EMPLOYER PROJECT WITH NIPPON PAINT

Title: Formulating Coil Coating and Exploring Its Impact on the Environment

---

Field: Chemical Engineering, Engineering, Science

Level: Bachelor's Degree

Project Description:

Coil coating or pre-painting is an industrialized process in which large metal coils go through a series of fully automated production steps prior to final fabrication stages.

This project involves a polyester coil coating formulation that proposes an oven concept towards coil coating, which leads to a drastically reduced size and increased energy efficiency. This also brings about a higher production flexibility due to a fuel-flexible, modular and potentially energetically self-sustainable process. In comparison to existing conventional convective curing systems, this method presents a less energy demanding, environment-friendly and economical technical curing oven concept.

Students will take home with them hands-on experience using the combustion technology, prediction tools for system design/optimization and a prototype curing oven at industrially relevant size and environment. The current formula or coating composition based on polyesters obtained by reactions forming a carboxylic ester link in the main chain is to be reformulated and observed for its coating compositions based on derivatives of such polymers. Students will analyse the chemical as well as the biological concerns about the toxicological profile of solvents used in our paint manufacturing systems. Through this, they are exposed to one the recent breakthroughs in chemical engineering, as well as increasing their experience and employability.

---

sample signature
Supervisor's signature

Date: May 31st, 2021