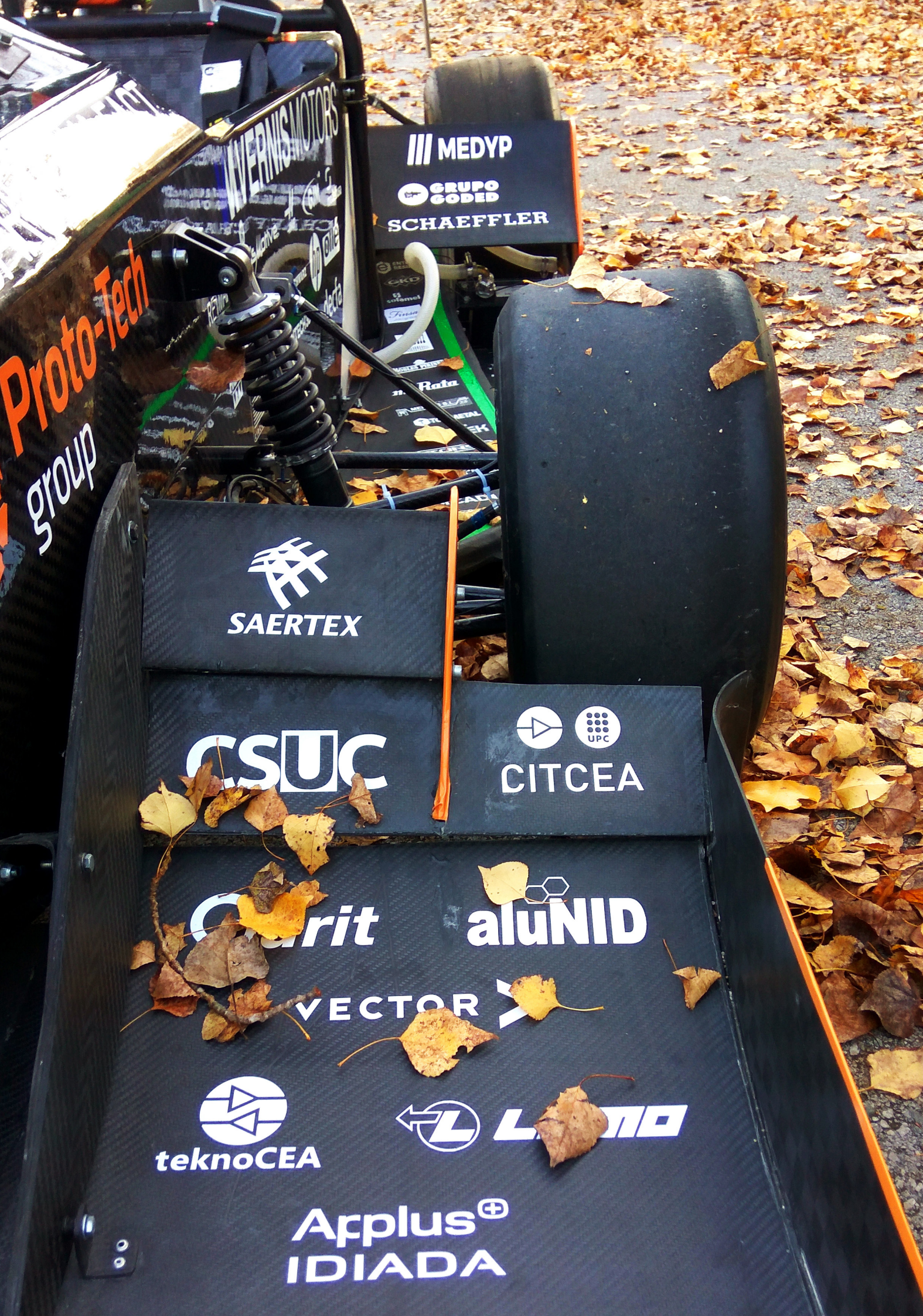


Newsletter

Autumn - 2018



Team 2018 | 2019



Dear reader,

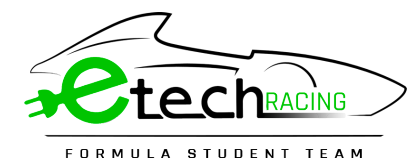
e-Tech Racing is a team composed by 32 students of the Escola d'Enginyeria de Barcelona Est (EEBE), of the Universitat Politècnica de Catalunya (UPC).

