



ADVANCING THERMOPLASTIC COMPOSITE TECHNOLOGIES

The ThermoPlastic composites Research Center (www.tprc.nl) is an open research center for fiber reinforced thermoplastic composites. TPRC performs research in co-operation with national and international partners, such as Fokker, TenCate and Boeing, on the processing and performance of thermoplastic composites. TPRC would like to reinforce its research team with an intern or graduation student on the topic of:

FORMATION OF WRINKLES IN THERMOPLASTIC COMPOSITE MANUFACTURING

Project description

Thermoplastic composite parts are increasingly used in the aerospace industry because of their superior stiffness to weight ratio and rapid manufacturability. However, there are still some challenges in manufacturing. During part production, defects such as fiber wrinkling can occur. Parts with such defects are generally scrapped, because the influence of wrinkles on mechanical performance and reliability is poorly understood. Reduction of the scrap rate can be achieved by properly understanding the formation of wrinkles.

Because the origin of wrinkles is not fully understood, more knowledge on this subject is required. The relation between processing parameters, material quality, lay-up and wrinkle severity needs additional research. This project is primarily focussed on experimental investigation.

Tasks

This assignment focusses on wrinkling defects in thermoplastic composite laminates. The work includes:

- Investigating wrinkle formation with an experimental program, which includes laminate production and stamp forming of thermoplastic composite parts at the TPRC
- Evaluation of experimental results, identifying the relation between process parameters and wrinkle severity
- Discussion of the results in a written scientific report.

Practical information

The project is to be performed within a time frame of three to six months. You will have a desk at TPRC and receive a monthly trainee remuneration of 250 Euro. Please contact Sebastiaan Wijskamp (sebastiaan.wijskamp@tprc.nl or 088-8773804) for additional information.