



by-wire.net
design & research in fashion technology

Let's Not Waste the Power of Fashion!

Smart Fashion is economy and empathy: lets innovate for a better world.

Marina Toeters is initiator and the driving force behind **by-wire.net**. Together with a widely developed network she is dedicated to designing and prototyping innovative textile products and garments. Collaborate with us for relevant and circular textile products and a supportive fashion system.

Contact us to participate in one of the development processes for innovative and better garments and textile products!

info@by-wire.net or call +31625451128



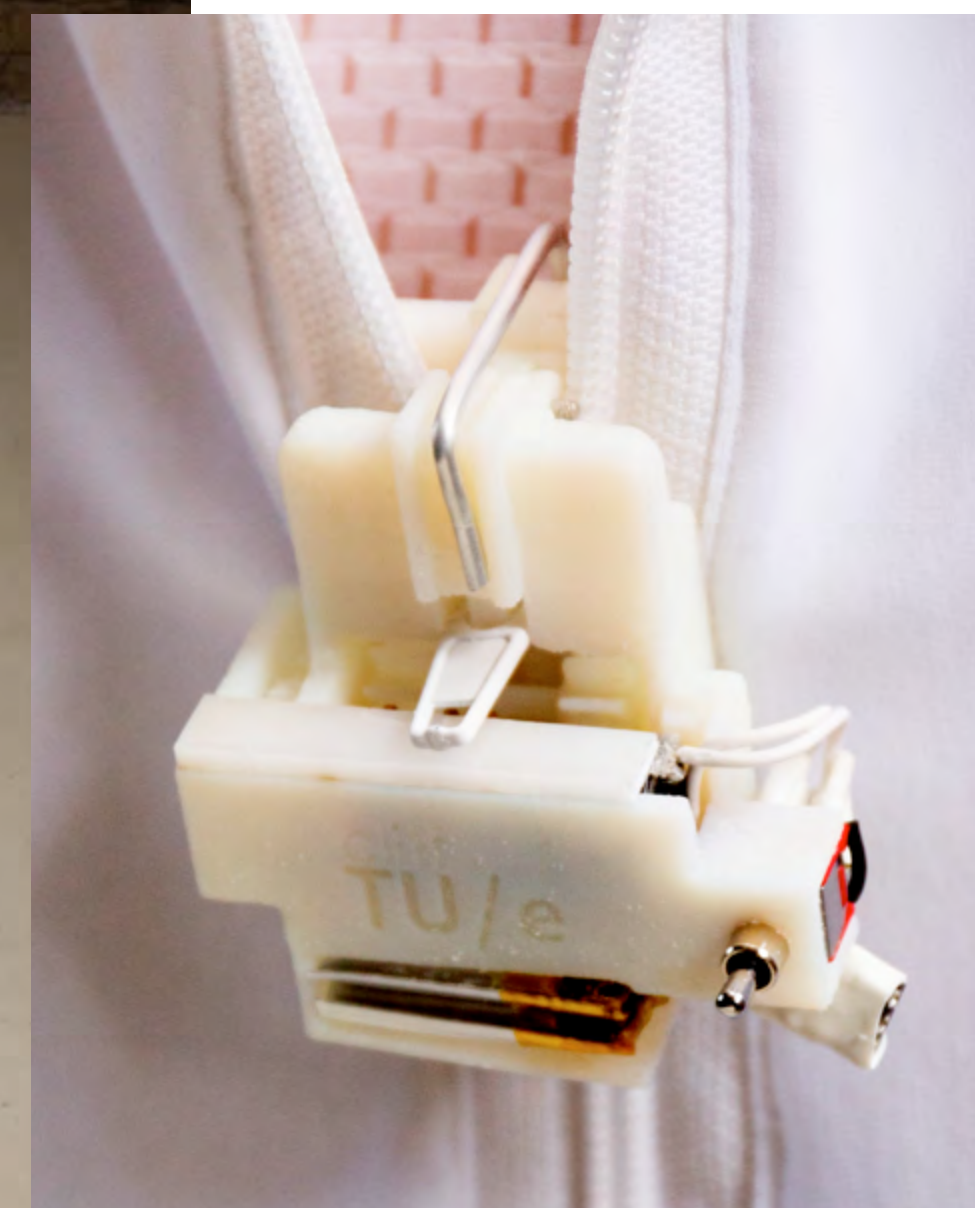
Total concepts and working prototypes: NazcAlpaca

High-end body monitoring & wearables for environmental awareness

With the help of Bear Creek Mining S.A.C. in Peru **by-wire.net** developed the first proof of concept to combine alpaca yarn with innovative wearable technology: NazcAlpaca. An innovative training system to avoid work related stress issues. The NazcAlpaca shirt monitors your body and is able to give direct feedback via tiny vibrators. With the app you can adjust settings, start training and check your history. Two scarfs can measure the air quality and temperature around the wearer. In future we hope to develop them further towards more robust, reliable and mass producible products: Towards supportive, innovative and beautiful fashion. **Movie>>**



