

WG Manufacturing Process Simulation

CU Theme Day „Modelling & Simulation of Thermoplastic Composites“

at CFK Research Center (Ottenbecker Damm 12, 21684 Stade, Germany) on 22 October 2024

Moderation:

- Prof. Dr.-ing. Mathias HARTMANN (Technische Hochschule Deggendorf)
- Dr. ir. Johannes Mattheus BALVERS (AIRBUS Helicopters)

On 22 October, the CU working group “Manufacturing Process Simulation” will entirely focus on the topic of material modelling and simulation of thermoplastic composites. Best practices from companies will be shown, research approaches will be presented and future developments of this field will be discussed.

This event will be held in English.

Agenda

09:30	Welcome, News from Composites United e.V., Objectives of the Day Mathias HARTMANN & Jordy BALVERS Sophie NÖSLER, Composites United e.V.
09:35	Presentation Ecosystem Stade Tim FRERICH, Project Leader for Airframe and Cabin Structure at CTC
09:50	Advanced forming simulation approach for development of a helicopter door structure Rodrigo TAVARES, Virtual Engineering Manager at Syensqo TPC Material Science Application Centre
10:15	Measurements, modelling, simulation, and validation for induction welding of UD TP-CFRP laminates Wouter VAN DEN BRINK, R&D Engineer Composites at NLR
10:40	Process simulation of novel thermoplastic sandwich moulding process for short cycle manufacturing of integral parts in transportation industry Varun MINUPALA, Simulation Expert in Group Thermoplastic Lightweight Technologies at Fraunhofer IMWS
11:05	Coffee Break
11:25	Challenges of predicting thermoplastics Lennart FINGER, Project Leader for Airframe and Cabin Structure at CTC
11:50	Analysis of deformation mechanisms in fabrics made of rCF staple fiber yarns for thermoset composite applications Thomas GEREKE, Research Group Leader Structure & Process Simulation at TU Dresden
12:15	Multi-physics simulation of ultrasonic welding: From frequency domain to time domain Jan Yorrick DIETRICH, Research Associate Modelling and Simulation at Faserinstitut Bremen (FIBRE)
12:40	Lunch Break
13:30	Status and potential of temperature simulation for thermoplastic fibre placement at AFPT Patrick KÖLZER, Managing Director at AFPT

13:55 **PRESENTATION TITLE (REMOTE)**

Eduardo BAROCIO, Director of the Composites Additive Manufacturing and Simulation Consortium at the Purdue Composites Manufacturing and Simulation Center

14:20 **Setup and verification of a simulation model to optimize the testing process of thermoplastic composite components**

Claas-Johannes LÜBBERS, Manufacturing and Test Engineer at AIRBUS Aerostructures (formerly known as Premium Aerotec)

14:45 **Short Discussion & Further Actions**

15:00 **Guided Tour through CTC Facilities**

16:00 **End of the Event**
