



ENHANCING CYCLING PERFORMANCE & EXPERIENCE

In the minor in Sports Innovation (all faculties) and the Master's in Integrated Product Design (faculty of Industrial Design Engineering, specifically in the course Advanced Embodiment Design), student teams from TU Delft are designing bicycle accessories such as helmets and sports glasses for BBB Cycling that contribute to cycling performance and experience. They are exploring how to improve these accessories by using new materials and technologies.

Award-winning aerodynamic helmet for bicycle racing

One of the assignments was to design a helmet that provides enhanced safety, reduces air resistance and optimises ventilation. With help of 3D modelling and a set of prototypes used in wind tunnel testing, the student team came up with the 'Tithon'.

BBB Cycling was very happy with this great result and further developed the product for market production. The project team received the Taipei Bike Show Design & Innovation Award for their innovative helmet, because it has a smooth and even surface, while also providing enough ventilation for intense exertion. This advanced aerodynamic helmet features an airflow cooling design to optimise airflow. The aerodynamics combined with thermodynamics offer a balance between low drag and good ventilation, without compromising on rider comfort. Air is drawn in via vents at the front, while the lid circulates the flow over the head before diverting air out of the rear of the helmet. Professional cyclists in the FDJ team used the Tithon during the Tour de France.

The right focus

Tjerk Bakker (Product Developer at BBB Cycling) explains his experiences with working with students: "We appreciate that the TU Delft Sports Innovation Minor and the Master courses have the students pick between topics from various industries. The student teams choose which assignment they want to work on. This has a strong advantage, since the students who choose to work with us, are highly motivated about our particular assignments. For the duration of six months, this team of six students commit themselves to BBB Cycling. The TU Delft student teams design bicycle accessories, such as helmets and sports glasses, for us. Their designs aim to contribute to the cycling performance and experience. They explore the advancement of these accessories, by using new materials and technologies."

Partner

BBB Cycling

More information

bbbicycling.com

Highlights

2016: iF Design & Innovation Award

- Tithon Helmet

2016: Red Dot Design Award - Tithon helmet