Laurentius
lab @TU/e



Mohamad Zairi Baharom

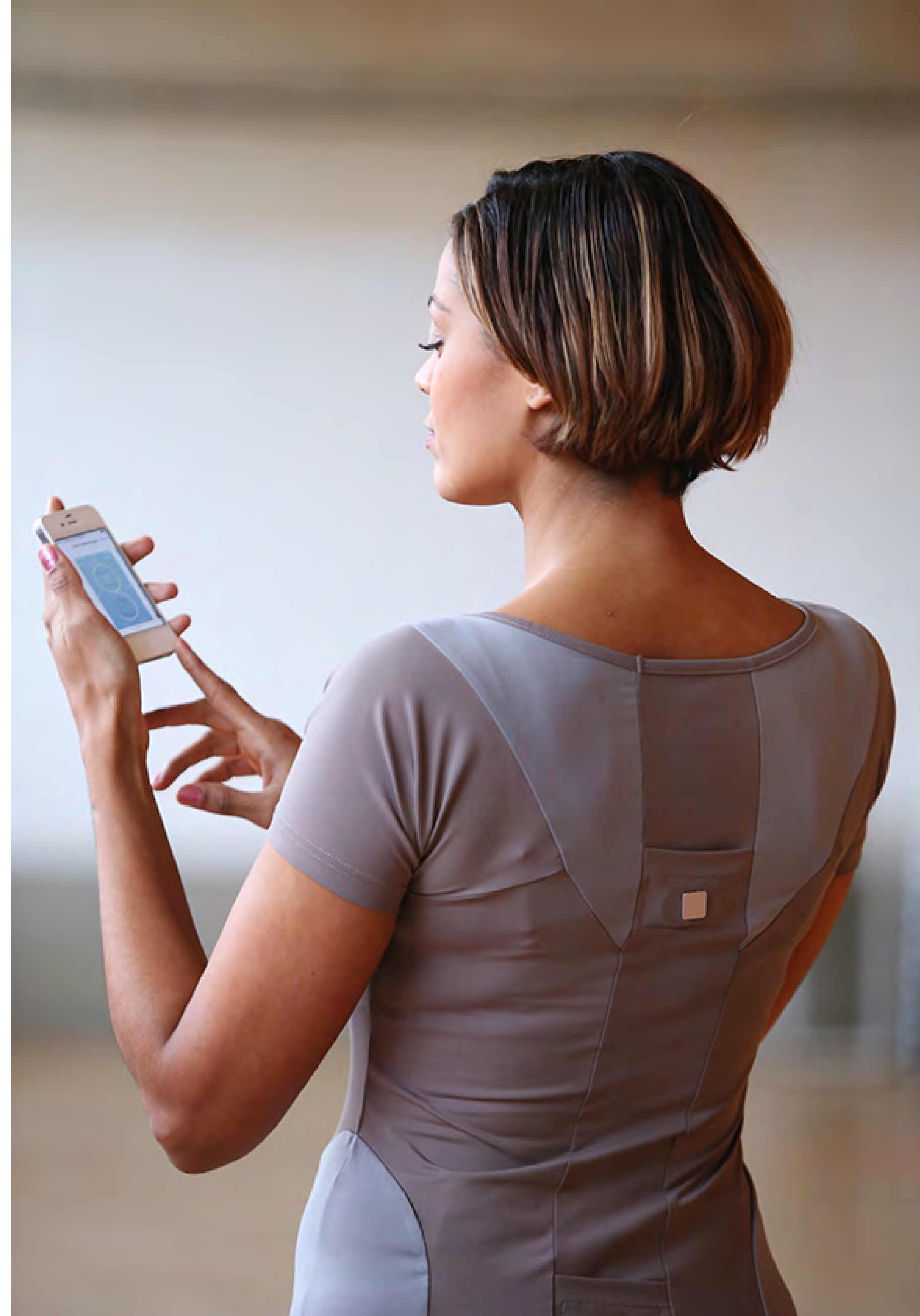
Actuation in Fashion

What to do with all this body monitoring data?!?

Nowadays it is quite possible to deploy textiles as sensors and avoid traditional hard sensors. Actuation (movement) turns out more difficult. It is advantageous to combine sensing and actuation, similar to ecological perception theory. Although several actuators are known, they all have significant disadvantages.

As a long term research topic we like to experiment with actuation possibilities like spiral micro tactility (**Pied de Pulse**), **4D Dynamic Knit**, and **Cliff** • the automatized zipper.

