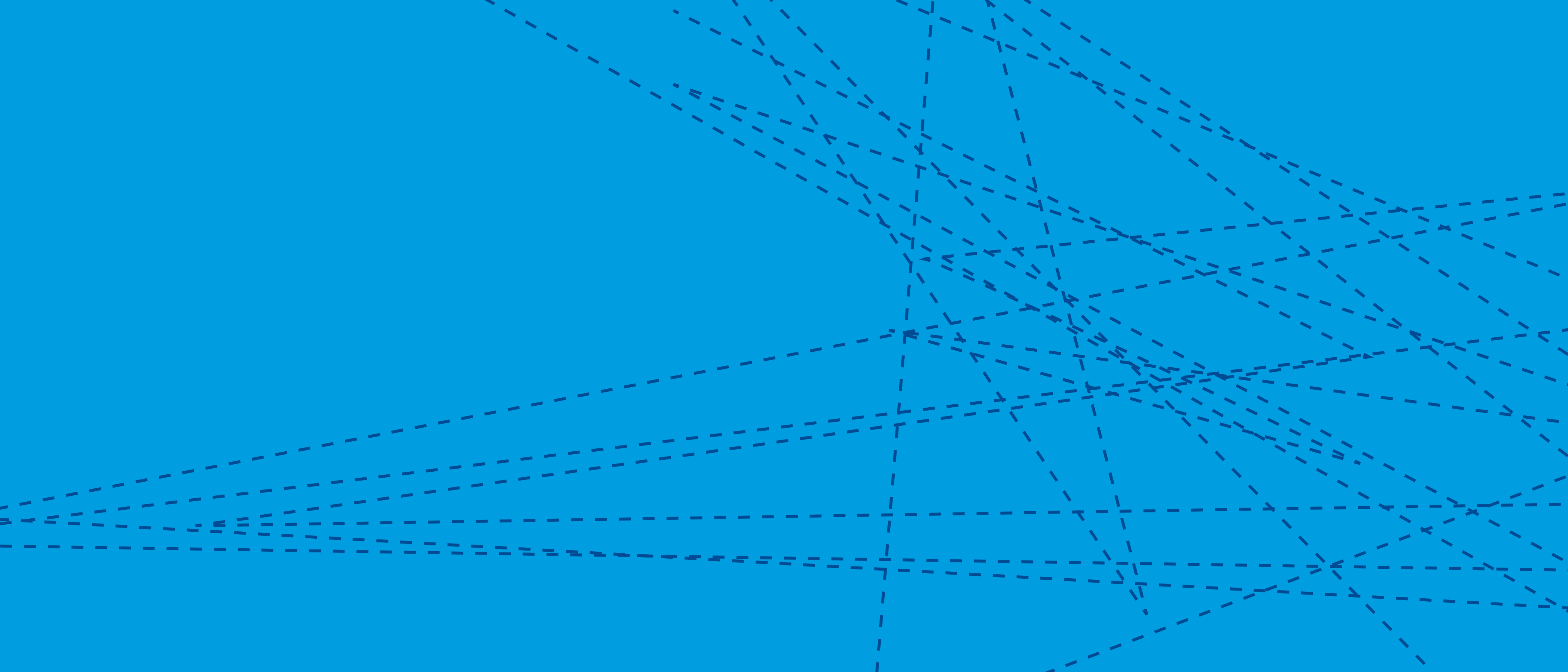


THE
PERI
MENTAL
FATAL



TEXTILE
PERFORMANCE
TRENDS

EDITORIAL

T-EXPERIMENTAL

INTRODUCTION BY THE CURATORS

This publication documents a selection of outstanding artistic and engineering case studies which were completed as part of several high-level BA and MA student projects by the Faculty of Textile and Clothing Technology at the Hochschule Niederrhein (University of Applied Sciences), Mönchengladbach, Germany.

The results of the projects and research evidence the extensive range of creative potential, scope of technical design, compliance with sustainability demands as well as the success of combined engineering solutions. They also show the excellent standard of interdisciplinary networking between the teaching staff in various scientific and design disciplines as well as with partners from the industry in the Lower Rhine region, Europe and beyond.

The design and management concepts and works of art focus on the following topics, which at the same time demonstrate the tremendous range of textile opportunities that the future holds: Textile Techniques, Art of Textiles, New Interior Solutions, Textile Industry 4.0, Sustainable Design Concepts, Design Transfer, Female Statements and Smart Future. Many solutions anticipate the future of textiles, which may at some point in time become the accepted state of the art.

Presentation of the projects is supplemented by statements of the teaching staff in which they reflect on their work and motivation, as well as by reports of external experts and journalists from the lifestyle and textile business, who are very ambitious in aiming for a sustainable and worthwhile future while still satisfying the needs of modern industry.

We hope you enjoy reading this book and invite you to accompany us on a journey through the creative, innovative, smart, sustainable world of textile design research and (T)experiments of the future.

Prof. Dipl.-Des. Ellen Bendt

Prof. Dr. Dipl.-Des. Marina-Elena Wachs

GREETINGS

GRUSSWORTE

PROF. DR. HANS-HENNIG VON GRÜNBERG,
THE PRESIDENT HOCHSCHULE NIEDERRHEIN
UNIVERSITY OF APPLIED SCIENCES

As a University of Applied Sciences, we have always strived to find solutions and drive innovation forward. We are very pleased that our Faculty of Textile and Clothing Technology is at the forefront of these advancements, as this publication clearly demonstrates.

In this publication our lecturers discuss the symbiotic links between form and design. With all the technical developments that are mainly driven forward by projects of the Textile and Clothing Research Institute, the design aspect should not be neglected. As part of these considerations, today we are already thinking of tomorrow. What could fashion collections for future generations look like? We are working on convincing and resource-conserving product concepts with new textile fibres that at the same time have an aesthetic and sophisticated design.

Students at the Faculty of Textile and Clothing Technology are already familiarised with these demands regarding textile innovation and products at an early stage. Smart Textiles, Sustainability, Industry 4.0: These are all catchwords that are accompanying us in our faculty on our way to the year 2020. Those who are able to combine functionality, social relevance and aesthetics belong in the textile sector of the future.

We are working on ensuring that this is just what our students can do.

I wish you an enjoyable and stimulating read.
Hans-Hennig von Grünberg

PROF. DR. HANS-HENNIG VON GRÜNBERG,
PRÄSIDENT DER HOCHSCHULE NIEDERRHEIN
UNIVERSITY OF APPLIED SCIENCES

Als Hochschule für angewandte Wissenschaften wollen wir seit jeher Lösungen finden und Innovationen vorantreiben. Unser Fachbereich Textil- und Bekleidungstechnik ist dabei erfreulicherweise ganz vorne mit dabei, wie die Ihnen vorliegende Publikation anschaulich zeigt. Unsere Lehrenden diskutieren darin die symbiotische Verbindung von Form und Design.

Bei all den technischen Entwicklungen, die bei uns vor allem über Projekte des Forschungsinstituts Textil und Bekleidung vorangetrieben werden, darf der Aspekt des Designs nicht vernachlässigt werden. Dabei denken wir schon heute an morgen. Wie könnten Modekollektionen für die Menschen in der Zukunft aussehen? Wir arbeiten an überzeugenden und ressourcenschonenden Produktkonzepten aus neuen textilen Faserstoffen, die gleichzeitig ein ästhetisches und anspruchsvolles Design vorweisen.

Wer am Fachbereich Textil- und Bekleidungstechnik studiert, wird mit diesen Anforderungen an textile Innovationen und Produkte schon frühzeitig vertraut gemacht. Smart Textiles, Nachhaltigkeit, Industrie 4.0: Das alles sind Schlagwörter, die unseren Fachbereich auf dem Weg ins Jahr 2020 begleiten. Wer in der Lage ist, Funktionalität, gesellschaftliche Relevanz und Ästhetik zu verbinden, dem gehört in der Textilbranche die Zukunft.

Wir arbeiten daran, dass unsere Studierenden genau das können.

Eine anregende Lektüre wünscht Ihnen
Ihr Hans-Hennig von Grünberg

PROF. DR. HABIL. RUDOLF L. VOLLER, DEAN OF THE FACULTY OF TEXTILE AND CLOTHING TECHNOLOGY, HOCHSCHULE NIEDERRHEIN

Since 2005, the Faculty of Textile and Clothing Technology offers the Bachelor course Design-Engineer. It is characterized by creativity and technics, dynamics and continuous improvement, for which I have to thank all involved colleagues. In the past years, a lot of projects and fruitful cooperations were initiated in the design area. Using a holistic approach a lot has been worked out in the area of textile and clothing. The design was realized beginning with the concept regarding the use of raw material, manufacturing processes and finally the usage of durable high-quality products. The participation of the faculty's students was excellent, which was proven at many exhibitions and successful participations in competitions.

All that will be supported by the university in future too. The presented book is on one hand a documentation of this work, on the other hand an important component for further development. Congratulation to all those who worked on this book, and many thanks to all backers.

