CHANGE – the next blue

smart and sustainable spaces in fashion and (interior-)architecture

Cooperation Project between
Epson GmbH Deutschland
Niederrhein University of Applied Sciences
Faculty
Textile und Clothing Technology

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(Picture detail cover: T. Scholl, 2016)

Change - the next blue
smart and sustainable spaces in fashion and (interior-)architecture

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University of Applied Sciences

Textil- und Bekleidungstechnik
Faculty of Textile and Clothing Technology

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„Perhaps it is due to the nature of things themselves that the development of digital drafting and production methods, which are based on the principles of repetition and differentiation, has resulted in an intensive focus on pattern design.“ (Ben Pell, 2010)

„Change – the next blue“ in fashion with digital smart textile solutions. „BLUE is the new GREEN of the sustainability debate in design“ (M.-E. Wachs). This hypothesis laid the foundation for the new interdisciplinary project „Change – the next blue“, embarked upon by the Faculty for Textile and Clothing Technology. Working in cooperation with Epson GmbH Germany, the project, with its focus on sustainable, smart design solutions, began with experimental printing and examining the digital printing of the future.
Within the scope of intelligent textile systems, which increasingly work with natural components or based on bionic role models, blue was defined for innovative textile applications that concentrate on efficiency of resources and energy, based on the application of bluesign and blue technology
within the automotive industry. >Passion makes the difference in smart and sustainable textile design – CHANGE!<

We would like to thank Epson GmbH Germany, in particular Mrs. Knopp and Mr. Stephan, for their excellent and extensive collaboration and for the experiments performed at the Epson Solution Center in Meerbusch. We would also like to thank Premier Textiles Ltd. for the fantastic and fascinating material donations.

Prof. Dr. Marina-Elena Wachs: On behalf of the young talents, on behalf of the Hochschule Niederrhein, University of Applied Sciences, and, in particular, Prof. Dr. Rabe (Head of the FTB Institute).

Preface: Frank Schenk, Head of ProGraphics and Industrial Printing, Epson Deutschland GmbH, Germany

Epson is placing its trust in cutting-edge technology – ink. Inkjet printing enables the textiles industry to replace traditional, expensive processes with compact and clean equipment. Products such as our Epson SureColor SC-F printer for direct and dye sublimation printing on textiles are great examples of how individual textiles can be produced quickly, easily and cost-efficiently. In collaboration with students from the Hochschule Niederrhein, we were able to demonstrate the benefits by way of examples, and truly bring them to life. We actively followed the whole process, from the initial idea right up to the completed textile. We thoroughly enjoyed this, and the results speak for themselves. We would like to thank everyone involved in the project from the Textile and Clothing Technology faculty at the university, led by Prof. Dr. Marina-Elena Wachs.

Frank Schenk, Head of ProGraphics and Industrial Printing

guideline: blue as smart and sustainable design solution:

I Fashioning Textile Design

case studies MA- and BA-Students DesignTextile Products and Design Engineering Fashion/Textile

Students‘ designs:

1. Jonas Stracke >blue response<
2. Nastassia Stork >Lanvin New Romance<
3. Nany Reich >Urban Flower<
4. Theresa Scholl >Pink Bionic<
5. Marina Cheung >chrysaora poësis<
6. Jirina Greyn >Little India<
7. Lisa Matzkat >The Untouchable<
8. Louisa Holdschlag >Prêt-à-jeter<
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11. Fidan Bektas >in memorian<
12. Jonas Stracke >culture<
13. Astrid Nisch >Soundtrack<
14. Jessica Nürnberg >Dissolution of Time<
15. Jia lin Chov >Design element electronics<

Jonas Stracke, BA-Student Design-Engineer Fashion

Blue Response

An aesthetic and informative examination

„What lies under“, Ferdi Rizkiyanto‘s work from 2011, clearly illustrates that change is essential. It shows a child standing on the beach, lifting up the ocean like a blanket to reveal a vast amount of refuse underneath. The problem lies in the fact that the world‘s oceans are simply regarded as a vast blue expanse. Yet, at the same time, the destruction of the oceans‘ ecosystems by our refuse goes largely unnoticed by the public eye. „Blue Response“ by Jonas Stracke examines the destruction of these fantastic and wondrous worlds by plastic, and engages the viewer in the issue through an aesthetic confrontation.
With the help of sublimation printing carried out at the Epson Solution Center Germany in Meerbusch on materials provided by Premier Textiles Ltd., the importance of both technically sustainable printing methods and the state of the world‘s oceans is addressed as a narrative.

