

Development of a digital twin of the cooling system

OUR PROJECT

Formula Electric Belgium is a student-run electric race team which competes in Formula Student, the world's largest competition for engineering students. We aim to push the limits of performance, innovation and sustainability within electric racing every year, which is only possible with the help of our Thesis students. These pioneers are responsible for performance-defining innovations within the team, and we would love for you to join our team of highly ambitious and motivated engineers. As a Thesis student, you will research, design, prototype and test your innovations alongside the full-time members which make sure the team pushes itself and the car to new heights.

AIM AND OBJECTIVE

Our car has 4 motors and two drives that are actively cooled by a water cooling loop. An effective cooling system has many requirements: avoid thermal derating, maximize motor efficiency, minimize aerodynamic influence (radiators), minimize weight and reliability. In order to achieve all these goals, a better understanding of the cooling system is needed. The aim of this thesis would be to develop a digital twin of the current cooling system. This model should accurately predict the flow and heat in the system. In a second step an improved cooling system should be designed.

Key objectives are:

- Gathering data for the model
- Choosing the right software
- Developing the model
- Designing an improved cooling system

PROFILE

- (electro) mechanical engineer
- Willingness to learn Simulink or Amesim
- Good knowledge of heat transfer and fluid dynamics

RETURNS

- Practical experience in a high-end engineering context
- Work with the newest technologies and innovative companies
- Developing your hard- and soft-skills in a company-like environment
- Participation in the biggest student competition in the world

INTERESTED?



Send us your contact details and field of interest to

recruitment@formulaelectric.be