

# HIGH VOLTAGE

## AGORIA SOLAR TEAM



### THE PROJECT

The goal of the project is to build the tenth Belgian solar car. With this car, you will participate in the world championship for solar cars in Australia, the Bridgestone World Solar Challenge 2023. You will go through the whole process of designing, producing, testing and racing, together with a group of ambitious and motivated students. With numerous companies, you will develop new innovations to build the most efficient solar car. In the end, you and your team will compete against universities from all over the world to compete for the first place. This project will help you become a state-of-the-art engineer!

### THE FUNCTION

As a High Voltage engineer you take on one of the three responsibilities below in order to design and implement a powertrain that is as efficient and reliable as possible, together with your colleagues.

#### Motor

Your goal is to design and manufacture an electrical motor that is more efficient and reliable than commercially available motors. You search for the perfect motor configuration by simulating different combinations of pole pairs, winding configurations... You do this on the basis of an electromagnetic model. For this you will need a good theoretical basis. In addition, you do material and production research to actually build the new motor. For the design and production of the motor you will have to work closely with the mechanics department and you will have to seek expertise and support from partner companies.

#### Battery

By researching the latest innovations and trends in battery technologies, you design a tailor-made battery pack with maximum energy capacity. The right choice of cells is essential for a competitive solar car and for the further design of the electrical circuit. In addition, the mechanical housing and related electronics must be designed to make the battery pack as reliable and safe as possible and to be able to monitor it from the outside.

#### Solar panel

For the solar panel, you will research different type of high efficiency solar cells and work closely with the aerodynamics department to determine the optimal shape of the car and the solar panel. After the electrical design, you produce the solar panel together with your department and partners who have years of experience in the industry. Accuracy and an eye for detail are of the utmost importance. Finally, you will assemble the finished panel on the solar car.

## YOUR PROFILE

- An extensive interest in both electronics and electromechanics
- A motivated team player with strong communication skills
- A creative, out-of-the-box mindset with an eye for detail
- Bachelor's or master's degree in engineering technology or (bio-)engineering sciences
- Ready to put a lot of time and effort into this project!

## OUR OFFER

- A project full of experiences you don't get in your normal studies
- Experiencing a real engineering project and its different phases
- Being in contact and cooperating with the largest companies in the industry
- A group of friends and an international racing adventure to remember
- The experience of a lifetime and so much more!