Expert Consulting for Automotive Composites
Your keys to get it right from the start

Dr. F. Nezami, J.-P. Fuhr
CIKONI, Stuttgart, Germany
Automotive Composites Design | Identify the right concept

DON’T SUBSTITUTE - INNOVATE

- Avoiding black metal design and achieving lightweight targets
- Elimination of critical geometry with early stage manufacturability studies
- Integration of functions to reduce number of parts and assembly costs
Manufacturing Processes | Choose the right technology

- Access to expert knowledge about composites manufacturing technologies
- Identification of customer requirements
- Matching the suitable technology for your application, market and volume scenario
Material Characterization | Understand the material behavior

- Testing of composite and hybrid materials for process and structural properties
- Detection of forming limits for manufacturability studies
- Advanced evaluation methods for anisotropic strength and damaging prediction
- Parameter identification for material cards to start into FEM simulations
Composites Simulation | Reduce testing efforts by digital prototyping

- Draping simulation for process development and preform design
- Anisotropic part and laminate optimization for bionic lightweight design
- Crash simulation to estimate structural deformation and energy absorption
• Automated preforming for complex automotive structures

• Consulting for ARENA2036: German high-tech cluster for future automotive lightweight design and manufacturing technologies
Automotive Composite Strategy throughout Product Life-Cycle

Composite Technology Marketing
Part Selection
Requirements Engineering

Material Selection
Composite Design
Manufacuring Process Selection
Documentaion

Quality Engineering
Composite Mechanics and Resulting Weight

Cost

Composites Repair
Maintanance Strategy

Coworking with Supply-Chain, R&D Partners, Industry Networks

Understanding and Managing Excessive Composite Development Domains and Links is the key success factor.

References | Composites strategy consulting
References | Method and technology development

- CAx automation to improve process chains and speed up part and process development

- Innovative lightweight structures with 3D filament winding