Research and development centre for lightweight automotive construction

#### About this organisation

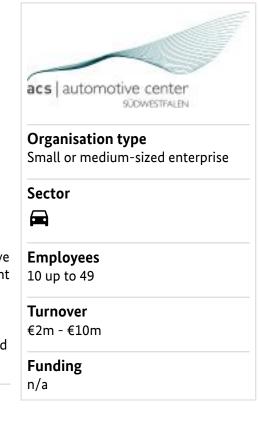
#### **Machine translation**

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Automotive Center Südwestfalen GmbH (acs) is a platform for research and development work as well as knowledge transfer between automotive manufacturers, suppliers and university institutes in South Westphalia. The company provides modern infrastructure, equipment, software and specialised personnel for projects and tasks in the field of research and development.

Its expertise covers the fields of bodywork and chassis as well as rational manufacturing processes for metal, plastic and hybrid material combinations. The acs specialises in working on R&D projects for suppliers and car manufacturers. In these projects, acs mostly deals with the challenges of functional and economical lightweight construction. The following six specialised departments have been set up at acs: Computer Aided Engineering Department 1: Technology and Innovation Management Department 2: Forming Technology and Materials Department 3: Plastics Technology and Materials Department 4: Joining and Assembly Technology Department 5: Testing, Metrology and Materials Laboratory

Kölner Straße 125 57439 Attendorn North Rhine-Westphalia Germany 🖸 www.acs-innovations.de



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Main areas	
covered	Component and assembly development
Infrastructure	Forming technology and materials, Plastics technology and materials, Joining and assembly technology, Testing and materials laboratory, Development and CAE
Certifications	ISO 9001:2008
Keywords	Lightweight automotive construction, Plastics technology, forming technology, Joining technology, testing, Injection moulding technology, development, CAE, structural components, crash

### Overview of lightweighting expertise

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	Research	N Development	Aanufacturing & Supply
Offer			
<b>Products</b> Parts and components	$\checkmark$	$\checkmark$	
<b>Services &amp; consulting</b> Consulting, Testing and trials, Engineering, Validation, Simulation	~	~	

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Field of technology				
<b>Design &amp; layout</b> Lightweight manufacturing, Lightweight design, Hybrid structures, Lightweight construction concepts, Lightweight material construction	$\checkmark$	$\checkmark$	~	
Functional integration Material functionalisation		$\checkmark$		
<b>Measuring and testing technology</b> Component and part analysis, Visual analysis (e.g. microscopy, metallography), System analysis, Materials analysis, Destructive analysis, Non-destructive analysis		~		
<b>Modelling and simulation</b> Crash behaviour, Loads & stress, Life-cycle analysis, Optimisation, Processes, Structural mechanics, Materials, Reliability validation		$\checkmark$		
Plant construction & factory automation				

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	Research	l Development	Manufacturin & Supply
Manufacturing process			
Additive manufacturing 3D printing, Deposition welding, Selective laser melting (SLM, LPBF,), Selective laser sintering (SLS)	$\checkmark$	$\checkmark$	
Coating (surface engineering)			
Fibre composite technology Fibre spraying, Pre-preg processing	$\checkmark$	$\checkmark$	$\checkmark$
<b>Forming</b> Bending, Compression moulding, Thermal converting, Deep-drawing	$\checkmark$	$\checkmark$	$\checkmark$
<b>Joining</b> Clinching, Hybrid joining, Adhesive bonding, Soldering, Riveting, Screwing, Welding	$\checkmark$	$\checkmark$	$\checkmark$
Material property alteration Heat treatment	$\checkmark$	$\checkmark$	$\checkmark$
<b>Primary forming</b> Injection moulding	$\checkmark$	$\checkmark$	$\checkmark$
Injection moulding <b>Processing and separating</b> Drilling, Turning, Milling, Sawing, Grinding, Cutting	•	•	~ ~

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	Research	Development	Manufacturing & Supply	
Material				
<b>Biogenic materials</b> Bioplastics, Biocomposites, Wood	$\checkmark$	$\checkmark$	$\checkmark$	
Cellular materials (foam materials)				
<b>Composites</b> Aramid fibre composites, Basalt fibre-reinforced plastic, Glass-fiber reinforced plastics (GFRP), Carbon-fiber reinforced plastics (CFRP), Natural fibre reinforced plastics (NFRP)	~	$\checkmark$	~	
<b>Fibres</b> Aramid fibres, Basalt fibres, Glass fibres, Ceramic fibres, Carbon fibres, Metal fibres, Natural fibres	$\checkmark$	$\checkmark$	$\checkmark$	
Functional materials				
<b>Metals</b> Aluminium, Intermetallic alloys, Magnesium, Steel, Titanium	$\checkmark$	$\checkmark$	$\checkmark$	
<b>Plastics</b> Thermoset plastics, Elastomers, Thermoplastics	$\checkmark$	$\checkmark$	$\checkmark$	
Structural ceramics				

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