



2025 PARTNERSHIP OFFER



AGH
EKO-ENERGIA

Power us into action!

ABOUT US

AGH Eko-Energia is **one of the largest student research groups at the AGH University of Science and Technology in Kraków**, dedicated to renewable energy and electromobility.

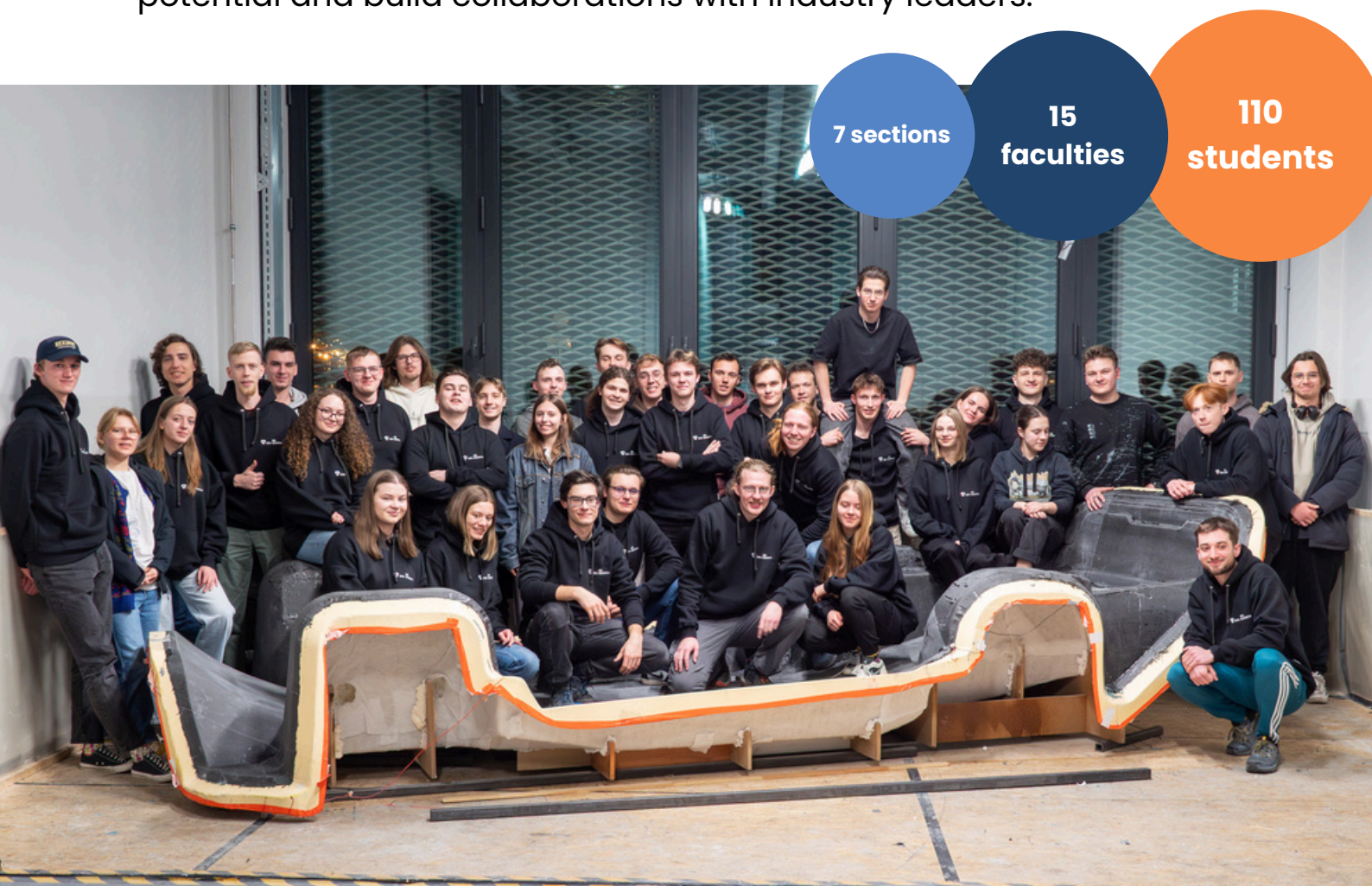
Our flagship project is Perła – an innovative solar-assisted electric car that we are preparing to showcase on the international stage.