„I see little glory in an empire which can rule the waves but is unable to flush its sewers“ – Winston Churchill

Blue Response

Jonas Stracke
BA Design-Engineer Fashion
Niederrhein University of Applied Sciences
Supervisor: Ms. Prof. Dr. Wachs

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Photo: Tamara Hansen, Model: Juliane Peters

Nastassia Stork, BA-Student Design-Engineer Fashion

Lanvin - New Romance

My inspiration for developing the pattern was the topic of my student research project about the fashion house Lanvin, which also had a „blue phase“. I set the „L“ from Lanvin in the Times New Roman font with pearl necklace elements from the label‘s earlier designs, and transformed this into my repeating pattern. An additional „L“, positioned crosswise and filled with hatching, lends the pattern a 3D look.
At the beginning of her freelance career Jeanne Lanvin, the founder of Lanvin Paris, designed elegant strap dresses, known as pinafore dresses, which were both practical and comfortable. My first design „Lanvin – new romance I“ is based on these characteristics. I developed a dress design featuring a panel with the patterned material on the front. The dress also has a petticoat on which the „L“ is interpreted in a modern way with a variety of print variants.
My second design „Lanvin – new romance II“ is a three-part design. The design consists of a bolero jacket, a top lined with material with a small pattern, and also a skirt. This design illustrates the transformation into the present day.

Lanvin - New Romance
Nastassia Stork
BA Design–Engineer Fashion
Niederrhein University of Applied Sciences
Supervisor: Ms. Prof. Dr. Wachs

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Nany Reich, BA-Student Design-Engineer Textile

Urban Flower

From blue-printing to blue print

The „Urban Flower“ model was created as part of the „The colour blue through the ages“ student project.
The concept is based on contrasts, such as the importance of the colour blue, along with manual and digital printing techniques. Dark blue is a symbol of wisdom, logic and modern technology. Within the context of technical innovation, this colour also addresses the human desire for trust.
This contrasts with the hand-made blossom. It creates a form of uniqueness and establishes a link to humans as individuals.
The outfit consists of a coat and a skirt, and reflects the interplay between inspiration from traditional blue-printing and the modern options provided by sublimation printing.
Given that one advantage of sublimation printing consists of the fitted patterns on the pattern pieces, which emphasises the uniqueness of every model, this effect was used with one of the blue design patterns, and precisely fitted to the individual pattern pieces of the coat.
A coat is a piece of clothing in which you feel comfortable. The dark blue enhances this feeling because it is also the colour of trust. Thank you to Epson GmbH Germany for the trust placed in us, and for allowing us to print at the Solution Center in Meerbusch.

Urban Flower

Nany Reich
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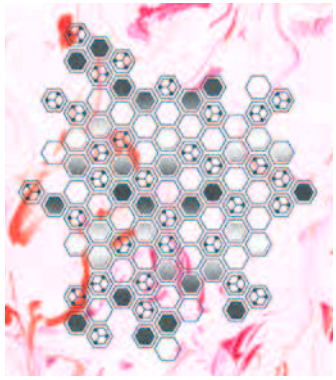

Theresa Scholl, MA-Student Textile Products - Design

Pink Bionic

Solar Trees in archiTEXTURE fashion

The Pink Bionic outfit, enhanced with the smart textile top, was inspired by the German Pavilion at the Expo 2015 in Milan. „Solar Trees“ were installed. These are objects made of a membrane equipped with organic photovoltaic technology (OPV). The printed conductive tracks absorb the solar energy from all directions, even with diffuse light, and conduct this to the storage unit at the root of the solar tree via a sophisticated steel mesh. This creates a closed system using nature as a role model. This organic photovoltaic structure was interpreted as a pattern for the outfit, and varied with an ornamental design. In contrast to the coloured pattern mix, the clean lines of the look are implemented on technical polyester materials. This was printed as a large-format transfer print at the Solution Center Epson GmbH Germany. A top was produced to illustrate how OPV can also be utilised with clothing, and is designed for use as a smart textile. The straps can collect energy with the smart design, e.g. for charging electronic devices.

In this case, blue is pink, and represents an innovative, energy-efficient textile.