PROF. DR. HABIL. RUDOLF L. VOLLER, DEKAN DES FACHBEREICHS TEXTIL- UND BEKLEIDUNGSTECHNIK DER HOCHSCHULE NIEDERRHEIN

Seit 2005 gibt es im Fachbereich Textil- und Bekleidungstechnik den Bachelorstudiengang Design-Ingenieur. Dieser steht für Kreativität und Technik, für Dynamik und kontinuierliche Weiterentwicklung, was meinem ideenreichen Kollegium zu verdanken ist. Im Bereich Design wurden in den vergangenen Jahren zahlreiche Projektarbeiten initiiert und interessante Kooperationen zustande gebracht. Mit einem ganzheitlichen Ansatz wurde im Bereich „Textil und Bekleidung“ sehr viel bewegt, der künstlerische Entwurf gleichzeitig mit Rohstoffverwendung, Herstellung und Gebrauch hochwertiger, langlebiger Produkte von Anfang bis Ende konzipiert. Hervorragend war auch die Beteiligung der Studierenden des Fachbereichs Textil- und Bekleidungstechnik. Diese Leistung resultierte in vielen Ausstellungen und erfolgreichen Wettbewerbsteilnahmen.

Dies soll von Seiten der Hochschule auch künftig unterstützt werden. Das vorliegende Buch dokumentiert diese Arbeit und ist gleichzeitig hierfür ein wichtiger Baustein. Dazu gratuliere ich den Beteiligten und danke allen Unterstützern ganz herzlich.

PROF. DR. HABIL. MAIKE RABE, DIRECTOR OF THE RESEARCH INSTITUTE OF TEXTILE AND CLOTHING

Design can, etymologically speaking, be traced to designare (lat. name, determine, express). At the root of this, the design of form and colour cannot be separated from the determination of a product and, thus, its technical and conceptual design.

In this sense, design is lived at the Research Institute for Textile and Clothing as well: in the technical development of new products like, for example, self-luminous textiles, innovative fabrics made of high-performance fibres, textile sensors, or fluorine-free and soil-repellent finishing it is always considered whether the design with regard to form and colour can also be realised for the respective future product in an appealing way. This works out best when natural scientists, engineers and designers work hand-in-hand.

The marvellous design projects presented here underscore this symbiosis: aesthetics are perfectly consistent with technical feasibility and product function!

PROF. DR. HABIL. MAIKE RABE, LEITERIN DES FORSCHUNGSINSTITUTS FÜR TEXTIL UND BEKLEIDUNG

Design lässt sich etymologisch auf designare (lat. bezeichnen, bestimmen, darstellen) zurückführen. Bei dieser Sprachwurzel gepackt, lassen sich Form- und Farbgestaltung nicht von der Bestimmung eines Produkts und damit seiner technischen und konzeptionellen Gestaltung trennen.

In diesem Sinne wird Design auch am Forschungsinstitut für Textil und Bekleidung gelebt: Bei der technischen Entwicklung von neuen Produkten wie z. B. selbstleuchtenden Textilien, neuartigen Flächengebilden aus Hochleistungsfasern, textilen Sensoren oder fluor-freien, schmutzabweisenden Ausrüstungshilfsmitteln wird immer bedacht, ob auch Form- und Farbgestaltung für das zukünftige Produkt ansprechend umgesetzt werden können. Das gelingt am besten, wenn Naturwissenschaftler, Ingenieure und Designer Hand in Hand arbeiten.

Die hier präsentierten, wunderbaren Designprojekte unterstreichen diese Symbiose: Ästhetik steht mit technischer Realisierbarkeit und Produktfunktion hervorragend im Einklang!

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GUESTS STATEMENTS
GASTAUTOREN

Emotions please

EMOTIONS PLEASE!

CAN DIGITALISATION MAKE SPACE FOR CREATIVE ACTIVITY?

In recent years, the advent of PDM and PLM has enabled every collection segment to conduct analyses from every angle imaginable. Sales ratio, stock turnover rates and dynamic collection plans are now everyday tools for design teams everywhere, as well as a firm fixture of and foundation for quantitative collection development. Right from the start -of the season, the resultant customer management makes up a considerable portion of the available collection volume. There's no room for doubts! Because what brought success in the previous season will work again for the next one too. The figures determine the way things will go, trampling on the delicate shoots of design innovation that grow tentatively out of the ground. Numbers prevail over gut feelings. Reason pushes out emotion and vision.

So far so good – if it weren't for the fact that we're now in an era where consumers are rejecting the unwaveringly predictable and demanding ever more innovative and individual products. Many brands have missed the mark and watched this train pull out of the station without them, rushing past with its bold, innovative and design-driven passengers. Often young and full of unconventional ideas, bolstered in particular by the momentum of the athleisure megatrend.

The sneakers generation. From the good will out in Cologne to AFEW in Düsseldorf, and of course sneakersstuff in Berlin. Limited editions, be they shoes or clothes, get people queuing up outside stores in their masses to be let in one

EMOTIONEN BITTE!

SCHAFFT DIGITALISIERUNG FREIRAUM FÜR KREATIVES HANDELN?

Der Einzug von PDM und PLM hat es in den letzten Jahren ermöglicht, jegliches Kollektionssegment im Nachklang auf jede nur erdenkliche Art und Weise zu analysieren. AVQ, LUG und sich nähernde KRPs sind mittlerweile jedem Designteam mehr als geläufig und fester Bestandteil und Basis der quantitativen Kollektionsentwicklung. Das daraus resultierende Bestsellermanagement besetzt gleich zu Saisonbeginn einen nicht unerheblichen Teil des zur Verfügung stehenden Kollektionsvolumens. Zweifeln verboten! Denn was in der vorausgegangenen Spiegelsaison erfolgreich war, wird auch nächste Saison wieder funktionieren. Die Zahl bestimmt den Kurs und erdrückt oftmals die, wie ein zartes Pflänzchen sich zeigende Designinnovation. Zahl schlägt Bauch. Vernunft verdrängt Emotion und Vision.

So weit so gut, wären wir nicht in der Phase, in der sich die Konsumenten dem ewig Gleichen verweigern und vermehrt nach innovativen und individuellen Produkten verlangen würden. Viele Brands haben den Bogen überspannt und den Zug verpasst, dessen Passagiere, eine neue Generation, mutig, innovativ und designgetrieben an ihnen vorbeirauschen. Oft jung, mit unkonventionellen Ideen, vor allem mit dem Rückenwind des Megatrends Athleisure.

Es ist die Generation Sneaker. Ob mit Stores in Köln wie THE GOOD WILL OUT, in Düsseldorf AFEW, oder natürlich in Berlin mit sneakersstuff. Limitierte Auflagen, ob Schuhe

group at a time so as not to overcrowd the shop floor – with products frequently selling out in one day (last seen on Japan Day in Düsseldorf in mid-May 2017). These scenes are the stuff of dreams, harking back to the 1980s when clothing was strictly limited. Brands that burst onto the scene back then, such as Cinque and Marc O’Polo, moved the market forward with their innovative ideas, in particular by dragging men’s fashion out of the office and into the big wide world. They did this with smart, casual collections.

I can’t and won’t rave about the “good old days” here – that’s not going to help us. Rather, I want to ask: what have we done differently?

Above all, we put a great deal of emotions into our actions in favour of taking an analytical approach right from the outset. The design process was lengthy and style-defining, rarely interrupted by discussions with sales and brand management. We don’t now want to turn our backs on the processes established over the last few years, so the concept and proto meetings will continue to be the forums in which sales, management and the executive board will influence the development of the collection.

But a new digital day is dawning on the horizon for the designers. Anyone who attended Texprocess in Frankfurt in early May 2017 will have witnessed the stirring of an immense new wave of digital development. 3D animated avatars change their outfits instantly at the touch of a button – live and in real time. This is innovation that can almost be reached out and touched – and most importantly, understood – by everyone. A quantum leap in the visualisation of proto meetings is coming into focus.

Soon, we will no longer all be wandering around with bulky headsets on while we design the collection. Solutions for digital visualisation in the development process also come in small packages. Software solutions for the iPad are already

oder Bekleidung sorgen für lange Schlangen vor den Stores, gruppenweisen Einlass, um die Frequenz auf der Fläche nicht zu groß werden zu lassen, und Ausverkauft-Meldungen am selben Tag (wie im Mai 2017 am Japantag bei AFEW). Traumhafte Zustände, die an die 80er Jahre erinnern, als Bekleidung zugeteilt wurde. Damals entstanden Brands wie Cinque und Marc O’Polo, getrieben durch innovative Ideen, um vor allem die Männerwelt aus ihrer Bürokluft zu befreien. Dies mit smarten und legeren Kollektionen.

Nun kann und will ich hier nicht von alten Zeiten schwärmen. Das hilft uns nicht weiter. Vielmehr stellt sich die Frage, was haben wir anders gemacht?

Vor allem haben wir „gemacht“, sehr emotional und nicht analysierend. Der Designprozess war ausgiebig und stilprägend, selten unterbrochen von Diskussionen mit Vertrieb und Brandmanagement. Nun werden wir die in den letzten Jahren etablierten Prozesse nicht zurückdrehen, und das Konzept sowie das Protomeeting werden weiterhin die Gremien sein, in denen Vertrieb, Management und GF die Kollektionsentwicklung beeinflussen werden.