Our goal is to develop an electrical racing car to compete internationally in the various events of the Formula Student organization, always beginning with Formula Student Spain, celebrated every year in the Circuit de Catalunya (Barcelona).

Despite the competition fact, the mission of this project is to develop the personal abilities of the students in a maximum exigence context and to make strong relationships with the top companies of the sector in order to get versatile professionals with the fastest and best location in the professional world.

Although, we follow some values that we consider positive for the society in general, as discipline, ilusion, hard-work, humility, generosity and the most important, PASSION.

Sincerely,





UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Escola d'Enginyeria de Barcelona Est

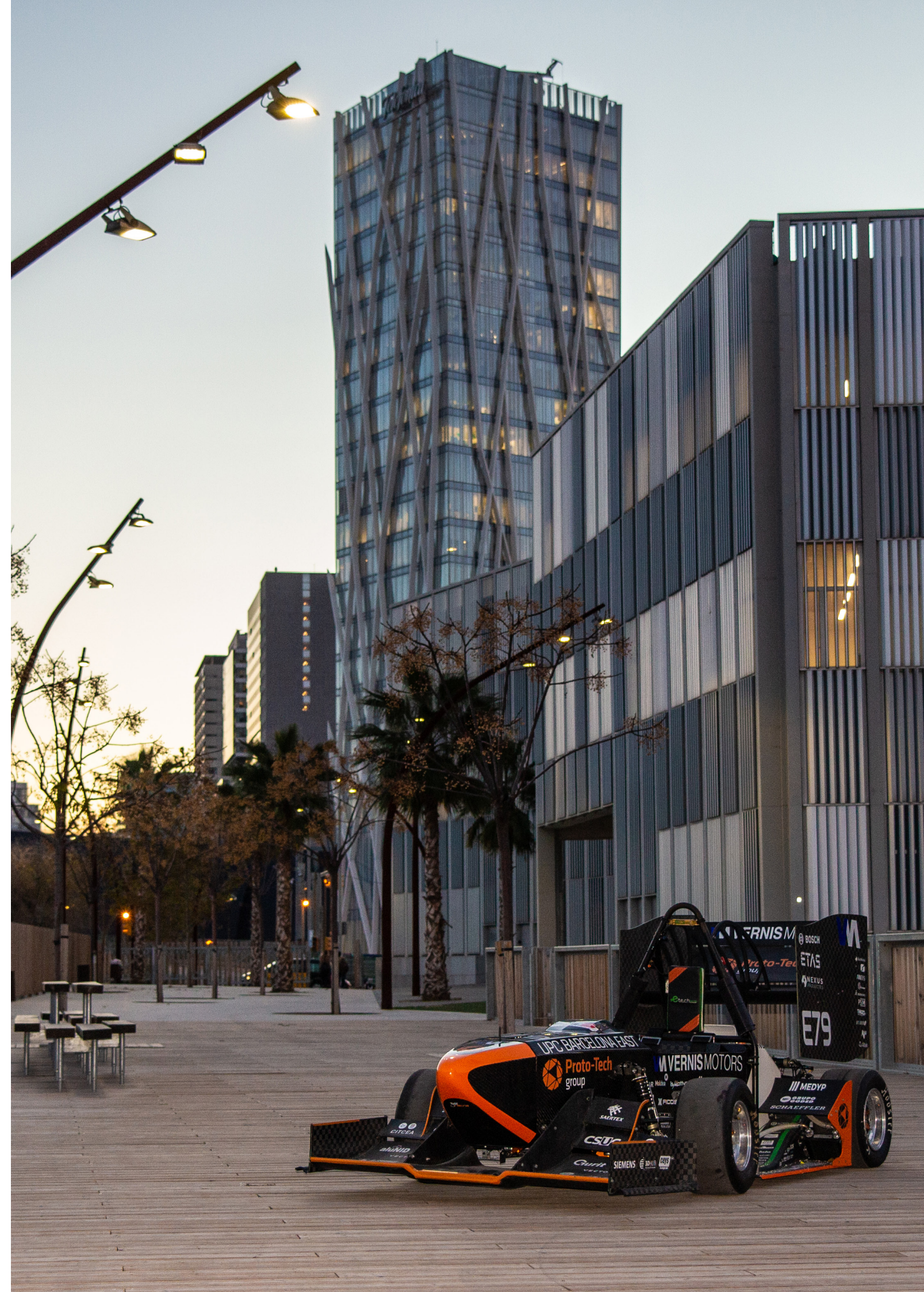
The EEBE is located in the brand new Diagonal-Besós Campus, which opened its doors on the past 2016-2017 course. Its objectiu is to become a center of high quality in the engineering world of the XXI century, national and internationally.