PINK BIONIC

Theresa Scholl
MA Textile Products - Design
Niederrhein University of Applied Sciences
Supervisor: Ms. Prof. Dr. Wachs

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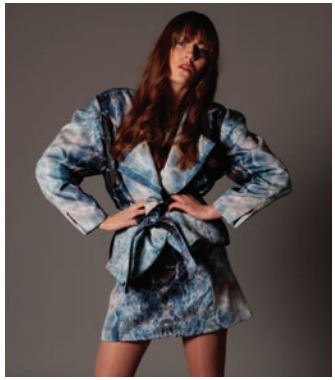

Marina Cheung, MA-Student Textile Products - Design

chrysaora poësis

Chrysaora poësis was inspired by blue technology and marine biology. Oriented on bionics and blue-sign, on structures and functions imitating nature, along with the sustainable production of textiles, the design creates a reference to environmental impact and ecological damage, in particular in the ocean. The ocean is an enormous CO2 storage tank, and thus the Earth‘s most important CO2 sink. The growing jellyfish population is an indicator of global warming, environmental pollution and overfishing. The biodegradable, fluorescent thread and the LEDs using pure biopolyester imitate the glow of jellyfish, and enhance the design with interdisciplinary, innovative and sustainable ideas. We extend our sincere thanks to EPSON GmbH Germany, where we sublimated the prints onto the polyester materials using state-of-the-art technology. >chrysaora poësis< is the name of the design by Marina Cheung, Master’s student at the Hochschule Niederrhein.

chrysaora poësis

Marina Cheung
MA Textile Products - Design
Niederrhein University of Applied Sciences
Supervisor: Ms. Prof. Dr. Wachs

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Jirina Greyn, MA-Student Textile Products - Design

Little India

My „Little India“ outfit was designed as part of the „Change – the next blue“ project under the supervision of Prof. Dr. Marina Wachs in the Intercultural Design course for the Textile Products Master's degree course at the Hochschule Niederrhein. The design was inspired by London, its multicultural atmosphere, and the link between India and the UK, in particular, which forms a striking element of London‘s scenery. I also reinforced this connection through the ornamentation in the patterns I used here by creating a type of typography inspired by both Western and Indian lettering. These characters were later enhanced using the digital program.
I selected a sporty, urban silhouette for the design that is consistent with the topic.
The collaboration with Epson GmbH Germany gave me a completely new range of options for creating my design as we were able to experiment with the printing techniques, and, as a fashion designer, it was a fantastic experience to create my own material. I thoroughly enjoyed the project and would love to use materials that I have created and processed myself more often.

Little India
Jirina Greyn
MA Textile Products - Design
Niederrhein University of Applied Sciences
Supervisor: Ms. Prof. Dr. Wachs

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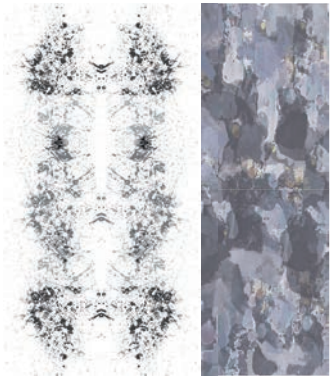

Lisa Matzkat, MA-Student Textile Products - Design

The Untouchable

>> The Untouchable << contrasts the „touchable“ with the „untouchable“.
Referring to the pollution of the environment, in particular the pollution of the ocean by crude oil or mineral products, transformation processes are illustrated in which elements react when they come into contact with each other. When they collide, a visual metamorphosis takes place and the movements and shapes symbolise natural, chemical and atomic explosions. In the end all that remains are traces and explosive forms with their own physicalness and structure. Experiments were carried out with ink and water using digital tools to research the aesthetics of transformation, and create new textures. Bulk stock airbag material, which is normally intended for bodily contact, was also used to carry out trials with a new print application at the Epson Solutions Centre – fantastically touchable.