Doch gibt es digitale Hoffnung am Designerhorizont. Wer Anfang Mai 2017 die Texprocess in Frankfurt besucht hat, konnte vielfach Zeuge eines immensen digitalen Entwicklungsschubs werden. 3D animierte Avatare wechselten auf Knopfdruck im Sekundentakt ihre Outfits, live und in Echtzeit. Für jeden fast greifbar, aber vor allem begreifbar. Ein Quantensprung in der Visualisierung von Protomeetings wird sichtbar.

Nun werden wir demnächst nicht alle mit klobigen Brillen auf dem Kopf herumlaufen, während wir die Kollektion entwickeln. Es gibt auch die kleinen Lösungen von digitaler Visualisierung im Entwicklungsprozess. Software-Lösungen für das iPad sind schon im Einsatz. Zukünftig wird in

in use. In future, it will also be possible to hold discussions in proto meetings on a completely new level. To be seen and perceived by everyone, wherever they are located. Not with black and white technical drawings, furnished with tiny scraps of material and the colourways still shown in squares, but with realistic, full-colour digital prototypes in 3D.

In this way, digitalisation can make innovation feel much more real to less creative minds from a very early stage in the development of the collection, providing the certainty needed to make early and prompt decisions. Of course, this data can be used right down to the online shop – and if it is used wisely, it can eliminate the need to release the individual product segments.

But the question remains – how quickly will these technologies start to take hold? Many players are still busy trying to integrate PLM into their workflows. It is only in isolated places where the signs are already pointing towards the digital future. But where this path has already begun to be tread, employees’ concerns are increasingly rising to the surface where the executive board and management have not explained this new direction sufficiently. After all, it heralds certain changes – specifically changed processes and tasks.

Some companies are already starting to look for the right young professionals who have a solid grasp of these technologies. But, up until now, finding them has been challenging. A new generation will grasp this opportunity.

If we can succeed in establishing the 3D visualisation that has already been used by the automotive industry for years, emotions and visions will hold greater sway in the currently somewhat pragmatic development process. Of course, it goes without saying that we will be taking our employees with us on this journey into a new world of digital development processes. Always with a human touch, always in touch with our emotions.

Protomeetings auf ganz anderem Niveau diskutiert werden können. Für jeden sichtbar, denkbar auch an unterschiedlichen Orten. Nicht mit technischen Skizzen in schwarz-weiß, versehen mit winzigen Stoffschnipseln und der zusätzlich noch in Quadraten visualisierten Farbstraße, sondern mit real wirkenden, farbecht dargestellten digitalen Prototypen, in 3D.

So kann Innovation mit Hilfe der Digitalisierung den weniger Kreativen zu einem sehr frühen Zeitpunkt in der Kollektionsentwicklung leichter verständlich gemacht werden, und Sicherheit für frühe und zeitnahe Entscheidungen bringen. Selbstverständlich sind diese Daten bis hin in den Onlineshop nutzbar, und können, wenn smart eingesetzt, das Freistellen der einzelnen Produktsegmente überflüssig machen.

Bleibt die Frage, wie schnell können diese Technologien greifen? Vielfach sind die Protagonisten noch damit beschäftigt PLM in die Arbeitsabläufe zu integrieren. Nur vereinzelt sind die Weichen schon Richtung digitaler Zukunft gestellt. Dort wo dieser Weg schon begangen wird, sind vermehrt Ängste der Mitarbeiter zu verspüren, wenn die GF und das Management sich nicht ausreichend erklären. Denn es werden sich Veränderungen ergeben, allein durch modifizierte Prozesse und Aufgaben.

Manche Firmen stellen schon die Frage nach entsprechenden Nachwuchskräften, die diese Technologien beherrschen. Bis dato sind sie noch rar gesät. Eine neue Generation wird diese Chance ergreifen.

Wenn wir es schaffen, die schon seit Jahren in der Autoindustrie eingesetzte 3D Visualisierung zu etablieren, werden Emotionen und Visionen wieder mehr Gewicht erhalten im heute doch eher pragmatischen Entwicklungsprozess. Vorausgesetzt wir nehmen unsere Mitarbeiter mit auf diese digitale Reise. Ganz human und emotional.

BENEFICIAL DESIGN

CREATING

POSITIVE

FASHION

BENEFICIAL DESIGN – CREATING POSITIVE FASHION

Fashion touches and moves us, and creates identity. Fashion and design are driving forces for change far beyond the industry itself. Beneficial Design is the use of this power of transformation for positive cultural change in our world; With positive effects for human, environmental and economic activities. It is the vision of positive cultural change through the combination of quality and innovation with beauty and aesthetics as a new definition of sustainability.

The classic definition of sustainability encompasses reduction and sacrifice as central elements; Goals are "zero waste", "zero energy", "zero emissions". Following this approach, the best product is the one that isn't produced and the best customer is the one who doesn't buy. And were we to achieve this ultima ratio – the zero: "zero emissions" – this would be a planet without us, without people producing emissions with every breath. With a deep-rooted instinct for survival, we don't buy into this rational, ultra-logical concept. This solution scenario lacks heart. It proposes no positive developmental outlook. Remaining neutral is the best thing that this concept has to offer.

"Beneficial" (Latin: "benefacere") on the other hand, stands for doing good, and being useful, wholesome, conducive, curative and fruitful. Beneficial Design translates the cradle-to-cradle design concept for the unique world of fashion, textiles and lifestyle products and celebrates people

BENEFICIAL DESIGN – CREATING POSITIVE FASHION

Mode berührt uns, bewegt und stiftet Identität. Mode und Design sind Triebfedern für Veränderung weit über die eigene Industrie hinaus. Beneficial Design heißt, diese Transformationskraft für einen positiven kulturellen Wandel in unserer Welt zu nutzen; Mit positiven Effekten für Mensch, Umwelt und wirtschaftliches Handeln. Es ist die Vision eines positiven kulturellen Wandels durch die Verbindung von Qualität und Innovation mit Schönheit und Ästhetik als eine neue Definition von Nachhaltigkeit.

Im klassischen Nachhaltigkeitsverständnis stehen Reduktion und Verzicht für nachhaltiges Handeln; Ziele sind „zero waste“, „zero energy“, und „zero emission“. Das beste Produkt dieses Ansatzes ist also dasjenige, das nicht produziert wird, der beste Kunde derjenige, der nicht kauft. Und erreichen wir tatsächlich Ultima Ratio – die Null: „zero emission“ –, so wäre das ein Planet ohne uns Menschen, die wir mit jedem Atemzug Emission produzieren. Mit tiefverankertem Überlebensinstinkt kaufen wir dieses rationale, einzig logische Konzept nicht. Diesem Lösungsszenario fehlt das Herz, es bietet kein positives Entwicklungsszenario. Neutral zu sein ist das Beste, was das Konzept zu bieten hat.

„Beneficial“ (Latein: „benefacere“) dagegen bedeutet gut-tun, förderlich sein, wohltuend, nützlich, zuträglich, heilsam und gedeihlich. Beneficial Design übersetzt das Cradle to

and their creations. Beauty is created at this alliance: of aesthetically and culturally rich design engaging with healthy manufacturing and usage processes. Fashion is our second skin. So, it should be much more than just less bad with a reduced ecological footprint. It should enrich our lives and leave a positive footprint, it should create beauty and quality of life for all. Successful fashion combines aesthetic and technical innovations with the positive achievements of the past and intelligent solutions for the future: this engenders high-quality fashion. From materials that will be the nutrients and basis for something new.

Beneficial Design connects healthy materials to the needs of customers and promising innovative business models and services. Innovative technical concepts enable beneficial, closed circuits of cleanly used resources. Beneficial innovation perceives a necessary interaction between product and business innovation, because it is the only way that the flow of resources among production, usage, and reuse can be controlled securely.

The modification of intentions toward a pioneering approach to design is what represents actual change. “Doing good instead of less bad.” says Michael Braungart, the mind behind cradle to cradle. If a company transparently takes aim at positive values like good quality, good chemicals, good air, good energy, good water, it can communicate openly about achievements without discrediting other products that have yet to be improved. With each purchase, the customer helps the company become better. A cultural transformation with positive effects.

The company Manufactum provides an appropriate example. The first comprehensively designed clothing will

Cradle Designkonzept in die spezielle Mode- und Textilwelt und feiert die Menschen und ihr Schaffen. Es stellt die Frage in den Vordergrund, wie wir leben und unsere Welt gestalten wollen. Im Zentrum stehen Qualität und Innovation. Schönheit entsteht genau an dieser Schnittstelle: zwischen ästhetisch und kulturell reichhaltiger Gestaltung und gesunden Herstellungs- und Nutzungsprozessen. Mode ist unsere zweite Haut. Deshalb soll sie viel mehr als nur weniger schlecht sein und unseren ökologischen Fußabdruck reduzieren. Sie soll unser Leben bereichern und einen positiven Fußabdruck hinterlassen, sie soll Schönheit und Lebensqualität für alle schaffen. Ästhetische und technische Innovationen verbindet gelungene Mode mit den positiven Errungenschaften der Vergangenheit und intelligenten Lösungen für die Zukunft: Daraus wird Mode mit Qualität. Aus Materialien, die Nährstoff und Grundlage für etwas Neues sein werden.