► Our mission

Our mission is to **create innovative solutions in the fields of sustainable energy and electromobility** that make a real impact on the future of transportation and environmental protection.

► Our vision

We aspire to become a leading hub of student-driven innovation in the fields of e-mobility and renewable energy in Europe. **Our goal is to win the international competitions – the Bridgestone World Solar Challenge in Australia and the iLumen European Solar Challenge in Belgium** – which will allow us to showcase our potential and build collaborations with industry leaders.



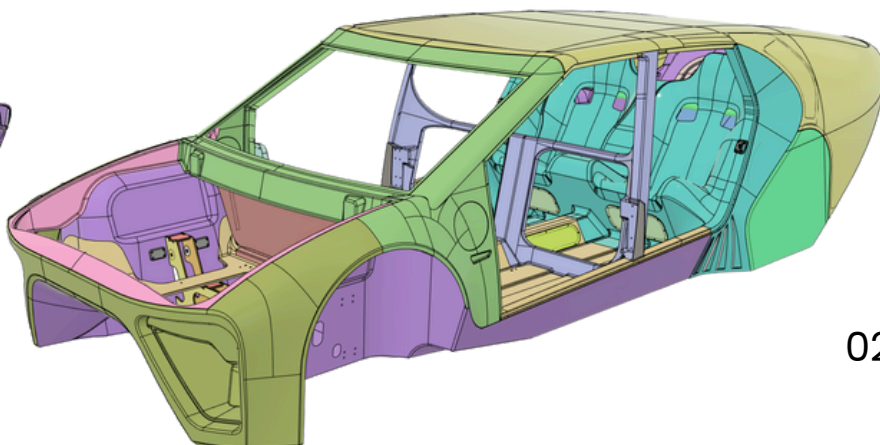
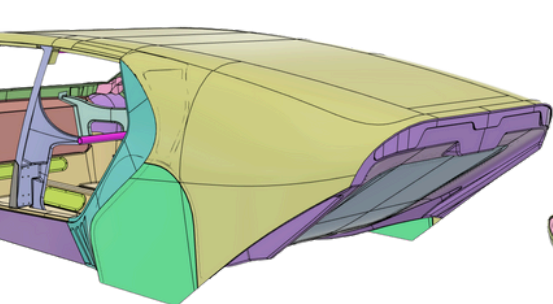
PERLA

ELECTRIC REVOLUTION

Our flagship project is Perla (eng. Pearl) – **a four-seater solar car** with the potential to reshape the future of transportation. Designed with energy efficiency and sustainable mobility in mind, this project represents a bold step forward toward the next generation of automotive innovation.

Why Perla Stands Out

- Ultralight Materials – the use of carbon fiber and composite technologies reduces the vehicle's weight to just 500 kg.
- Solar-Powered – 5 m² of solar panels integrated into the roof and hood structure.
- Optimized Motors – delivering a total power output of 20 kW.
- Top Speed – 140 km/h.
- Aerodynamic Efficiency – drag coefficient (Cx) of 0.26.



CONSTRUCTION AND TECHNOLOGY

Composite Structure

The body of the solar vehicle Perla has been designed as a monocoque frame. Using structural simulations, we optimized the vehicle's weight to be as low as possible while ensuring it can withstand real-world loads. Thanks to aerodynamic simulations, the team achieved a low drag coefficient, enhancing the car's efficiency and performance.

Suspension System

Perla's suspension features a multi-link push-rod system inspired by Formula 1 designs. The suspension combines several advanced manufacturing techniques, including SLS 3D printing, alloy aluminum welding, and high-strength carbon fiber components. The entire suspension is mounted on a subframe made of sandwich composite panels, further reinforcing the vehicle's structure.

