2-6 kg/s
- 4 pump sizes 280 / 380 / 480 / 530
- Possibly the new 580 as well

#### **The job:**

- Simulation of the flow in existing designs based on
  - o Blender
  - o Pressure
  - o Vacuum
  - o Balls
  - o Seats
  - o Single/double ball
  - o Inlet diameter

- Throttles
- Lifting height
- Temperature loss
  
- Optimization
  - Typing in the kg in the dosing system
  - Dosing precision
  - Air consumption
  - Control
  - Vacuum oven
  
- CE / The Machinery Directive / Risk Assessments

There will be a great potential of gaining “hands on” experience from visits to some of the world’s largest aluminium foundries within the automotive industry. Besides, STØTEK and users of STØTEK’s dosing furnaces will be good sounding boards.

For further information about the project, please contact

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Please send your application to [HR@stotek.dk](mailto:HR@stotek.dk) labelled “Project or dissertation”.