Beneficial Design bringt gesundheitsförderliche Materialien zusammen mit den Bedürfnissen der Kunden und geschäftsversprechenden zirkulären Geschäftsmodellen und Dienstleistungen. Innovative technische Konzepte ermöglichen dabei gesunde, geschlossene Kreisläufe der sauber eingesetzten Ressourcen. Beneficial Innovation sieht ein notwendiges Zusammenspiel aus Produkt- und Business-Innovation, denn nur so lässt sich der Fluss der Ressourcen sicher steuern zwischen Herstellung, Nutzung und Wiedernutzung. Der Intentionswechsel hin zu einem zukunftsweisenden Gestaltungsansatz macht dabei den eigentlichen Wandel aus. „Doing good instead of less bad.“ sagt Michael Braungart, das Hirn hinter Cradle to Cradle. Zielt ein Unternehmen transparent auf positive Werte wie gute Qualität, gute Chemikalien, gute Luft, gute Energie, gutes Wasser ab, kann es offen über Errungenschaften kommunizieren,

come to market in spring 2018, in cooperation with the Beneficial Design Institute. Cradle-to-Cradle Silver and Gold certified, the initial products will be offered as adventure jackets and Travellor vests. The material consists of the biodegradable polymer Infinto, made by German company Lauffenmühle. All components, such as yarn, buttons, zippers, and labels, are designed to be safe for the biological cycle and of durable, high quality. Manufactum offers a returns system: if you no longer have a use for a product, you can drop it off at the store. From the returned material and production scraps, vertical-gardening products are made for the gardening department – a tailored-to-the-company second life cycle. In the third cycle, all remaining fibers are industrially composted, turning them into nutrients for new plants. The material effect lies not only in the described cascaded use, but also in the fact that daily abrasion from wearing and washing doesn't leave harmful micro plastics behind to accumulate in the world's oceans and food chains. It is safe for the environment. So Manufactum not only demonstrates a pioneering level of truly all-embracing quality, but also engages the customer throughout the whole usage process. That's what modern customer retention looks like. And real progress – with the help of Beneficial Design.

ohne damit andere, noch verbesserungswürdige Produkte zu diskreditieren. Mit jedem Kauf hilft der Kunde dem Unternehmen besser zu werden. Ein kultureller Wandel mit positiven Effekten.

Die Firma Manufactum liefert ein treffendes Beispiel dafür. Im Frühjahr 2018 wird die erste umfassend gestaltete Bekleidung in Zusammenarbeit mit dem Beneficial Design Institut auf den Markt kommen. Cradle to Cradle Silber und Gold zertifizierte Produkte werden zunächst als Adventure-Jacken und Travellor-Westen angeboten. Das Material besteht aus dem biologisch abbaubaren Polymer Infinto der Firma Lauffenmühle. Alle Zutaten wie Garn, Knöpfe, Reißverschlüsse und Etiketten sind gleichermaßen sicher für den biologischen Kreislauf gestaltet und von einer langlebigen, hohen Qualität. Manufactum bietet zudem ein Rücknahmesystem: wer keinen Bedarf mehr für die Produkte hat, gibt sie im Laden zurück. Aus dem Material, sowie aus den Resten aus der Produktion werden „Vertical Gardening“-Produkte für den Gartenbereich hergestellt, ein für das Unternehmen passgenauer zweiter Nutzungszyklus. Im dritten Zyklus werden alle Restfasern industriell kompostiert und so zu Nährstoff für neue Pflanzen. Der positive Effekt liegt jedoch nicht nur in der beschriebenen Kaskadennutzung, sondern darin, dass der tägliche Abrieb durch Nutzung und Waschen sich nicht wie andere Synthetik-Fasern als schädliche Mikroplastics in den Weltmeeren und damit auch in der Nahrungskette wiederfindet. Er ist sicher für die Umwelt. Manufactum zeigt hier also nicht nur vorreitend eine wirklich umfassende Qualität, sondern bezieht den Kunden über den Erstkauf hinaus über den gesamten Nutzungsprozess mit ein. So sieht moderne Kundenbindung aus. Und wirklicher Fortschritt – mit Hilfe von Beneficial Design.

DON'T LOOK BACK— —YOU'RE NOT GOING THAT WAY

DON'T LOOK BACK – YOU'RE NOT GOING THAT WAY

At all levels of fashion trade researchers are working frantically on consumer-whisperer-software. By having a merchandise management system every boutique now has at its disposal the right tool for an ever-finer analysis of the performance of different product groups. And Big Data makes the customer increasingly transparent and predictable for the big players of the sector.

„#anybodyisadesigner, #fashionforparticipation“ is the heading of an article in StyleInProgress magazine, in which Nicoletta Schaper describes how consumer feedback influences fashion design and has an impact on collections: „Brands like Burberry or Louis Vuitton monitor exactly which items of the last show are twittered how often. This generates valuable input for them, (...) many brands collect data in the web by means of monitoring software, in order to evaluate it and to optimise their own design process.“¹ This sounds like an evolution no one can escape.

The stated goal is that the consumer co-designs the product range as soon as the technical possibilities are available. Michael Boveleth (blond No8) explains: „The basic idea is not a designer's vision, but a product which is tailored to the need of the market and the consumer.“² Li Edelkoort too predicts: „The consumers of today and tomorrow are going to choose for themselves, creating and designing their own wardrobes.“³ This sounds so right because it sounds so democratic.

DON'T LOOK BACK – YOU'RE NOT GOING THAT WAY

Auf allen Ebenen der Modebranche wird fieberhaft an Kundenversteh-Software gearbeitet. Jede Boutique verfügt inzwischen mit ihrem Warenwirtschaftssystem über Tools zur immer feineren Erfolgsanalyse verschiedener Produktgruppen. Und für die Big Player der Branche wird der Konsument durch Big Data täglich transparenter und berechenbarer.

„#jederistdesigner, #modezumitmachen“ lautet die Überschrift eines Artikels in der StyleInProgress, in dem Nicoletta Schaper beschreibt, wie Verbraucher-Feedback Einfluss auf Modedesign nimmt und in die Kollektionen einfließt: „Brands wie Burberry oder Louis Vuitton registrieren genau, welche Teile der letzten Show wie oft getwittert werden. Das beschert ihnen wertvollen Input, (...) So sammeln viele Marken Daten im Netz mittels Monitoring-Software, um diese auszuwerten und den eigenen Designprozess zu optimieren.“¹ Das klingt nach einer Entwicklung, der man sich nicht entziehen kann.

Erklärtes Ziel ist es, dass der Konsument das Warenangebot mitgestaltet, sobald die technischen Möglichkeiten hierzu zur Verfügung stehen. Michael Boveleth (Blonde No8) erklärt: „Die grundlegende Idee ist keine Designervision, sondern ein Produkt, das auf den Bedarf von Markt und Konsumenten zugeschnitten ist.“² Auch Li Edelkoort sagt voraus: „Die Konsumenten von heute und morgen werden ihre eigene Wahl treffen, ihre eigene Garderobe herstellen und entwerfen.“³ Das klingt so richtig, weil es so demokratisch klingt.

But it fails to ask whether the consumer is actually able to design new products. The Walkman was invented by Sony's founder Akio Morita – without any market research: „Carefully watch how people live, get an intuitive sense as to what they might want and then go with it. Don't do market research.“⁴ It is very unlikely indeed that interviewing customers would have inspired his visionary invention. „My concept is that anybody has creative ability, but very few people know how to use it.“⁵

But regardless of the question whether the consumer is able to create the products he consumes, the question remains, whether he even actually wants to do it. So before asking the customer which clothes they would design, we should ask them whether they want to be a fashion designer in the first place. Just because somebody likes to listen to music, doesn't mean he feels the urge to write a song himself. Most people are perfectly fine with other people doing that for them and enjoy having Pharrell Williams surprise them. Simone Dominici (Coin) nails it for the fashion business: „We ask the customers too often, what they want. Whereas with us they must find what they weren't expecting.“⁶ I.e. maybe the consumer doesn't want consumer-inspired fashion, but fashion which actually inspires them.

Edelkoort too sees market analysis as a brake on innovation that is bringing fashion's hub to a halt. Bit by bit the statistical evaluation of the past has suffocated every creative vision of the future (and every interest in fashion with it): „(...) the financial managers won't allow any risks. That is why marketing interferes everywhere (...): First the pieces that define the DNA of the brand must be reinterpreted. Then the pieces that sold best last season must be repeated. Then the

Unberücksichtigt bleibt dabei die Frage, ob der Verbraucher überhaupt in der Lage ist, neue Produkte zu gestalten. Der Walkman wurde von Sony-Gründer Akio Morita erfunden – ganz ohne Marktforschung: „Beobachte sorgfältig, wie die Menschen leben. Bekomme ein intuitives Gespür dafür, was sie wollen könnten, und dem gehe dann nach. Betreibe keine Marktforschung!“⁴ Es ist tatsächlich sehr unwahrscheinlich, dass eine Befragung der Kunden den Impuls zu seiner visionären Erfindungen gegeben hätte. „Meine Auffassung ist, dass zwar alle kreatives Potential haben, aber nur wenige es zu nutzen wissen.“⁵

Aber unabhängig von der Frage, ob der Konsument die Produkte, die er konsumiert, tatsächlich selbst erschaffen kann, stellt sich die Frage, ob er es überhaupt will. Bevor wir den Kunden also fragen, welche Kleidung er denn entwerfen würde, sollten wir fragen ob er überhaupt Modeschöpfer sein möchte. Nur weil man gerne Musik hört, heißt das ja noch nicht, dass man den Drang verspürt, selbst einen Song zu schreiben. Die meisten Menschen sind vollkommen im Frieden damit, dass andere das für sie machen, und lassen sich gern von Pharrell Williams überraschen. Für die Modebranche bringt Simone Dominici (Coin) es auf den Punkt: „Wir fragen die Kunden zu oft, was sie wollen. Sie müssen bei uns aber finden, was sie nicht erwartet haben.“⁶ D.h. der Verbraucher will vielleicht gar keine Mode, die ihre Impulse vom Verbraucher bekommt, sondern eine, die ihm Impulse gibt.