The Untouchable
Lisa Matzkat
MA Textile Products - Design
Niederrhein University of Applied Sciences
Supervisor: Ms. Prof. Dr. Wachs

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Louisa Holdschlag, BA-Student Design-Engineer Fashion

Prêt-à-jeter

Adapt to your environment

A parka was developed as part of the „Change – the next blue“ project that is designed as an appeal against our „throw-away society“, and to draw attention to the wasteful use of natural resources.
The central issue is the search for solutions to counter overproduction, short-lived product cycles and the associated, planned obsolescence.
Inspired by nature, the parka provides a visual, functional and emotional demonstration of how to protect yourself and the environment. This protection is achieved through adaptation, such as that of the chameleon, the cockroach or the transforming leaf. Removable pockets eliminate the need for plastic bags.
Longevity and durability aim to prevent „buying for the rubbish heap“. Our consumer habits have to change in order to impede ongoing pollution and global warming.
Change – buy less, choose well. *Prêt-à-jeter* is ready to wear, namely prêt-à-porter.

Prêt-à-jeter

Louisa Holdschlag
BA Design-Engineer Fashion
Niederrhein University of Applied Sciences
Supervisor: Ms. Prof. Dr. Wachs

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Michael Wolf, MA-Student Textile Products - Design

Add-on Blue

Pump up the Change!

The city of Manchester is a patchwork of modern and historical architecture, hip club culture and traditions, along with a history of textiles and innovative technologies. The „Add-on Blue – Pump up the change“ design draws on the diversity of Manchester as a source of inspiration: the famous add-on architecture of the Manchester architect Norman Foster, historical quilting techniques and the city‘s infamous rave culture. The resulting outfit – a bomber jacket and a divided skirt – utilises both historical quilting techniques for optimum thermal insulation and also sustainable, innovative sublimation printing from Epson Germany. The prints with an architectural appearance encounter printed brick walls and the silhouette is inspired by rave style: sprawling and extravagant.

Add-on Blue

Michael Wolf
MA Textile Products - Design
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Supervisor: Ms. Prof. Dr. Wachs

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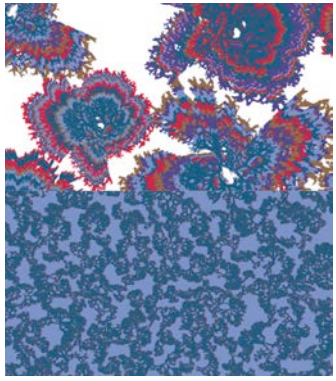

Laura Kunze, B.Sc. Design-Engineer Texile

„Fomitopsis“

Today‘s fast moving society yearns for new designs and outfits every day. Yet both those people manufacturing this clothing and the environment suffer greatly as a result. A T-shirt has a long journey from its point of production to its final owner. Today, dyeing processes that pollute the waste water can be partially replaced by digital printing techniques. Digital textile printing is becoming ever more important, and returns part of the textile production chain to Europe. The sublimation procedure enables the dye to be sealed onto the textile without any washing processes. The products are printed and refined in just two steps, at the very most.
The fitted design in the form of sectional images can be printed in a way that saves material, and then cut and sewn immediately afterwards. The designer‘s workflow is not hindered by long waiting times or unexpected colours.

The „Furfuracea & Pinicula“ textile designs are inspired by nature. The environment suffers greatly from textile production, yet every day it fascinates us with its beauty and diversity. The „Fomitopsis“ outfit consists of a loose bomber jacket and trousers. The unisex designs of the cut make the designs gender-neutral. The expansive „Pinicula“ pattern decorates the bomber jacket and the „Furfuracea“ surface pattern the trousers.

Fomitopsis

Laura Kunze
B.Sc. Design-Engineer Textile
Niederrhein University of Applied Sciences
Supervisors: Mr. Prof. Dr. Hardt
Ms. Prof. Dr. Wachs

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Fidan Bektas, MA-Student Textile Products - Design

in memorian

pressure sensor system in archiTEXTURE fashion

The haute couture outfit for men was created as part of the Design Theory course at the Hochschule Niederrhein in the Textile Products faculty with a focus on design (Master‘s course) during the winter semester 2015/2016 – under the supervision of Prof. Dr. Wachs. The topic of the course is CHANGE – the next BLUE – Fashion meets ArchiTEXTURE. The aim is to find a sustainable solution for manufacturing textiles and how these materials can be sustainably replaced by smart materials and architecture, and processed and produced in an environmentally friendly manner.

