Optimisation of the side area of a formula student race car using topological optimization software

Green Innovation meets performance

Our Project

Formula Electric Belgium is a student-based race team that pushes green innovation to performance. We design and build our own electric race car each year to participate in the international Formula Student competitions. This year, we are looking for pioneers to challenge the status quo and bring our top-notch electric race car to the next level. As a Thesis student, you will have to research, design, prototype and test your systems together with a group of highly motivated, ambitious students. You will work together with our team members and companies to develop new innovations.

Description and objective

The aerodynamic package of a Formula Student car serves the purpose of generating downforce to give the car more grip on the racing track. It is known that high performance race cars get around half of their downforce by using ground effect. Therefore, the undertray and side area of the car are very important regions whose design should be chosen carefully.

That is why this thesis will fully focus on optimizing the side area of the car. In doing this, it is important that the effect of and on the other aerodynamic components is also investigated and is taken into consideration.

Because of the amount of freedom existing in this area, it is unlikely that the maximal potential will be found when manually iterating over different designs. This is why Siemens's HEEDS design software should be used in order to investigate faster and more accurately.

Profile

- Bachelor Engineering Science or Technology
- Interest in fluid dynamics
- Basic knowledge of CFD is recommended, but not required
- Willing to learn quickly about composite production methods and race car aerodynamics

Returns

- Experience in an unique field of expertise
- Gain exposure to cutting-edge technologies and industry-leading organizations
- Possibility to network and cooperate with international stakeholders

Join our research team!

Mail your contact info and field of interest

to recruitment@formulaelectric.be