This can give direct information to the wearer in a closed feedback loop, just as ecological perception theory learned us to do.



Caring Work Wear

by-wire.net was involved in the wonderful co-creation process of 4 ambitious care /cure institutes, three work wear producers and textile experts.

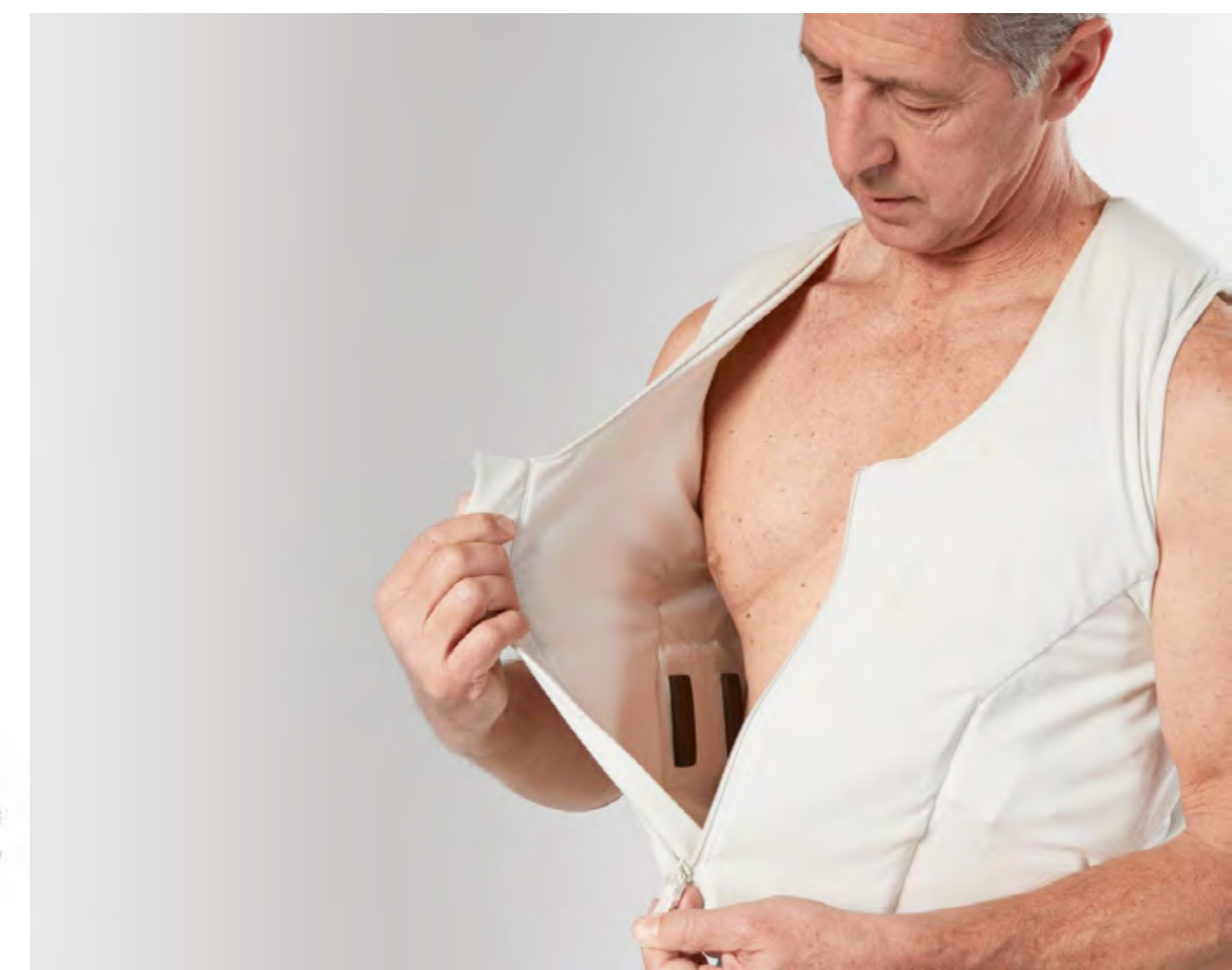
The posture sensor, the gas sensor, the supportive under layer, the supportive pattern design and the comfortable materials. The materials are as sustainable as possible and production done fair, so better for our world.

by-wire.net took the responsibility to inspire the group with the latest innovations, coordinate the development between the different stakeholders, develop the concept and direction, design the garments together with Marloes Blaas and shared the developments and gained knowledge via process documentation and catwalk shows as you see here.



garments for well-being and medical applications

by-wire.net is working with the world's top brands to build solutions to support a growing number of 'on body' medical applications, from **heart**, lung and brain monitoring solutions to **blankets** and **accessories** which provide light therapy.



