# GreenTechLab is looking for You!

Field of Study: Mechatronics / mechanical engineering
Traject: Internship / graduation

## High Tech Agriculture Delta Manipulator

What do chemical pesticides, soil compaction (or compaction) and soil impoverishment have to do with each other? These are all caused by the current way of cultivating fields (open cultivation) where crops are grown in a mono culture (one and the same variety). Namely: The intensive use creates soil poverty, which is reinforced by continuously growing the same crop and selectively fertilizing it, specifically for this crop. Over time, there will be a poverty of nutrients that disrupts the biodiversity of the soil. As a result: fertilise even more. Because of the heavy agricultural machinery (read: tractor) the soil is compacted over and over again. This results in poor water irrigation that strengthens the compaction of the soil, which ultimately settles the biodiversity of the soil.

Chemical weed control (especially glyphosate) is prohibited over time. They are already banned in many sectors. As a result, a lot of crop damage occurs in a mono culture (pesticides quickly spread to the adjacent 'plant' and are therefore easily spreadable and difficult to contaminate without the use of chemicals). Another major disadvantage is that weeds are given the opportunity to grow and thus 'compete' (light, nutrients and space) with the crop.

We would like to develop a delta manipulator that is suitable for the heavy agricultural environment. This includes the wet, sandy environment where crops are grown. The manipulator will be part of a total system as shown in the first figure above. You will start by drawing up the requirements, defining functionalities, coming up with solutions, after which a concept will be developed into a prototype.

You do your internship and graduation at GreenTechLab. This is a technical Expertise Centre with a focus on the synergy between the agro-food sector and technology. This Centre of Expertise has a far-reaching partnership with Fontys Hogeschool Techniek en Logistiek in Venlo (FHTenL), where they are also based. The team consists of 7 specialists with a background in Mechatronics, Mechanical Engineering, Process Engineering, Industrial Product Design and Computer Science.

We are looking forward to your application!

www.GreenTechLab.nl/vacancies