

# Implementation of a split-monocoque design for a formula student race car



We are looking for motivated master students Engineering Technology

## Project description:

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Formula Electric Belgium (**FEB**) is a team of highly motivated engineering students that build an electric formula student race car. Just like Formula 1 the team builds a brand-new car each year to compete in multiple international competitions during the race season. Formula Student is the largest international engineering and design competition in the world. The competition is characterized by combustion vehicles, electric vehicles and since recently also autonomous vehicles. Formula Electric Belgium strives towards innovations and the raw performance of technologies. It is for this reason that the team will focus on autonomous/electric race cars. Research and development applications will be made by postgraduate students in collaboration with thesis students from the KU Leuven and bachelor students from Thomas More.

## Thesis description:

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The monocoque (carbon fiber composite chassis) is the largest component of the whole car. Naturally, production takes quite a while. Therefore, a split-monocoque manufacturing process has been proposed. It has been proven that this is possible, and the type of joints and glue that have to be used are known.

During this thesis, you will investigate the manufacturing process of a split monocoque, as well as the implementation of this method. This will help us to significantly reduce the manufacturing time of the monocoque, as well as increase the reliability and performance.

## Thesis objective:

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The global goal of a Formula Student competition is to win the competition through good design and performance. This thesis will contribute to both aspects. The goal of this thesis is to find a way to implement a split monocoque design in the manufacturing process. This includes (but is not limited to) defining the split line, aligning method of both halves, positive mould, and post-cure.

## Profile:

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- Interested in mechanical design
- Knowledge of materials engineering and/or composites is an advantage
- Creative
- Result-oriented

## What do you gain?

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- A unique engineering- and team experience where hard work and team atmosphere are central.
- Work with innovative technologies in a realistic environment/application.
- A practical thesis with added value that will be implemented in later cars
- Create added value for your curriculum and the team

Are you interested? Please send your resume with accompanying motivation to:

[recruitment@formulaelectric.be](mailto:recruitment@formulaelectric.be)

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