Idea & concept generation for a better future



The user and its body are the centre of concept generation for innovative products with added benefits to society. But development processes can also start from a material, technology of processes perspective. by-wire.net organizes hands-on brainstorm sessions with clients and experiments [quick-and-dirty prototyping] with materials and shapes to solve certain problems and come to new ideas. Sustainability and 'doing better' is always a key topic for by-wire.net.

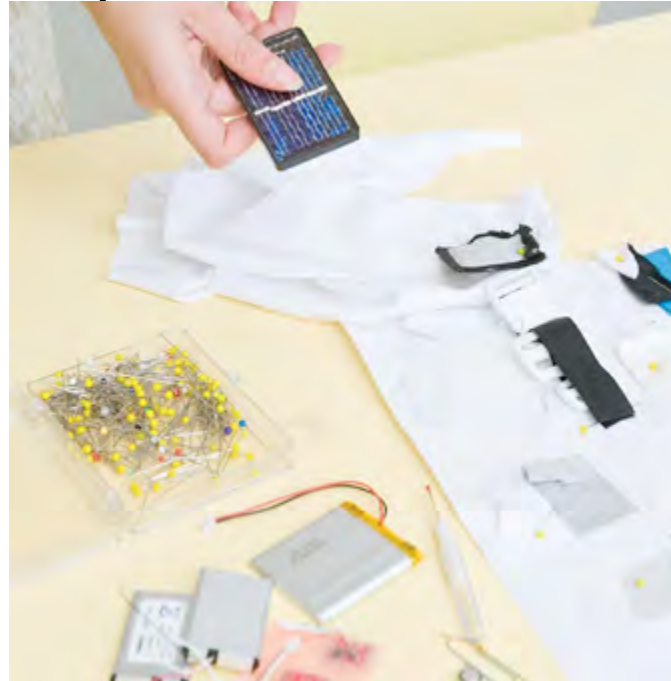
Prototyping wearables



by-wire.net is able to make working prototypes of wearable electronics in small badges in collaboration with the by-wire.network. The by-wire network is well equipped to develop and execute: pattern drawing, fitting models, source suitable fabrics, accessory and haberdashery, soft electronics, sew / knit / weld / glue the parts together, labelling,

photo shoot, technical drawing and detailed process documentation.

Prototyping tools, textiles and components in stock



Sewing machine (Pfaff), Laser cutter (HPC), 3D printer (Ultimaker), lock machine (Toyota / industrial), coverlock, knitting machines, iron, heat press, cutting table, power supply (Votcraft), soldering iron, ultrasonic welding (Sew Systems Ltd). Next to the consumables – fabrics, accessory, haberdashery, yarns, electronics and literature – these tools enable to react and prototype quickly. The workspace and tools is also usable during workshops and brainstorm sessions.

Intermediary between technicians and designers, for companies and students



Fashion and technic are different worlds. This results in a collaboration gap between fashion and technology. Marina Toeters tries to bridge the gap between those two branches. During this multidisciplinary way of working it is often hard to find each other, because of lacking shared history and referees.

by-wire.net has experienced these difficulties and is able to move between the groups and link people on content, expertise and attitude.

Innovative garment design



In collaboration with the client by-wire.net starts a design process for innovative textile products. Wearable technology and textile products are experienced as very intimate, because they are worn onto the body. Look and feel of the product is very important. What do you want to communicate with the product? By product design and prototypes by-wire.net advises marketing, public relation and communication departments how to design and position their new products.

Support in up-scaling production



The by-wire.facilities can produce a maximum of about 10 test-prototypes of innovative garments, accessories or textile products. After that we support up scaling by connecting you to high-end manufacturers, source materials and (if needed) complementary production facilities, develop technical drawings and share the latest learning's and other expertise with the manufacturers.

R&D project management



Innovative materials & smart textiles and how to apply these in society with new production processes? Projects like these become very complex due to multi stakeholder involvement. In dept knowledge is key to ensure the quality. We have experience in guiding teams through innovation processes.

Education, lectures & seminars



by-wire.net loves to expand innovative fashion by sharing knowledge. Marina educates fashion students in ecology & technology; Introduces innovative materials and new processes to future designers at Eindhoven University of Technology; And product development to textile students. Besides that she gives lectures and seminars for client-specific-issues and advises designers interested in material and process innovation. Interested in a hands-on workshop? Get in touch!

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A relevant and supportive fashion system for 'every-day used' apparel.

Although we work on medical and work wear projects, all our efforts and developments ultimately aim towards a relevant and supportive fashion system for 'every-day used' apparel and for everyone.

Contact us to participate in one of the development processes for innovative and better garments and textile products!

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