

# Master thesis proposal by ATM : Eco-Marathon

**Title :** Development of a biofuel based ICE to power an urban Eco-Marathon vehicle.

**Promoter :** Pr. Patrick Hendrick

**Co-promoter :** Pr. Axel Coussement

**Supervisors :** Dr. Bilal Outirba and Alessandro Piscopo

The ATM department aims to design an urban vehicle with a biofuel-based Internal Combustion Engine in order to participate to the Shell Eco Marathon competition. The latter is a race where the principle is to cover the longest distance with a given quantity of energy.

The student would have to design the engine from scratch in order to power the vehicle. The different steps would involve, the theoretical study of specifications and sizing of the engine, the selection of the engine and a numerical study of the combustion process of the biofuel in the ICE on Fluent Ansys. A particular emphasis must be put on the injection system due to the characteristics of the fuel.

If the results show the viability of this engine in this context, the experimental phase could begin.

The candidate would have to collaborate with a team of 3-4 students working on the different parts of the new vehicle.

If interested by this topic, contact Alessandro Piscopo ([Alessandro.Piscopo@ulb.be](mailto:Alessandro.Piscopo@ulb.be)) and Bilal Outirba ([Bilal.Outirba@ulb.be](mailto:Bilal.Outirba@ulb.be)).