Auch Edelkoort sieht die Marktanalyse als eine Innovationsbremse, die das Modekarussell zum Stillstand bringt. Nach und nach habe die statistische Auswertung der Vergangenheit jede kreative Zukunftsvision (und damit auch jedes Interesse an Mode) erstickt: „(...) die Finanzverantwortlichen erlauben

ones that are supposed to reflect the theme of the collection, the it-pieces. Innovation comes last.“ „But fashion is driven by innovation.“⁷

Fashion design based on consumer feedback – that seems to be within reach, but might be unattainable. The statistic figures which are available to us thanks to merchandise management systems and monitoring software only show us what has been and what is, but not what could be and what is going to be. Edelkoort: „(...) there are no waterproof predictions of what is going to sell well and what is not, fashion is a risky business. (...) it constantly needs to try.“⁸ Even the best software can't spare us trial and error.

In music research scientists from England, USA and Israel have been trying for decades to make the success of music computable. An infinite number of hits has been analysed with the help of computer programs in order to predict which music is going to be successful. In spite of all these efforts the hit rate was 60% only even in the best case.⁹ Computing certain things like music and fashion with computers is only possible to a limited extent. We will not be able to do without creative heads like Akio Morita in the future as well.

keine Risiken. Deshalb redet überall das Marketing rein (...): Erst mal müssen die Stücke neu interpretiert werden, die die DNA der Marke festlegen. Dann müssen die Teile wieder aufgelegt werden, die sich in der letzten Saison am Besten verkauft haben. Dann die, die das Thema der Kollektion widerspiegeln sollen, die It-Pieces. Die Innovation kommt zuletzt.“ „Aber die Mode ist von Innovationen getrieben.“⁷

Modedesign auf der Grundlage von Verbraucher-Feedback – das scheint zum Greifen nah und ist vielleicht doch unerreichbar. Die statistischen Zahlen, die uns dank Warenwirtschafts-Systemen und Monitoring-Software zur Verfügung stehen, zeigen uns eben immer nur das, was war, und das, was ist, aber nicht das, was sein könnte und sein wird. Edelkoort: „(...) es gibt keine wasserfesten Voraussagen, was sich gut verkauft und was nicht, die Mode ist ein riskantes Geschäft. (...) sie muss ständig ausprobieren.“⁸ Auch die beste Software kann es uns nicht ersparen, Neues zu versuchen und dabei Fehler zu machen.

In der Musikforschung versuchen Wissenschaftler in England, USA und Israel seit Jahrzehnten den Erfolg von Musik berechenbar zu machen. Mit der Hilfe von Computerprogrammen wurden unendlich viele Hits analysiert, um vorherzusagen, welche Musik erfolgreich sein wird. Trotz all dieser Bemühungen lag die Trefferquote selbst im besten Fall nur bei 60%.⁹ Bestimmte Dinge wie Musik und Mode lassen sich eben nur sehr bedingt von Computern berechnen. Wir werden auch in Zukunft nicht auf kreative Köpfe wie Akio Morita verzichten können.

¹⁻³ Nicoletta Schaper, „#jederistdesigner, #modezumitmachen“, in *StyleInProgress* 2/2015

⁴ Li Edelkoort, „Anti-Fashion Manifesto“, 2015

⁵ Akio Morita, „Made in Japan“, 1986

⁶ Nicoletta Schaper, „#jederistdesigner, #modezumitmachen“, in *StyleInProgress* 2/2015

⁷⁻⁸ Mareike Nieberding, „Die Mode schweigt“, in *Der Spiegel* 18/2015

⁹ Felix Bayer, „Der Traum vom sicheren Hit“, in *Spiegel-Online*, 21.12.2011

'ENGINEER'
AND
'DESIGN'
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IS THAT
AT ALL
POSSIBLE?

INTERVIEW OF MARION ELLWANGER-MOHR
WITH FELIX DIENER

'Engineer' and 'Design' – is that at all possible? Felix Diener, who has been working as a consultant, designer and product developer for textile producers and renowned textile editor internationally as a freelancer, answers to this question by portraying his career path.

Mr Diener, you studied Textile Engineering and Textile Design at Niederrhein University of Applied Sciences. How do you feel about that time in your life?

My interest in textiles was raised in the crafts while I was working as an interior decorator. I was eager to learn more about textiles and this is how I came to Niederrhein University of Applied Science. During my studies it was always a challenge for me to choose between technology and design. The lecturing professors in both majors always supported me very much. The technical approach in design has always been very welcome to me and ever since then the technological preconditions have been a vital basis for me and the work in my studio.

You started your career in Melbourne, Australia. What did you do down under?

At the beginning of my career I decided on a technical job in the textile sector. I was a developer of technical textiles in the field of woven and warp-knitted fabrics, textiles for filtration and fabrics for protective gear, like e.g. uniforms with low inflammability, and ballistic fabric made of Twaron fibres. As there is not that much textile industry in Australia we had to come up with our own solutions on site time and again. The education at Niederrhein University and the knowledge of different procedures and machines helped me a lot there and then.

INTERVIEW VON MARION ELLWANGER-MOHR
MIT FELIX DIENER

Ingenieur und Design, geht das überhaupt? Eine Frage die uns Lehrenden immer wieder gestellt wird, beantwortet uns Felix Diener als Berater, selbständiger Designer und Produktentwickler für Produzenten und große Stoffverlage mit seinem ganz eigenem/persönlichen Werdegang.

Seine Ausbildung machte Felix Diener als Diplom-Textil-Ingenieur und Textil-Designer an der Hochschule Niederrhein. Diese beiden Welten verbindet er zu neuen, innovativen Textilien, die technisch aber auch künstlerisch überzeugen. Verständlich, dass ihm da die Antwort auf die Frage, ob er eher Handwerker oder Künstler sei, schwer fällt. In Wahrheit ist das aber auch Nebensache – solange sich unter seiner Leitung moderne Technologie mit einer individuellen künstlerischen Handschrift verbindet.

Herr Diener, Sie starteten Ihre Karriere in Melbourne, Australien. Was haben Sie dort gemacht?

Ich war Entwickler für technische Textilien im Bereich der Gewebe und Kettengewirke. Textilien zur Filtration und Stoffe für Schutzkleidung wie schwerentflammbare Uniformen sowie ballistische Stoffe aus Twaron. Da es in Australien wenig Textilindustrie gibt, mussten wir uns immer eigene Lösungen vor Ort einfallen lassen, was mich in meinem textilen Handeln stark beeinflusst hat.

Später arbeiteten Sie beim renommierten Designer Ulf Moritz.

Ja, die Arbeit mit ihm war immer sehr inspirierend und prägt mein Denken bis heute. Neben meiner Leitung des Amster-

Later you worked with the very renowned designer Ulf Moritz in Amsterdam.

That was my entry into textile design and I had to learn a lot of things that cannot be covered by a degree course. The cooperation with Ulf Moritz was very inspiring and has shaped my way of thinking until today. During this time I was introduced to a variety of very special productions which create a precondition for the realization of the items that determine the style elements of the Ulf Moritz collection. A very exciting project was, among others, the "passements collection", which exceeded the textile dimension and brought a very strong fashion impulse to the collection. It was very interesting to witness how a traditional product with a slightly dusty image can be transformed into a modern, topical textile design. During that time I also worked with Swarovski very closely.

What are you currently working on?

At the moment I am primarily cooperating with two textile producers: one Turkish weaving mill and one Philippine manufacture. I started on a textile-design project with Vlada Vegilanski who is a student of the degree course Design Engineer/Textile at Niederrhein University; this project combines the core competences of both enterprises and furthermore gives an additional component which will create new products as well as new markets.

Can you tell us what this project is about?

It is about an experimental approach to design and application in digital printing. We utilize the manual and experimental method of operation in my studio to create prototypes and then we add them to industrial processes after a mind mapping. We combine experimental textile design with the work of an engineer to develop innovative products.

What materials do you use?

I use all materials that facilitate durable, reproducible, and

damer Studios haben wir zusammen die stilgebenden Artikel seiner Kollektion entwickelt.

Ein spannendes Projekt war die „Trimming“ Kollektion, die über die Textile Dimension hinaus ging und einen starken modischen Impuls brachte.