The outfit is named in memorian – developed and created by Master‘s student Fidan Bektas. The design simultaneously addresses the issue of sustainability, together with the socially relevant issue of the refugee crisis. Sensors are integrated into the clothing pieces, enabling the refugees to communicate with family members using Morse code.
The design reflects the memory of the life left behind. Different cultures are forced into contact with each other and intermix. As a result, the patterns also intermix. This creates something new. A new life begins.

in memorian
Fidan Bektas
MA Textile Products - Design
Niederrhein University of Applied Sciences
Supervisor: Ms. Prof. Dr. Wachs

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Jonas Stracke, BA-Student Design-Engineer Fashion

Culture

We wear clothing, we live clothing, we love clothing

The consumer demands of an rapidly expanding, global population is exploding on many continents. Emerging nations are progressively developing into serious economic markets with a vast number of new consumers. At the same time, cultural differences need to be considered, as does a sustainable and forward-looking approach to mass production Laser technology already makes it possible to create washes and motives on fabrics, creating water-saving and sustainable refinement and processing. Digital print represents an alternative dyeing method, alongside conventional water-based dying technologies, and enables specific cut sections to be printed.
The print is inspired by photography from Jonas Stracke, which covertly illustrates an exhausting situation.

In comparison to the interculturally-oriented motives of „Culture“ on both denim materials (laser technology) and polyester materials from Premier Textiles Ltd. (sublimation printing by Epson GmbH Germany), the appeal lies in the opportunity to experiment with and research innovative and sustainable printing technologies.

Culture

Jonas Stracke
BA Design-Engineer Fashion
Niederrhein University of Applied Sciences
Supervisor: Ms. Prof. Dr. Wachs

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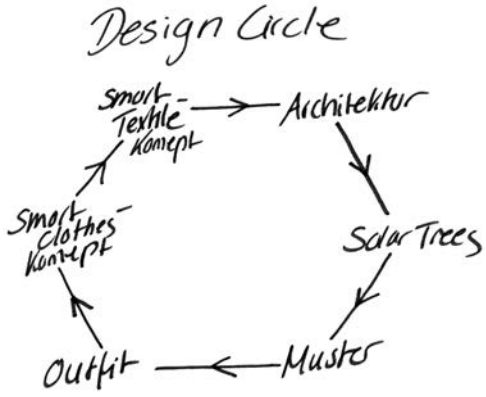
Photo: Tamara Hansen, Model: Juliane Peters

II Transfer: blue design as ART - INTERIOR - ARCHITECTURE

more interior - architecture textile solutions will follow

PINK BIONIC
designed by Theresa Scholl, 2016

mobile pavillion -
movable membran construction

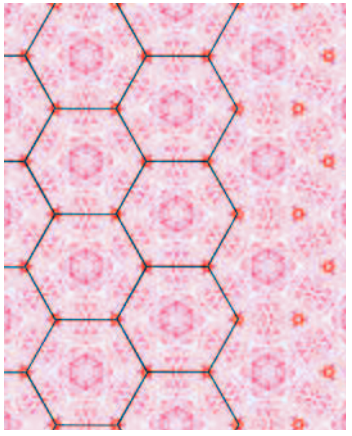


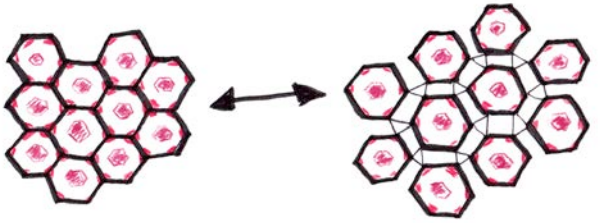
Theresa Scholl, MA-Student Textile Products - Design