Power system

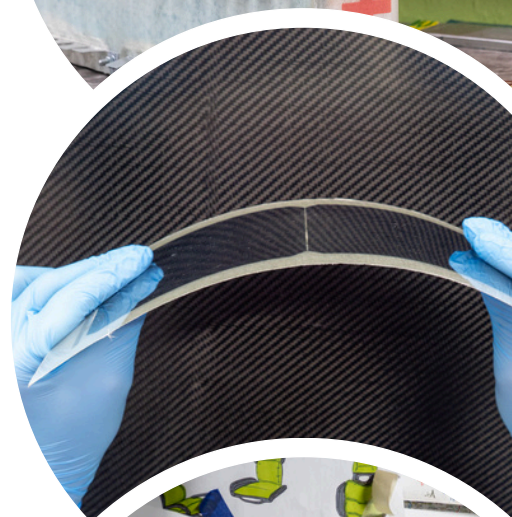
The vehicle's main power source is a high-capacity 22.4kWh battery. The battery is modular, divided into seven cell packs. During operation, it is passively cooled using aluminum radiators and heat-dissipation channels. The entire assembly is housed in a composite enclosure made of fiberglass with basalt fiber elements, ensuring both durability and lightweight performance.

Photovoltaics

Due to the vehicle's curved body, the team focused on developing flexible PV module manufacturing technology. After extensive electroluminescence and aging tests, the team selected the final solution. The car's panels will ultimately be produced by laminating cells using the RTM method within fiberglass, a novel approach not yet widely adopted in the industry. The team's research has the potential to revolutionize lightweight solar panels for vehicle integration.

Design & Functionality

Given the vehicle's practical nature, we place great emphasis on its aesthetic appeal. The solar car Perla features a design based on continuous flowing lines and aerodynamic contours. The dashboard will include touchscreen displays with advanced multimedia and interface capabilities, combining functionality with modern user experience.



OUR SUCCESES

We are proud of our achievements and innovative projects, which distinguish us on both the national and international stage.

► PROJECT WINDY

Project carried out in 2020/2021 – wind turbine with a variable-diameter diffuser. Thanks to the innovative mechanism:

- 30% higher efficiency compared to conventional turbines
- 40% wider wind speed range in which the turbine operates effectively
- **Patent protection**

► PROJECT HALYNA

A turbine that uses three generators with different characteristics, which allows for:

- Efficient conversion of wind energy under varying atmospheric conditions
- Increased annual operating time of the turbine
- Optimal power adjustment to the available wind resources

► COMPETITIONS

- ECO-Innovative Student Research Group in the "ECOinnovators 2021" Competition
- Student Research Group of the Year 2022" and "Project of the Year 2021" in the StRuNa Competition
- 1st Place at the International Conference of Casting and Materials Engineering (ICCME 2023)
- 1st Place in the KoKoS Competition 2021 and 2022 – category "Innovation and New Technologies in Ecology and Environmental Protection"
- Multiple top awards at AGH Student Research Group Conferences: Metallurgical & St. Barbara's day

► RESEARCH PUBLICATIONS

We publish scientific articles and opinion pieces on renewable energy and electromobility. The WINDY project is protected by a patent, while PERLA has been featured in the world's most popular photovoltaic magazine – PV Magazine. In addition, our group has authored three scientific papers. **The results of our research are applied both in academic studies and technological implementations.** Moreover, our projects are supported by detailed technical drawings, which precisely document our innovative solutions.

► SCIENTIFIC CONFERENCES

We participate in international industry conferences, showcasing our innovative projects. Our research on PV has been presented at the Metallization and Interconnection Workshop in Chambéry, France. Members of our group regularly win conferences organized at the national level by universities. Additionally, the PERŁA project has been featured at numerous domestic conferences.



PARTNERSHIP BENEFITS

- Your company's logo displayed on our website, promotional materials, the PERŁA solar car, and past projects.
- Showcasing your company on our social media platforms: Facebook, Instagram, LinkedIn.
Partner-branded publications (posts, stories, reels) showcasing products, technologies, or services in the context of our projects, highlighting their role and added value in the innovative solutions developed by our Student Research Group.
- Showcasing your company at both national and international events and conferences.
Featuring your logo on roll-ups, exhibition stands, and marketing materials such as presentations.
- Opportunity to feature our Student Research Group in your company's marketing initiatives.
- Quarterly updates on project progress.



JOIN OUR NETWORK OF PARTNERS

Contact Us



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Linkedin www.linkedin.com/company/skn-ekoenergia

Power us into action!