Woran arbeiten Sie derzeit?

Ich arbeite im Moment im Schwerpunkt mit zwei meiner Produzenten zusammen. Eine Türkische Weberei und eine Philippinische Konfektion. Um die Kollektionen über ihre Möglichkeiten hinaus zu bringen, habe ich ein Projekt mit der Studentin Vlada Vegilanski begonnen, dass die Kernkompetenzen beider Firmen miteinander verneint und eine zusätzliche Komponente einbringt, die neue Produkte und neue Absatzmärkte schaffen werden.

Dürfen wir wissen um was es sich dabei handelt?

Es geht um den Zusätzlichen Faktor des Digitaldrucks und einen experimentellen Einsatz. Hierbei werden wir die händisch experimentelle Arbeitsweise des Studios stark nutzen, um Prototypen zu erstellen und sie dann nach der Ideenfindung in Industrielle Prozesse einzufügen. Hier wird experimentelles Textildesign und Ingenieursarbeit zusammengebracht, um neue innovative Produkte zu entwickeln.

Mit welchen Materialien arbeiten Sie?

Ich arbeite mit allen Materialien, die langlebige, reproduzierbare und auch bezahlbare Produkte ermöglichen. Ein Produkt im Luxussegment kann natürlich auch teurer werden, aber es sollte noch immer ein erschwingliches Industrieprodukt sein. Da kommen auch nicht ganz gängige Materialien wie Kunststoffolie, Metallgarne, Eukalyptus oder Abakafasern zum Einsatz.

Wie schafft man es, künstlerisch und wirtschaftlich erfolgreich zu sein?

Das persönliche Verhältnis ist wichtig. Und Fairness auf allen Seiten. Viel Engagement und guter Service. Zum Beispiel

also affordable products. A product in the high-end segment can, of course, also become expensive, it should, however, still be an affordable industrial product. Also not quite common materials like plastic foil, metal yarns, eucalyptus or abaca fibres are used in our design process

How do you manage to be successful artistically and economically at the same time?

To me both the personal relationship with the people I work with as well as open mindedness and fairness from all sides are very important for me. When the chemistry is right, chances are very high that people can create artistic success together and can thus also generate economic benefit. As a designer you have to bring a lot of commitment and to offer high-quality service. In design it is a challenge to attribute as much value to the artistic performance as to the economic performance that is achieved subsequently, even if the economic success can very often not be influenced by the designer.

What is important for you regarding the development of new products and what would you recommend to our students?

All products need to be produced somewhere. Even in manual production tools or machines are involved. The more you know about manufacturing technology and the application on site the more effectively you can include this knowledge in innovation and consider and challenge the technical conditions in your drafts. Only that way you can achieve something really new. Being at manufacturing facilities is just as important for the textile design as working in the studio.

Do you have any personal advice for the students?

Be curious, live the moment, be true to yourself, and listen to your gut feeling more often.

sind die Produkte oft so komplex, dass man sehr viel Wissen braucht, um sie zu verkaufen. Ich habe außerdem das Glück, dass ich mich in der Technik genauso wohl fühle wie in der Ästhetik. Das war zuerst schwierig, nun ist es ein Vorteil.

Was ist für Sie bei der Entwicklung von neuen Produkten wichtig und was würden Sie unseren Studierenden empfehlen?

Alle Produkte müssen irgendwo produziert werden. Selbst bei manueller Fertigung sind Werkzeuge oder Maschinen involviert. Je mehr man über Fertigungstechniken und den Einsatz vor Ort weiß, desto besser kann man dies in Innovationen einfließen lassen und in den Entwürfen auf technische Bedingungen eingehen oder diese herausfordern. Nur so kommt man auf wirklich neue Dinge. Der Besuch der Produktionsstätten ist also ein genauso wichtiger Bestandteil wie die Arbeit im Büro oder Atelier.

Und haben sie noch einen persönlichen Rat für die Studierenden?

Neugierig sein, den Moment zu leben, sich selbst treu zu bleiben und öfter einmal auf sein Bauchgefühl zu hören.



TEACHERS STATEMENTS
STATEMENTS LEHRENDE

// DESSINATUR //
 - EXPERIMEN-
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 IS
 EXPLICITLY
 DESIRED !

DESSINATUR - EXPERIMENTATION IS
 EXPLICITLY DESIRED

At the beginning inspiration is the focus. Optical and tactile stimuli from different sources shape the inspiration into an idea. The usability requirements raise the profile of this idea and force the development process. "Dessinatur" is a textile and product-oriented design process in dobby weaving. In the first sketch, design and technical factors are considered equally, because the tissues are not only determined by the aesthetic, but also by functionality of use. The design task requires for an analysis of the material, the yarns, the weave constructions and the appropriate thread densities. Taking into account the available weaving machine, these parameters are connected to a quality base. Of course, a digital presentation of the patterns is also available to variate aesthetic aspects. Various quality tests and optimization for the use of the product take place in further steps. The result is often a revised, cleaner and production-oriented appearance of the original idea.

DESSINATUR - EXPERIMENTIEREN IST
 AUSDRÜCKLICH ERWÜNSCHT!

Am Anfang steht eine Inspiration im Raum. Optische und haptische Reize aus verschiedenen Quellen kleiden die Inspiration in eine Idee. Anforderungen an die Gebrauchstauglichkeit schärfen das Profil dieser Idee und bringen den Entwicklungsprozess in Gang. „Dessinatur“ ist ein textiler und produktorientierter Designprozess in der Schafweberei. Im Gewebeeentwurf werden gestalterische und technische Faktoren gleichermaßen berücksichtigt, denn die Gewebe werden nicht nur durch die Ästhetik sondern auch durch Funktionalität für den Gebrauch bestimmt. Die Entwurfsaufgabe fordert eine Auseinandersetzung mit den Faserstoffen, den daraus gesponnenen Garnen, den Bindungen und den passenden Fadendichten. Diese Parameter werden, unter Berücksichtigung des zur Verfügung stehenden Maschinenparks, zu einer Qualitätsbasis zusammengestellt. Natürlich steht auch eine digitale Präsentation (CAD) der Muster zur Verfügung, um den Ästhetischen Aspekt weiter zu entwickeln. Nach dem Weben der ersten Muster erfolgen diverse Qualitätsprüfungen und Optimierung für den Gebrauch des Produkts. Oft ist das Resultat eine überarbeitete, cleanere und produktionstaugliche Erscheinung der ursprünglichen Idee.

// DES- SI- NA- TUR !!! .

In today's terms of the market this creative process is under enormous time and pressure to succeed. Design solutions must be presented faster and perfect. Thereby, the novelty already assesses a review or variation. It is a great challenge and the claim to receive an added value to the product, which on the one hand encourages the consumer for consumption, but on the other hand continues to the sustainable use of the product. Therefore, product development and design are a complex interaction. Dessinatur in teaching is not only a product-oriented design process, but also has always the character of an experiment, and holds many surprises. The experiments break through conventional ways and offer new approaches for variations and room for creative solutions. The focus is rather set on individuality than on productivity. The limits of usability are frequently exceeded in favor of an overemphasis on aesthetic characteristics. Profound knowledge of the binding technique and doobby technology is absolutely necessary to exploit the experiments. But mistakes and carelessness can extend the creative pool as well. Then, the created samples are to perceive as a source of inspiration for the industrial development of the fabric collection.

Dieser kreative Prozess steht unter den heutigen Gesichtspunkten des Marktes unter enormen Zeit- und Erfolgsdruck. Designlösungen müssen immer schneller und perfekter präsentiert werden. Dabei ist das Novum eine Überarbeitung oder Variation von bereits Bewährtem. Es ist eine große Herausforderung und der Anspruch einen Mehrwert im Produkt zu erhalten, der den Konsumenten einerseits zum Konsum anregt, aber andererseits zum nachhaltigen Umgang mit dem Produkt anhält. Daher sind Produktentwicklung und Design ein komplexes Zusammenspiel.

Dessinatur in der Lehre ist nicht nur ein produktorientierter Gestaltungsprozess, sondern weist unbedingt auch immer den Charakter eines Experiments auf und birgt viele Überraschungen. Die Experimente durchbrechen konventionelle Wege und bieten neue Ansätze für Variationen und Raum für kreative Lösungen. Dabei wird der Schwerpunkt eher auf die Individualität als auf die Produktivität gesetzt. Die Grenzen der Gebrauchstauglichkeit werden häufig zu Gunsten einer Überbetonung von ästhetischen Merkmalen überschritten. Fundierte Kenntnisse der Bindungstechnik und Schafittechnologie sind dabei unbedingt erforderlich, um die Experimente auszureizen. Aber auch Fehler und Unachtsamkeit können den kreativen Pool erweitern. Die erstellten Musterproben sind dann als Inspirationsquelle für eine industrielle Kollektionsentwicklung zu sehen.