Pink Bionic

Hexagonal patterns in smart textile solution for architecture

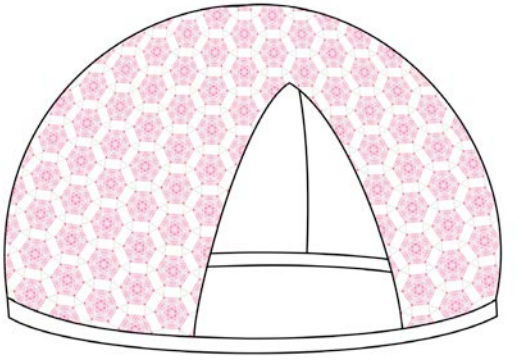
The idea behind ‘pink bionic’ is the same as behind a design cycle. It starts with the development of a digital textile printing design based on the structure of architecture. In this step the solar trees of the German Pavilion for Expo 2015 in Milan became a source of inspiration. The resulting graphical patterns were varied with ornamental designs.
This pattern was used for a fashion outfit - please see in chapter I, No 4 - and additional for a top that is constructed for being used as Smart Textile.
To convert the pattern back into architecture within the framework of the design cycle, ‘pink bionic’ was complemented by a concept for a smart textile consisting of a membrane that is intended to be used for the roofing of building designs. The hexagonal division offers huge advantages for the application of a patterned textile in architecture - a pavillon -, as the pattern stays connected even in a movable constructions. Through an intelligent control an open or closed surface can be created within ‘pink bionic’. As air humidity increases, indicating a rain shower in the near future, the hexagonal structure tightens to create a closed surface. As air humidity decreases again, the hexagonal structure opens and lets air and light back in the room. For this extraordinary smart sustainable pink bionic architecture soulution also printed membrans were used, created with Epson printers at Meerbusch.



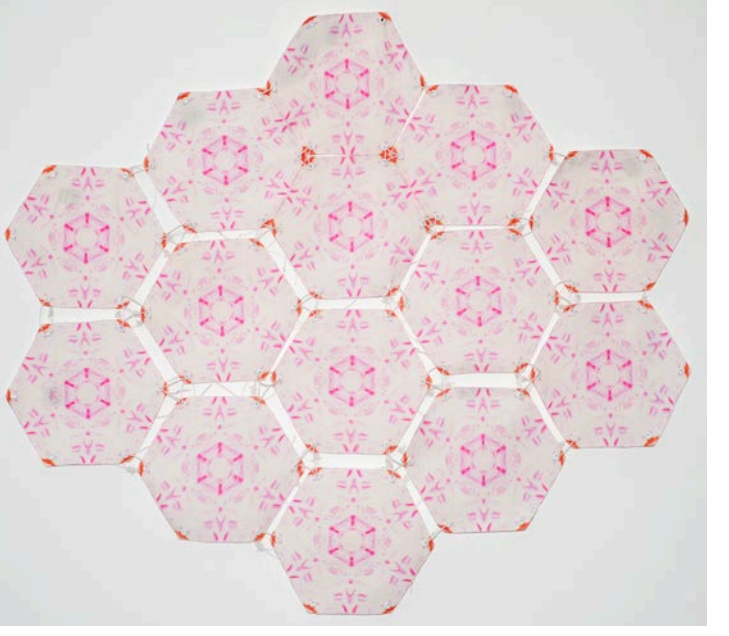


PINK BIONIC

designed by Theresa Scholl, 2016



mobile pavillion -
movable membran construction



Michael Wolf, MA-Student Textile Products - Design

Add-on Blue

Pump up the Change!

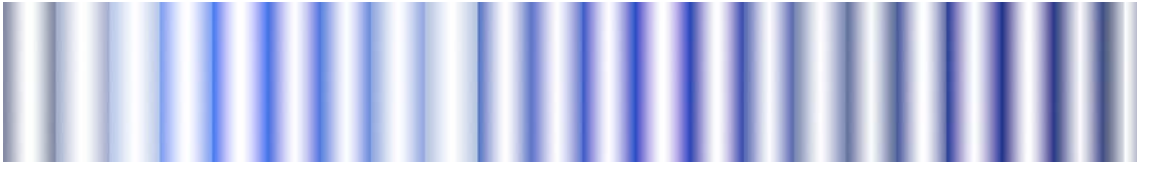
The Textile Design „add-on Blue / Pump up the Change“ was conceived for the use as well in fashion as in the Automotive Interior. The traditional quilt art was the inspiration for a smart and sustainable textile function.

For this a recycled airbag material (post consumer waste) and recyceld electronics in the form of a fan was used. The textile can be inflated to build up air chambers ,with this function, the heat retention capacity can be increased by trapped air and react with sensors to environmental factors such as cold. Another application could be to intensify music (beats). The fabric could respond to the beat of the music by the use of sensors.

One use of this functional fabric can be seen in the Automotive Interior of the Selfdriving technology of the future. The driver could increase his music enjoyment by seats made of this textile and relax during transport from A to B. This „Feel the Beat“ function is also planed as a realisation in the designed shoes.