The school of engineering, harbours the activites that had place in the old Escola Universitària d'Enginyera Tècnica Industrial de Barcelona (EUETIB), with the offer of bachelors and masters in mechanical, electrical, electronic and biomedical engineering. Also it integrates part of the Escola Industrial Superior d'Enginyeria Industrial de Barcelona (ETSEIB) studies, as chemical and materials engineering. This is the reason why the EEBE campus is the home of 3500 bachelor, masters and PhD students and 400 docents and investigators.



The modern and technological facilities of the EEBE and the variety of engineering degrees, helps the creation of reserch groups and student associations, where the sutdents practice the theory learnt in the university and develop new habilities which will help them in the professional world.

A clear exemple is e-Tech Racing, where every member has its own basic theory competence. A part from the university theory, each member has its own specific field to develop in the racing car.





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Proto-Tech group

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2018 | 2019 Season

Past, present and future

After reaching the goal of competing in Spain and in the Czech Republic in the same year in 2016-2017, and finishing the endurance of each competition with our third racing car, the team decided to go for an ambitious project to face the next season, where the concept of the car changed completely. All the departments, mechanical, electrical and electronic, changed everything done before and had to work very hard to design their new systems and components and at the same time adapt them to the new ensemble.

Although, the manufacturing and mounting period had problems and were more large than was expected, because of the complexity that had some of the new essential parts of the car.

The consequence was that the ETR-04 didn't reach the deadline and the team wasn't ready to compete in Formula Student Czech Republic. From that moment, we focused our efforts in Formula Student Spain, but after the testing sessions previous to the competition, some problems appeared with the high voltage batteries of the car. This problem destroyed completely the electrical and electronic system and the team wasn't capable to pass the electrical Scrutineering.

Despite of having a good result in the static events, the ETR-04 didn't run in the dynamic events.

After this results, the team decided to plan the 2018-2019 season giving more importance to key points as fiability. This is the reason why one of the sportive objectives is to go to a foreign competition, outside of Spain, and to finish all the dynamic events in all the competitions we go, showing at the same time a competitive level.

Even so, the technical objectives have been planned in the way that complement the sport ones. Some of these are testing in a hard level the car in the remaining time of 2018, test the 2018-2019 car more than 150 km before the first competition and design our car using the V methodology with the required documentation, this is a key fact to know what happens to our car and to be conscient from the begining of the problems of manufacturing that can appear.

To sum up, we could say that this season will be focused in stablishing some strong basis maintaining the concept of the racing car to study it better. With this, we will be ready to reach a big goal in 2020, to become the best spanish team.





Planning

Study, testing and re-design

PTo reach the previously mentioned goals, this season the concept of the car will remain the same. With this we pretend to APROFITAR the largest quantity of resources in the study and apreintance during the first half of the season, in order to know how to improve the car in fiability and rendiment.

This first half, has been from september to december, and have consisted in testing the car, study the changes in the Formula Student rules and to look and solve problems, also we have opened the re-design season for some components and systems of the vechile.

With this, and with the first steps of 2019, it will begin a hard but short re-design period, in which we will close a new and definitive design with the basic changes studied in the first had of the season.

Consequently, the manufacturing period will begin with more time of the habitual, so we can prepare the static events with more dedication.

The testing period of the ETR-05 will begin on May, to reach de goal of the 150 km of testing before the first competition. It will help us to have feedback with the pilot and all the team members and departments, improving the performance.





