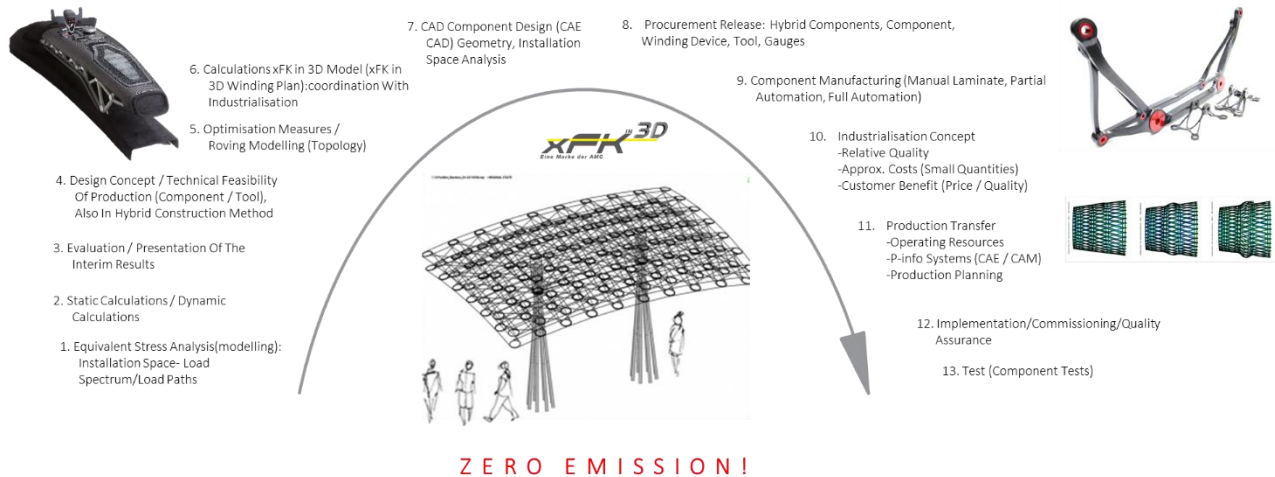


Master Thesis or Internship - Development of Digital Process Chain for “xFK in 3D” Process technology (6 months)

Automotive Management Consulting GmbH, Im Thal 2, 82377 Penzberg



About Us:

Our mission is to deliver superior results in Technology & Management Consulting, particularly in lightweight construction. Our “xFK in 3D” process innovation offers highly flexible, cost-effective, and sustainable fiber composite technology for winding components, contributing to integrative lightweight construction. Our Digital Process Chain has been utilized across various industries, creating ultra-light structural components tailored to specific functions and load spectrums.

Master Thesis or Internship Objective:

The objective of Master Thesis or Internship is to advance the “xFK in 3D” process technology, particularly focusing on its application in automotive lightweight construction. By leveraging CAE-CAD-CAM integration, we aim to optimize the design, development, and manufacturing processes to produce lightweight components that meet the all requirements of the automotive industry.

Your Tasks

- Conduct an in-depth literature review to understand the principles and applications of “xFK in 3D” process technology in automotive lightweight construction
- Develop a parametric CAD model that incorporates CAE-CAD-CAM functionalities within the “xFK in 3D” process, ensuring accuracy and efficiency in digital representation

- Apply CAE-driven Topology / Generative design model optimization techniques to refine the “xFK in 3D” process, enhancing its flexibility, cost-effectiveness, and sustainability
- Validate the simulation model by comparing simulated results with experimental data from real prototype manufacturing scenarios, ensuring alignment with industry standards
- Integration of the CAE-CAD-CAM-driven “xFK in 3D” process into the digital process chain, enabling efficient data exchange and workflow automation
- Maintain detailed documentation of the technology development process, including methodologies, algorithms, and integration protocols
- Prepare reports and presentations to communicate research findings, technological advancements, and practical insights to internal and external partners

Your Profile:

- Currently enrolled in a master's program in mechanical engineering, automotive engineering, materials science, or a related field
- Strong background in 3D CAD modeling, finite element analysis, and optimization techniques
- Proficiency in software tools such as Solid edge, ANSYS or similar and basic programming languages like Python or similar
- Knowledge of lightweight materials, composite manufacturing processes, and automotive design principles is advantageous
- Excellent communication skills and ability to work effectively in a multidisciplinary team environment
- Good command of written and spoken English

Our Offer:

- Participate in collaborative research projects alongside industry-leading customers and experts, contributing to advancements in "xFK in 3D" process technology within the lightweight technology sector
- Gain practical skills and hands-on experience in developing and implementing simulation models specifically designed for lightweight automotive applications
- Exposure to AMC's extensive network and expertise in technology consulting, providing valuable insights and professional development opportunities

How to Apply:

To apply, please send your CV and a cover letter outlining your relevant experience and motivation for the position to Ms. von Nell-Breuning (constanze.nell@automotive-management-consulting.com). For any technical inquiries, please contact Mr. Chennoju (s.chennoju@automotive-management-consulting.com).

We look forward to receiving your documents!