



Philips Drachten

Technische Informatici (Technische Informatica), Engineering 1 (Elektrotechniek, Werktuigbouwkunde), Engineering 2 (Technische Bedrijfskunde, Toegepaste Wiskunde),

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Philips Drachten develops high-quality innovative, consumer-oriented products for a worldwide market. These products aim to make life more comfortable for people and include Senseo coffee machines, Ladyshaves, vacuum cleaners, beard trimmers, air purifiers and Wake-up Lights. Next to this, Philips Drachten has been the development and production center of the advanced electronic Philips Shavers since 1950. More than 2000 people of 35 different nationalities work on our site, making Philips Drachten one of Philips' biggest development and production centers in Europe.

Afstudeeropdracht: september 2020 - januari 2021

Internship: Allergen-free air

DESCRIPTION ASSIGNMENT

The assignment focuses on hay fever persons who are allergic to mites, pets or pollen. 20 – 30% of the European population (!) falls in this group. Hay fever not only leads to nose and eye symptoms, it can also impart sleep, productivity at work, school examination results and lead to car accidents.

Medication is available but not very effective. However, allergen protection measures could also help to reduce symptoms.

Portable air purifiers might serve this purpose. Current models are developed to remove stable, air-borne pollutants. Allergens are different as they are normally deposited on floors and other surfaces. Human activities resuspend them into the air but for only short periods of time.

This assignment aims to achieve the next step in allergen protection: redefine air purifiers in order to create allergen-free air around the hay fever person, reliably and effectively.

TASK DESCRIPTION / FUNCTION WISHES

The internship explores new allergen-dedicated air purifier architectures.

First, air-flow dynamics calculations are carried out to model the effectiveness of current devices versus resuspended allergens. In a second step, based on gained insights, the student proposes and models' alternative architectures in order to achieve a far higher protection performance. Preferably, the calculated superiority is complemented by experimental proof