MODELLING THE TRANSIENT HOT WIRE METHOD FOR FOAM

Problem Description

• Thermal conductivities ($\lambda$) of foam are difficult to measure by experiment as $\lambda$ depends significantly on the heat rate.

• The transient hot wire method is a well-known method for measuring thermal conductivity.

• Within this master thesis, a simulation model of the experimental set-up using Comsol will be created.

• The model will provide a deeper understanding of the heat transport in the material under expansion.

• Once working, the model will be enhanced by information from other test methods to predict the thermal conductivity for unsteady cases.

Objectives & Tasks

• Build model of test set-up
• Adjust model with data from experiment
• Extend model to estimate unsteady behavior by using additional temperature dependent material data, e.g. density and heat release.