The future of Automotive Interior Design

by Michael Wolf, 2016



Making Off

Creative Work at Niederrhein University of Applied Sciences

Printing at Epson Solution Center, Meerbusch

Discussion of Designs at Epson Solution Center

Working with Epson printers

III Technology and Textile Design through Transition

BA Design-Engineer Textile, 3rd Semester

Third-semester Design Engineering Textile students examined design with the help of textile printing technologies with the motto of CHANGE. The students‘ creations focus on technology and design through the course of time. Epson GmbH Germany represents this transformation in textile printing technology, reflected by the technology-oriented designs of the talented designers from the city of Mönchengladbach.

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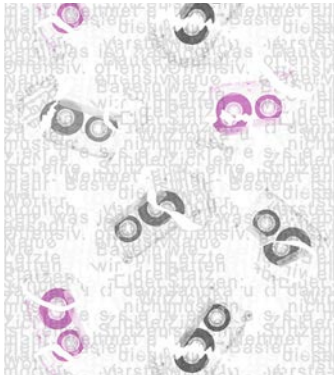

Astrid Nisch, BA-Student Design-Engieer Textile

Soundtrack – Soundbites in dialogue

Deconstructionist style period retranslated

The patterns from the textile collection „Soundbites in dialogue“ were developed with a focus on the fast-moving pace of space, time and technology.
The spoken word fades, becoming almost illegible and forgotten. The soundtrack cassette was selected as a translated expression of the origins of the deconstructionist style period, and a photo print added for additional context. A new value arose at the beginning of the 1980s, with the rapidly accelerating development of technology and the resulting new and previously unimagined emergence of new technical and acoustic options for reproducibility. From today‘s perspective the cassette has faded into irrelevance, although its 3D look makes it seem tangible. Over the course of time this shatters, too.
The word – as text in the form of typographic characters – and the cassette are reflected in the textile pattern, recycled, deconstructed and recombined to form a new whole as a textile design.
A memory of things that once seemed like miracles, readable in the context of today‘s digital age.
Design soundtrack „Soundbites in dialogue“ by Astrid Nisch.

Soundtrack
Astrid Nisch
BA Design-Engineer Textile
Niederrhein University of Applied Sciences
Supervisor: Prof. Marion Ellwanger-Mohr

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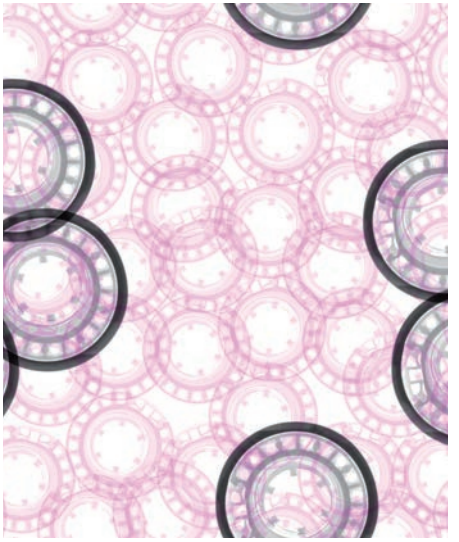

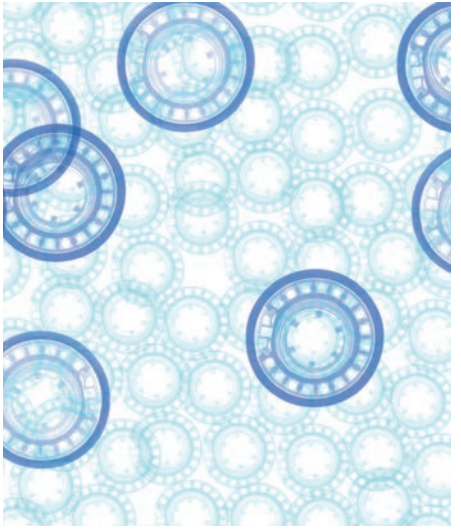

Jessica Nürnberg, BA-Student Design-Engineer Textile

Auflösung der Zeit

Dissolution of Time

A clock is broken down into indeterminate triangles and angular shapes. We can only identify the clock and hands by the individual silhouette surfaces.

A repeating pattern photo consisting of numerous small cut-out pieces of paper caught on camera in light and shadow, a permutation of the once familiar clock.
Digitalised and processed using the technological capabilities of our time, the design illustrates the excitement and diversity of the design language, characterised by the angular, aggressive elements together with the clock‘s circular elements.
In a time in which society leaves people with people less and less time for themselves, and focuses increasingly on innovation and new technology, there is no end to time-consuming processes.

