GRÄNGES

MODEL TO CONTROL MATERIAL PROPERTIES ACCORDING TO A MATERIAL SPECIFICATION

BACKGROUND

Gränges has launched an innovative rolled aluminium material product to the market. The product has a novel process flow compared to its other products and neither the material specification nor the quality control is fully defined. Since Gränges is a supplier to the automotive sector, there are strict requirements on raw material traceability, and defined specifications for all properties considered important for product performance.

The product has a unique property that needs to be quantified and defined. Today, Gränges works with both an internal limit and an external limit that corresponds to the customer requirement. To secure fulfillment of the external limit, the internal limit is set stricter. The safety margin is based on a few general assumptions where the sum of process tolerances estimates the maximum possible property variation. A more realistic model is desired to improve the quality control and competitiveness of the product.

MODEL TO CONTROL MATERIAL PROPERTIES ACCORDING TO A MATERIAL SPECIFIKATION

Develop a model how to calculate and determine both the external and internal specification of the specified property. The model should include fact based and weighted assumptions of uncertainties having impact on the product quality.

Expected work areas included:

- Process mapping
- Literature survey of applicable mathematical models
- Benchmarking of models for similar property
- Data analysis
- Error analysis
- Measurement method
- Material variations
- Future limitations

NOTE that the Gränges product and process parameters need to anonymize in the published version of the master thesis.

Submit your application here, the selection is ongoing.

CONTACT

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