

# Holst Centre's researchers make dreams come true

*Young professionals design new combinations*

*A visit to Holst Centre, located at the High Tech Campus in Eindhoven, opens visitors' eyes to the possibilities that smart materials, ICT and special devices offer to address challenges in the fields of health, mobility and communication. A small group of High Tech NL Young Professionals took the opportunity to get to know Holst Centre on Thursday June, 15<sup>th</sup>. They were asked to do a brainstorming session on new possibilities by combining surprising technologies developed by Holst Centre researchers.*



## **Over 30 nationalities**

Ms. Najat Loiazizi is the HR business partner at imec/Holst Centre. She is very familiar with the Human Capital agenda of High Tech NL. In February of this year she joined the program by participating in the MIT European Career Fair in Boston, USA. "We employ people of over 30 nationalities. Their CVs are very specific. Even as a relatively small organization, at this very moment we have 10 vacancies. We've joined the MIT European Career Fair now for the third time. This action brings us in contact with the right people. Every year we hire at least one new colleague due to this activity. We like to open our doors to High Tech NL's Young Professionals". Najat prepared a complete visit, including several presentations, to introduce us to the activities of this research institute. There was also an interactive brainstorm session and several demonstrations.



*Mr. Ton van Mol: "Reinforcing ecosystems"*

## **Advanced research programs**

The first speaker was Mr. Ton van Mol. He is Managing Director at TNO/Holst Centre. Mr. van Mol explained when and why -Holst Centre was established. Holst is a combination of the well-known Belgium IMEC institute and the Dutch TNO institute. By joining forces over 10 years ago, -Holst Centre is able to carry out advanced research programs in fields like flexible electronics, wearable health solutions and wireless ultra-low power connections.



*Young Professionals are fascinated by the research programs of the Holst Centre*

Holst Centre employs 220 people, most of them at the masters and PhD level. Additionally, about 50 PhDs and Master students are doing research for the institute together with 30 industrial residents. As Philips was a strong proponent of the initiative to establish Holst Centre to guarantee shared facilities in the field of research, it is not a surprise that the Holst Centre is located at the High Tech Campus – a former Philips research facility - which currently is a community of 130 companies employing over 10,000 people.

## **The internet of health**

The next speakers were Mr. Chris Van Hoof and Mr. Christian Bachmann. Mr. Van Hoof presented cutting-edge possibilities for

monitoring health and carrying out diagnostics. Holst Centre develops advanced tools for prevention, cure and care. Mr. Van Hoof gave some examples of stress monitoring and stress management which simplifies EEG and ECG processes. Holst supports its customers in guiding new technologies to the market. These innovations can easily take more than ten years. Mr. Bachmann has an Austrian background. During his PhD he was attracted by the research issues and approach of the Holst Centre and thus decided to move to the Netherlands. He declared: "We are able to contribute to the rapid developments of the Internet of Things by offering ultra-low power and cost solutions". He provided some detailed examples of sensor networks, wireless communication and energy efficiency. Above all, he made clear that finally all 'things' will be connected. In a special program, Holst is working out the internet of health – a special approach for offering ultramodern solutions in the field of healthcare.



*Transforming a dream into reality*

### **Health concepts for the future**

Mr. Bachmann challenged the visitors by asking them to work out their dreams into realistic solutions for tomorrow. By discussing in small groups, two surprising 'new combinations' were invented. One team presented 'the everything' and the other team presented its concept for lifelong quality of life. Apparently, due to the fact that the average life expectancy exceeds the age of 100, people are obsessed with the idea that one should be mentally and physically vital as long as possible. By combining wearable sensors with wireless ultra-low power communication, big data and alarm systems, they were able to present health concepts for the future. Which might be realized tomorrow!

### **Tomorrow's technology**

Ms. Najat Loiazizi had prepared some interesting demonstrations to give the participants a good idea of how research can result in useful applications. A measuring system was demonstrated which not only measures the quality of the air surrounding us, but which gives instructions to take the right actions as well. This concept can be used in classrooms for example to make sure that temperature, humidity and CO<sup>2</sup> stay at the desired levels. These days, tests are being carried out in the Amsterdam Arena, where a lot of people come together while the roof is closed. Another demonstration showed that flexible substrates can be printed with electronic connections in such a way that they can be applied in clothes, hiding sensors and communication devices which can hardly be noticed by the person wearing them. A glimpse of tomorrow's technology today!



*A social scientist and a technical engineer present their vision on the internet of health*

Unfortunately, some Young Professionals who subscribed were not able to join due to significant changes in their company. We are all convinced that they missed a lot. For example, an answer to the question: 'What will our lives look like if we reach the age of 100?' Our hosts of the Holst Centre have given us a clue. And they can make it come true!

Thank you once again Najat and colleagues for this unforgettable program!

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Jos van Erp  
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