No time seems to exist in the space. The devolution into the same rhythm and movement generates constant, ongoing and progressive movements without limits.

Dissolution of Time

Jessica Nürnberg
BA Design-Engineer Textile
Niederrhein University of Applied Sciences
Supervisor: M.Sc. Mirja Lutz

Jia lin Chov, BA-Student Design-Engineer Textile

Gestaltungselement Elektronik

Design element electronics

Electronics have now become an integral part of this world. They are ever present, and also essential for our day-to-day lives and work.
These designs represent the path of time to the digital age. Everything has been created digitally: from the photo on the USB drive, to the photo editing and the design of the print pattern. That is why the question is obvious: why not use electronics objects as a design element in the pattern. Digitalisation clearly demonstrates the diversity of the design options in a playful approach to handling shapes and images – up to and including digital printing on printers from Epson GmbH Germany. We express our sincere thanks for this opportunity to realise a digitally created design.

Design element electronics

Jia Iin Chov
BA Design-Engineer Textile
Niederrhein University of Applied Sciences
Supervisor: Prof. Marion Ellwanger-Mohr

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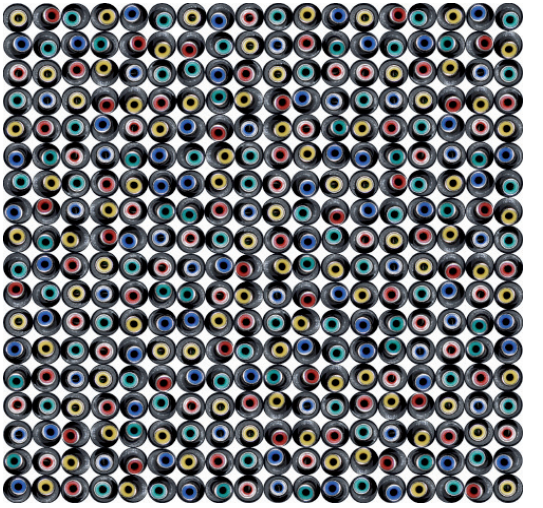

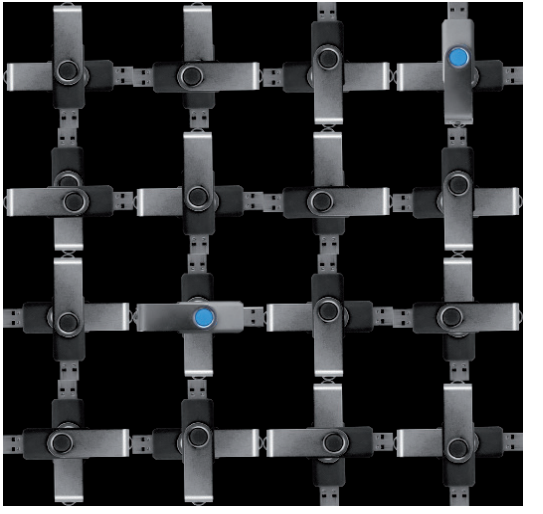

Young design talents from the Hochschule Niederrhein involved in the collaboration project with Epson GmbH Germany with Prof. Marion Ellwanger-Mohr, M.Sc. Mirja Lutz and Prof. Dr. Marina-Elena Wachs, Faculty of Textile and Clothing Technology, 2016.
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Please
don't touch

Exhibition at TecStyle Vision Fair in Stuttgart


Hochschule Niederrhein
University of Applied Sciences
Textil- und Bekleidungstechnik
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CHANGE
– the next blue
smart and sustainable spaces in fashion and (interior-)architecture
Kooperationsprojekt von
Epson GmbH Deutschland
Hochschule Niederrhein
Fachbereich
Textil- und Bekleidungstechnik
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„BLUE ist das neue GREEN der Nachhaltigkeitsdebatte im Design" (M.Wachs). Diese These steht initiativ für das interdisziplinären Projekt „Change – the next blue in fashion and interior architecture", das am Fachbereich Textil- und Bekleidungstechnik der Hochschule Niederrhein unter Leitung von Prof. Dr. Marina-Elena Wachs bearbeitet wird.
Passion makes the difference in smart and sustainable textile design – CHANGE!

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