Our Sponsors

Commitment and professionalism

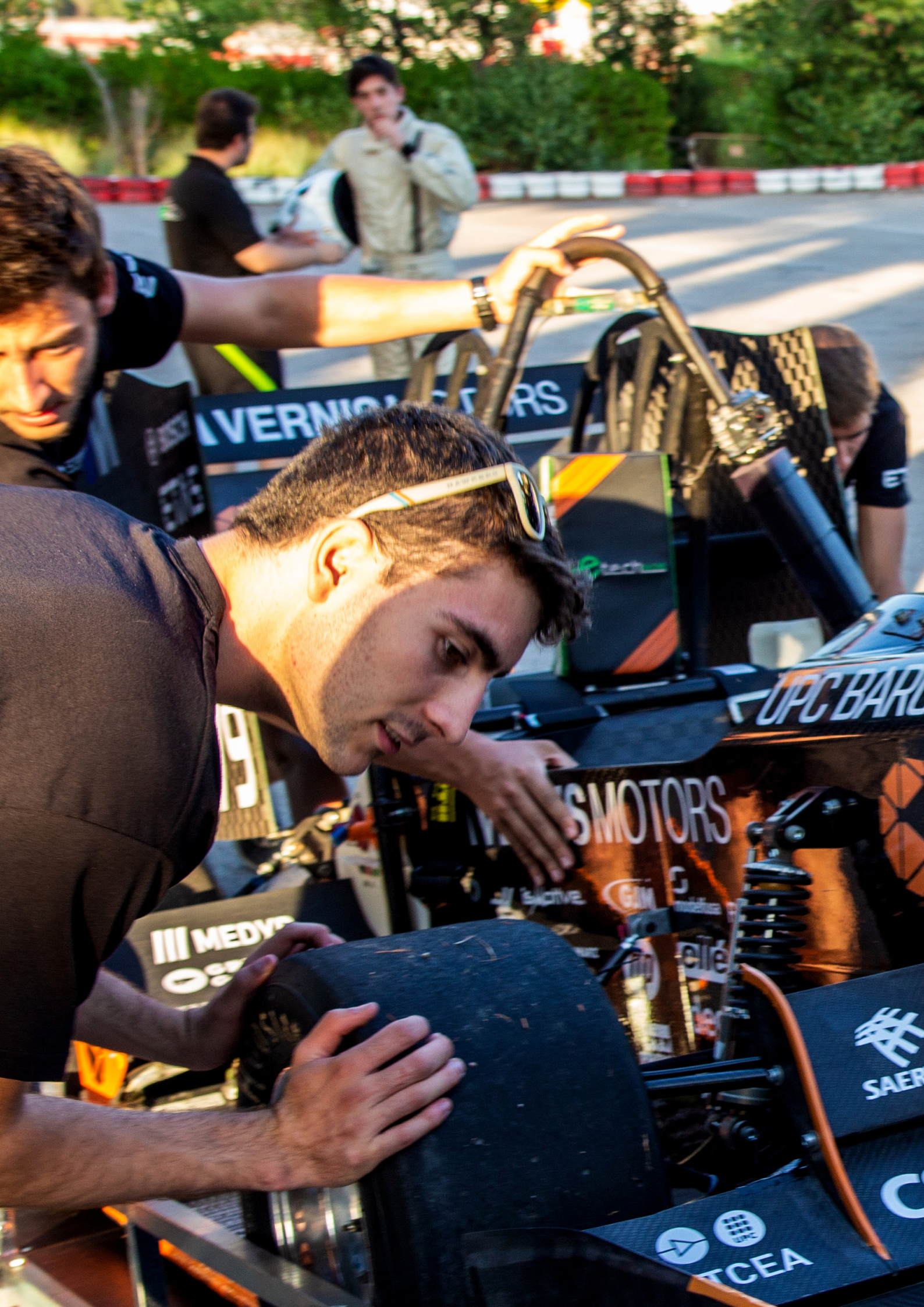
e-Tech Racing would not be possible if all the people, companies and institutions that believe in us. Thanks to them we are capable to build our ideas and our dreams. They are one of the fundamental pillars for the team.

Wagging on the engineers of the future, be committed with the society and the e-mobility are some of the reasons that encourage to be part of the e-Tech Racing family.

Becoming part of our project entails mutual benefits, because collaborating with us implies visibility thanks to Formula Student, the fact that is an international competition attracts lots of visitors and companies of the automation sector. Also, gives repercussion in the media when there are news from the team. We try to offer to our sponsors all the visibility that they want, giving them diffusion on the social networks as well as giving them the possibility to have the car when it is required.

Example of this, is the appearance of the ETR-04 in the No Limits Barcelona event, organized by Rally Classics in the Moll de la Marina (Barcelona) on September. The car was exposed next to a Formula E. On October, the ETR-04 attended in collaboration with VERNIS MOTORS to Expoelèctric, the top e-mobility trade-show in Barcelona, the capital of the mobility of the future of Europe. Besides, on November, the car was in Madrid in another event, Matelec with MEDYP, one of our sponsors. Also, on December, we left the car in the Siemens facilities in Cornellà as a sign of gratitude for their help and commitment.





