

»SONNENWAGEN«

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Special exhibit by Fraunhofer ILT at Laser World of Photonics 2025 | Hall A3.431

Team Sonnenwagen Aachen – A solar car for Australia

Since 2015, Team Sonnenwagen, currently consisting of 45 students from RWTH Aachen University and FH Aachen University of Applied Sciences, has been developing and building solar-powered racing cars from scratch. The team's main goal is to participate again in August this year in the world's largest innovation and engineering competition in this field – the Bridgestone World Solar Challenge.

The Bridgestone Solar World Challenge is a seven-day race across Australia – from Darwin in the north to Adelaide in the south. A total of 50 teams compete with their self-designed energy-efficient electric vehicles to complete the 3,000-kilometer route.

Team Sonnenwagen Aachen already took part in this race in 2023 with their latest solar car, "Covestro Adelie." The student team spent a year working on the race car and its technology. The solar-powered vehicle was modeled after the Adelie penguin for aerodynamic reasons and impresses with a top speed of 138 km/h. "Covestro Adelie" is powered by 567 mono-Si solar cells covering 96 percent of its total surface area. The solar energy generated is stored in a self-built battery module with a capacity of more than 6kWh, so that the car can be driven for a short time even without sunlight.

The Fraunhofer Institute for Laser Technology ILT also played a role in the design of this battery module: Researchers in the field of metal joining laser-welded the cell-to-cell contacts of the battery module.

On September 21, 2024, the ninth anniversary of Team Sonnenwagen, the team also took part in the iLumen Solar Challenge in Belgium. Every two years, the teams compete with two solar cars each. The Aachen team took second and third place in the 24-hour race with the solar cars "Covestro Photon" and "Covestro Adelie."

- More information about the Sonnenwagen: www.sonnenwagen.org
- Please also read our technical article on this topic:
From raw material processing to recycling: new approaches in battery production": <https://s.fhg.de/t56R>

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Image 1:
The Sonnenwagen Aachen team took part in the Bridgestone World Solar Challenge back in 2023 with their solar car "Covestro Adelie."
©Team Sonnenwagen.



Image 2:
Since 2015, Team Sonnenwagen, currently consisting of 45 students from RWTH Aachen University and Aachen University of Applied Sciences, has been developing and building solar-powered racing cars entirely by hand.
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