

MASTER'S THESIS



GREEN COATINGS BRINGING THE HEAT

Start date Immediately

Compensation 2,700 €

Background

Powder coatings are a greener alternative to conventional wet coatings because they do not contain any volatiles. Using them is part of the current trend towards greener engineering, and their application is growing worldwide. To guarantee powder coatings' flawless processing, several types of flow additives are available to adapt their process-relevant properties. However, the powder behavior of the resulting formulations is expected to be highly temperature dependent due to its polymeric nature. This leaves open an issue that research has yet to address in detail.

Goals

This thesis investigates the temperature's and flow additives' impact on processing-relevant properties for powder coatings (provided by Tiger Coatings).

It explores the air-retention capacity, fluidization behavior, and flowability of powder coatings that have different amounts of additives. Since this involves addressing the powder coatings' dependence on the flow additive content and the surrounding temperature, you will use a uniquely designed temperature device combined with a Powder Flow Cell. This will let you establish realistic process parameters for these investigations. You can find more information on the characterization possibilities of the Powder Flow Cell here:

www.anton-paar.com/apj-powder-rheology

RESPONSIBILITIES

- ✓ Prepare powder coatings containing different amounts of flow additives

- ✓ Conduct flowability investigations with the prepared powder coatings and optimize the mixture for process-relevant parameters at ambient and elevated temperatures

- ✓ Find the limits for maximum storage time and applied loads during transportation

BENEFITS

- ✓ A great chance to work with Anton Paar GmbH during your master's

- ✓ Opportunity to collaborate with the Chair of Process Technology and Environmental Protection at the Montanuniversitaet Leoben

- ✓ Possibility to work for Anton Paar GmbH in the future

INTERESTED?

Contact DI Dr. Helena Weingrill at helena.weingrill@anton-paar.com or at +43 (316) 257-4236.

DI Dr. **Helena Weingrill**
Anton Paar GmbH
Anton-Paar-Straße 20, A-8054 Graz,
Austria
Tel: +43 (316) 257-4236
E-mail: helena.weingrill@anton-paar.com
www.anton-paar.com