BETWEEN BACK END AND FRONT END DESIGN IN CONTEXT WITH THE TEXTILE INDUSTRY 4.0

BETWEEN BACK END AND FRONT END - DESIGN IN CONTEXT WITH THE TEXTILE INDUSTRY 4.0

The fourth industrial revolution has arrived. Driven by digitalization and the internet new options for production come into existence, focusing on more flexibility, speed and efficiency. The aim is a high degree of individualization of products considering the conditions of a highly-flexibilized production. In the textile industry 4.0 enterprises and whole added-value networks should be steered and optimized with the help of intelligent monitoring processes in almost real time.¹

In our age of information in the globalized world I, as a professor, am very much aware of what kind of as well as how much responsibility arises from the multi-faceted knowledge of production and product development. To sensitize our students for this and to pass on this sense of responsibility to the next generation of designers is an important, personal concern of mine.

On the one hand it is demanded from us to include the customer in the designing of products to generate a higher incentive to buy and, at the same time, to avoid defective production. Here, the focus is clearly on efficiency under consideration of the aspects economy and sustainability.

On the other hand even a "worst-case"-design created by a customer must match the CI of the company/brand. Those companies who invite their customers to contribute to designing usually have generated a well-conceived tool box system, which basically inhibits the worst slips of the customers. At large, only suitable, clearly limited products are selected for this kind of co-design. The collection itself usually remains firmly in the hands of the approved design team.

It is understood that the customer in the new "see now - buy now" consumer landscape does not want to wait for his desired product for weeks. European productions with flexible

ZWISCHEN BACK END UND FRONT END - DESIGN IM KONTEXT MIT DER TEXTIL-INDUSTRIE 4.0

Die vierte industrielle Revolution ist da. Getrieben durch die Digitalisierung und das Internet entstehen neue Produktionsmöglichkeiten mit dem Fokus auf mehr Flexibilität, Schnelligkeit und Effizienz. Ziel ist eine starke Individualisierung der Produkte unter den Bedingungen einer hochflexibilisierten Produktion. In der textilen Industrie 4.0 sollen Unternehmen und ganze Wertschöpfungsnetzwerke mit Hilfe von intelligenten Monitoring-Prozessen in nahezu Echtzeit gesteuert und optimiert werden können.¹

In unserem Informationszeitalter in der globalisierten Welt ist mir als Professorin sehr bewusst, welche Verantwortung aus dem vielfältigen Wissen um Produktion und Produktentwicklung erwächst. Unsere Studierenden dafür zu sensibilisieren und dieses Verantwortungsbewusstsein an die nächste Generation von Designern weiterzugeben, ist mir ein wichtiges, persönliches Anliegen. Einerseits wird von uns verlangt, den Kunden in die Gestaltung von Produkten mit einzubeziehen, um durch individualisierte Produkte einen höheren Kaufanreiz zu erzeugen und gleichzeitig Fehlproduktionen zu vermeiden. Effizienz unter den Aspekten Ökonomie und Nachhaltigkeit steht hier klar im Fokus.

Andererseits muss auch ein vom Kunden kreierte „worst-case“-Design noch zur CI der Firma/Marke passen. Die Firmen, die den Kunden „mit-designen“ lassen, haben daher üblicherweise selbst ein sehr gut durchdachtes „Baukasten“-System generieren lassen, das schlimmste Geschmacksausrutscher des Kunden grundsätzlich verhindert. Insgesamt werden auch immer nur entsprechend geeignete, klar eingegrenzte Produkte für diese Art des Co-Designs ausgewählt. Die Kollektion an sich bleibt üblicherweise in der Hand des erprobten Design-Teams. Dass der Kunde in der neuen „see now - buy now“-Konsumlandschaft im Anschluss nicht wochenlang auf sein Wunschprodukt warten möchte, versteht sich von selbst.

manufacturing solutions are gaining interest again, up to fully-automated production facilities like, for example, the Speedfactory with which adidas brought a segment of the sneaker production from Asia to Middle Franconian Ansbach in 2016, and has already planned a production volume of 500,000 pieces for this year.²

Interestingly, the task profile for the design in this new production and consumer world is becoming more and more multi-faceted and sophisticated. As part of creative processes, products have to be elaborated down to the last detail. Apart from the aesthetic aspect, different requirements specifications, options for production, price range, material parameters, distribution concepts, tight time frames and different sustainability factors up to the planned end of the product life, e.g. through recyclable constructions, need to be considered. Here, the digital media are the tools that help to visualize ideas as well as to make single steps comprehensible. Without the expert knowledge and creative skills of the user they remain, however, useless.

Especially 3D-programs have recently become more and more important as they help to reduce the amount of prototypes and initial samples that are produced worldwide drastically, as well as to make collection design easier. Once the decision for a product has been made, varieties of colour and material, combination options and outfits can be offered to customers in digital showrooms in the next step.

Through the digital boom the stationary trading is confronted with new challenges at the same time: declared dead and obviously indispensable – as shown by originally pure online retailers like ABOUT YOU and Zalando who are pushing towards the real brick and mortar stores.

Consuming has become a free time attraction. Shop planning today means to stage brand worlds but also social meeting points: the transformation from pure sales space into an interactive lifestyle event. This takes place in a world

Europäische Produktionen mit flexiblen Fertigungslösungen werden somit wieder interessant, bis hin zu vollautomatisierten Produktionsstätten wie z.B. der Speedfactory, mit der adidas in 2016 ein Segment der Turnschuhproduktion aus Asien ins mittelfränkische Ansbach geholt und bereits für dieses Jahr eine Produktionsmenge von 500.000 Stück geplant hat.²

Interessanterweise wird gerade das Aufgabenprofil für das Design in dieser neuen Produktions- und Warenwelt immer vielfältiger und anspruchsvoller. Produkte müssen im Rahmen des kreativen Prozesses bereits bis ins kleinste Detail durchdacht werden. Neben dem ästhetischen Aspekt müssen verschiedene Anforderungsprofile, Produktionsmöglichkeiten, Preisrahmen, Material-Parameter, Vertriebskonzepte, enge Terminfenster und unterschiedlichste Nachhaltigkeitsfaktoren bis hin zum vorgeplanten Ende des Produktlebens z.B. durch recycelfähige Konstruktionen beachtet werden. Die digitalen Medien sind hierbei die Werkzeuge, mit deren Hilfe Ideen visualisiert und einzelne Schritte nachvollziehbar gemacht werden können. Ohne ein fachliches Wissen und kreatives Können des Anwenders bleiben sie allerdings nutzlos.

Gerade 3D-Programme werden derzeit immer wichtiger, da sie helfen, die Menge von weltweit produzierten Prototypen und Erstmustern drastisch zu reduzieren und den Design-Teams die Kollektionsgestaltung erleichtern. Ist die Entscheidung für ein Produkt gefallen, kann man im nächsten Schritt dem Kunden Farb- und Materialvielfalt, Kombinationsmöglichkeiten und Outfits in digitalen Showrooms anbieten.

Durch den digitalen Boom ist gleichzeitig aber auch der stationäre Handel mit neuen Herausforderungen konfrontiert. Tot gesagt und offensichtlich doch unverzichtbar, wie das Drängen selbst reiner Online-Anbieter wie About you und Zalando auf die realen Verkaufsflächen zeigt.

Konsum ist zum Freizeiterlebnis geworden. Ladenplanung bedeutet heute das Inszenieren von Markenwelten aber auch von sozialen Treffpunkten: Die Umwandlung der reinen

of experience next to the real products like, for example in the latest Top Shop store in London, or also very close to the product, for example in factory stores in which products are designed, equipped with individualized adjustments and then produced.

At the turn of the year 2016/17, adidas let the desired sweater materialize via 3D seamless technology practically in front of the eyes of the customers in a pop-up store in the Bikini Haus in Berlin. A process, that creates appreciation of the product and an emotional bond with the customer.

This example shows that especially knitting is very well-suited for designing products three-dimensionally as well as to produce them at minimal joining requirements. The premium brand Marc Cain manufactures approximately 30% of its collection with this seamless-technology with their production facility in the Swabian Alps.³

As a knitting designer I am very proud that our design students have the possibility to experiment with knitting technology in the various laboratories in Mönchengladbach and that they – if they wish – can test themselves, research and creatively “let off steam” in the “loop” as well as in many other textile disciplines.

The multi-faceted projects in this book show the tremendous and impressive creativity, technical know-how, scientific curiosity and boisterous delight in experimentation of our students, who can confront the tasks and challenges of the textile industry 4.0 responsibly.

Verkaufsfläche in einen interaktiven Lifestyle-Event. Dies geschieht mit einer Erlebniswelt neben den realen Produkten, wie z.B. im neuesten Top-Shop-Store in London oder auch ganz nah am Produkt z.B. in Factory-Stores, in denen das Produkt gestaltet, mit individualisierten Anpassungen versehen und produziert wird.

So ließ wiederum adidas über den Jahreswechsel 2016/17 im Bikini-Haus, Berlin den gewünschten Pullover in 3D-Seamless-Technologie praktisch vor den Augen des Kunden, in einem Pop-up-Store entstehen. Ein Prozess, der Wertschätzung für das Produkt und emotionale Bindung zum Kunden schafft.

