# Feasibility study on 3D-printing cores in

## a Formula Student race car

### **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 topnotch 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 monocoque, a carbon fiber composite chassis, is the largest component of the race car and poses several challenges in production. The designing, manufacturing, and laying of clean cores is a critical step in the manufacturing process, and using a 3D-printed core could simplify and improve the process. However, little is known about this technology, and a feasibility study is necessary to determine its potential.

This thesis aims to investigate the feasibility of implementing a 3D-printed core in the monocoque to contribute to the design and performance of the car. The study will answer several questions, including whether a 3D-printed core is a suitable alternative to current materials and what material and lattice structure/topology should be used. The results will aid in enhancing the performance of the car and potentially lead to new innovations.

#### Profile

- Bachelor Engineering Science or Technology
- Motivated team player with strong communication skills
- A professional and entrepreneurial attitude
- A direct but diplomatic approach towards companies
- Basic knowledge of material sciences **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 <u>recruitment@formulaelectric.be</u>