Season 2018 | 2019 members

Formula Student Team



Manuel Montesinos
Team Leader

Directive

The board of directors is the responsible of the administration of the team and the project. It is made of one Team Leader, four technical Chiefs who are in charge of the mechanical, electric and electronic areas and two Chiefs in charge of the non-technical areas, as Marketing & Management and Operations. Their objective is to warrant the correct functioning of all the departments of the team, this is why they have to work as one in all moment.



Enric María
Chief Mechanical Engineer



Sergi Valdezate
Chief Mechanical Engineer



Arnau Reina
Chief Electronic Engineer



Ramon Serrano
Chief Electrical Engineer



JoanMiquel Pujol
Chief Marketing Officer



Marta Alfonso
Chief Operating Officer



Núria Bonaga
Brakes & Uprights



Oriol Almendro
Side Wings & Manufacturing

Dynamics

The Dynamics department has the aim to achieve the major gripping ability in every situation and that the driving of the race car becomes the more comfortable to the pilot. The department is subdivided in vehicle dynamics and aerodynamics.



Marcel Muxella
Rims & Hubs



Adrià Ferrer
Steering



JoanMiquel Pujol
Dampers & Anti Roll Bars



Raúl Pozas
Suspension Geometry



Enric Marí
Suspension Mechanical Design



Mireia Companys
Vehicle Dynamics Control



Arnau Amores
CFD & Rear Wing



Gonzalo Balot
Front & Rear Wing



Ramzi Achak
Side Wings



Oriol Freixa
Drivetrain Design



Jordi Caballero
Motors

Powertrain

The powertrain department is the one in charge of the transmission of the necessary power to the motored wheels. The department is divided in a electric subdivision, in charge of the battery package, motors and inversors and a mechanical part in charge of the transmission and cooling.



Sergi Valdezate
Drivetrain Design



Yaolun Chen
Drivetrain CAD



Miquel Vilà
Motors Cooling



Jordi Pérez
Accumulator Cooling



Juan Romero
Inverters



Àlex Sánchez
Battery Cells Management



Body

The body department is the responsible of the framework of the car. They study and design the monocoque to prevent its broke or some problem with it. Also, they are in charge of the ergonomoy, essential for the pilot to feel comfortable in the cockpit. They do the packagings for some electronic systems too.

Alejandro Solís

Steering Wheel & Driver's Seat



Javier Chavarrías

Pedal Box & Firewall



Gerard Alsina

SES & Laminates



Daniel López

SES & Laminates



Miquel Mas

Roll Hoops & IA



Àlex Sánchez

BMS

Electronics

The electronics department is the one who has to guarantee that the electrical and electroinc system is safe and it works correctly. Between the tasks they have to do, there is the design of security of the package, data acquisition, the main ECU or the Dashboard.



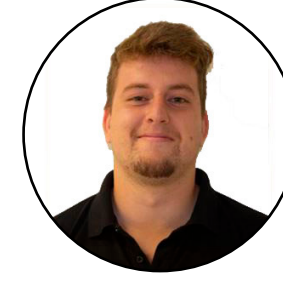
Marta Basquens

Data Acquisition



Pol Feliu

Sensorics



Ramon Serrano

Harness



Zeping Wang

Harness



Arnau Reina

Main ECU



Conrad Galli

BMS



Marta Alfonso

Dashboard



JoanMiquel Pujol
Chief Marketing Officer

Marketing

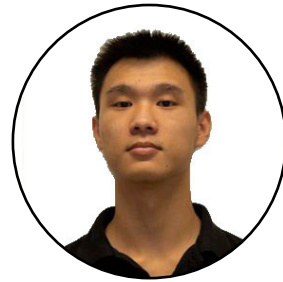
From the Marketing department is managed the tracking and the relation with our sponsors and the public relations of the team in general. It is in charge of the web page and the social networks of the team, the publications and the difusion of news related with the team and the sponsors.



Núria Bonaga
Corporat clothing & Events



Zeping Wang
Publications



Yaolun Chen
Website



Enric María
Media



Marta Alfonso
Chief Operating Officer

Operations

The Operations department is responsible of the logistics of all the tasks related with the team, intern or external. They organize the shifting and the transport of the car to the competitions, events or places.



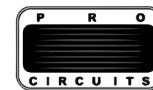
Javier Chavarrías



Alejandro Solís



Daniel López





FORMULA STUDENT TEAM



mk.eebe.etchracing@upc.edu