Wie dieses Beispiel zeigt, ist gerade das Stricken sehr gut dazu geeignet, Produkte 3-dimensional zu gestalten und mit minimalem Konfektionsaufwand zu produzieren. Die Premium-Marke Marc Cain fertigt mittlerweile ca. 30 % ihrer Kollektion in dieser Knit&Wear®-Technologie mit ihrer Produktion auf der Schwäbischen Alb.³

Als Strickdesignerin bin ich persönlich sehr stolz darauf, daß unsere Design-Studierenden die Möglichkeit haben, in unseren zahlreichen Laboren in Mönchengladbach, mit der Stricktechnologie zu experimentieren und sich – wenn sie möchten – in der „Masche“, aber auch in vielen anderen textilen Disziplinen zu erproben, zu forschen und sich kreativ „auszutoben“.

Die vielfältigen Projekte in diesem Buch zeigen die große Kreativität, das technische Know-how, den Forscherdrang und die Experimentierfreudigkeit unserer Studierenden, die sich den Aufgaben der textilen Industrie 4.0 verantwortungsvoll stellen können.

¹Cf.: <https://www.bmbf.de/de/zukunftsprojekt-industrie-4-0-848.html>

²Cf.: <https://www.welt.de/wirtschaft/article155658067/Die-Speedfactory-ist-fuer-Adidas-eine-Revolution.html>

³Cf.: *Textilwirtschaft, special edition "Digital", May 2017, page 7*

¹Vgl.: <https://www.bmbf.de/de/zukunftsprojekt-industrie-4-0-848.html>

²Vgl.: <https://www.welt.de/wirtschaft/article155658067/Die-Speedfactory-ist-fuer-Adidas-eine-Revolution.html>

³Vgl.: *Textilwirtschaft, special edition "Digital", May 2017, page 7*



HUMAN – MATERIAL – PATTERN
THINKING LATERALLY, EMPATHIZING AND
ACTING RESPONSIBLY

Design starts with a challenge, with the procedural and experimental development of an idea.
“Gestalten” means to develop – yourself and your environment.
“Gestalten” means to move into a new direction, to provide direction, to lead the way.

“Gestalten” is
becoming.

This process starts in the mind, with an inspiration that craves for realization. The way to this is creative and open, intuitive, associative, exploratory, context specific, multicultural, aesthetically sensual and haptically perceptible, dynamic, interdisciplinary and innovative.

Textile covers people and space.
Textile creates identity and atmosphere, it protects, it draws a line and connects.

Textile is
universal.

MENSCH – MATERIAL – MUSTER
QUERDENKEN, EINFÜHLEN UND
FAIRHANDELN

Design beginnt mit einer Herausforderung, mit der prozesshaften, experimentellen Weiterentwicklung einer Idee.
Gestalten heißt zu entwickeln – sich selbst, seine Umgebung.
Gestalten bedeutet eine Richtung einschlagen, Richtung vorgeben, Richtung weisen.

Gestalten ist
werden.

Dieser Prozess beginnt im Kopf mit einer Inspiration, die nach Realisation drängt. Der Weg dahin ist kreativ und offen, intuitiv, assoziativ, forschend, kontext-bezogen, multikulturell, ästhetisch-sinnlich und haptisch erlebbar, dynamisch, interdisziplinär und innovativ.

Textil umfasst den Menschen und den Raum
Textil schafft Identität und Atmosphäre, es schützt, zieht Grenzen und verbindet.

Textil ist
universell.

THINKING
LATERALLY,
EMPATHIZING

&

ACTING
RESPONSIBLY

Textile material development encompasses global production processes, is subjected to technical, social, cultural and ethnical, ecological and economical structures and connects given conditions with possibilities. From this rises textile innovation and research, ingenuity in functionalisation and ongoing digitisation.

Patterns phrase and visualise.

Patterns are a language – they speak to us and express.

Patterns are
emotional.

Designing textile patterns means following an assignment. The path towards this includes the conscious and learned handling of design methods, which are implemented artistically and strategically in form, colour and structure.

From the cultural textile heritage to the visionary designing of future textiles, textile patterns have to be recognized, questioned, broken, redefined and redesigned as signs of their time and a changing world.

In the complex interaction of new technologies and textile codes, textile designers are urged to think laterally, to empathize and to act responsibly.

Die textile Materialentwicklung umspannt globale Produktionsprozesse, unterliegt technischen, sozialen, kulturellen und ethischen, ökologischen und ökonomischen Strukturen und verbindet Gegebenheiten mit Möglichkeiten. Daraus entspringt textile Innovation und Forschung, Erfindungsgeist für Funktionalisierung und eine fortschreitende Digitalisierung.

Muster formulieren und machen sichtbar.

Muster sind Sprache – sie sprechen an und drücken aus.

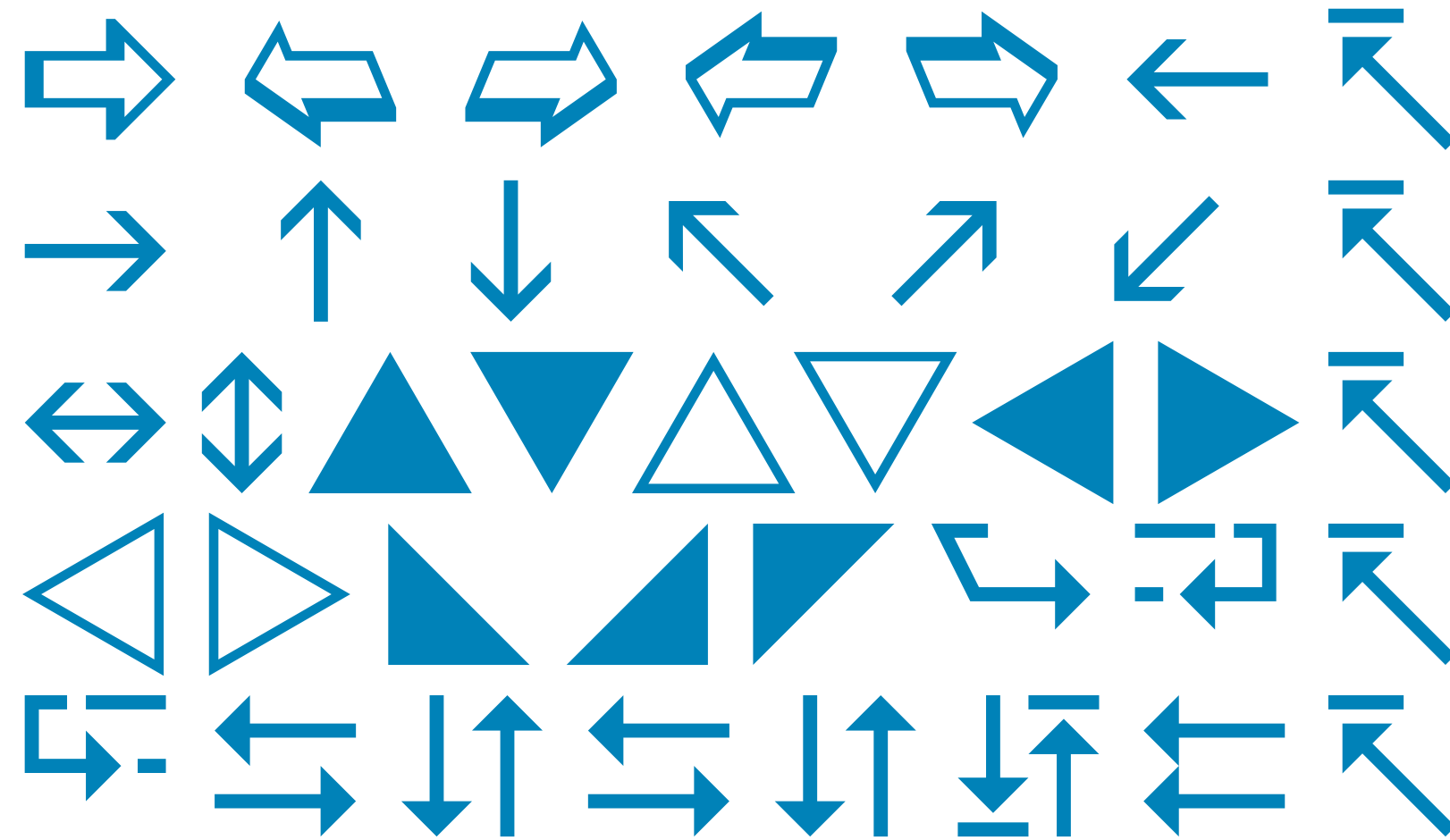
Muster sind
emotional.

Das Entwerfen textiler Muster folgt einem Auftrag. Der Weg dahin umfasst den bewussten und gelernten Umgang mit Gestaltungsmethoden, die künstlerisch und strategisch gezielt in Form, Farbe und Struktur umgesetzt werden.

Vom kulturellen textilen Erbe bis hin zum visionären Gestalten zukünftiger Textilien müssen textile Muster als Zeichen der Zeit und dem Wandel in der Welt erkannt, hinterfragt, aufgebrochen, neu definiert und gestaltet werden.

Im komplexen Zusammenspiel von neuen Technologien und textilen Codes sind Textilgestalter aufgefordert quer zu denken, sich einzufühlen und verantwortungsvoll zu handeln.

INTERACTIVE TEXTILES



INTERACTIVE TEXTILES



Textiles that actively communicate with their environment increasingly gain attention in education and research, as well as by the general public. Luminous dresses and evening gowns, textile monitoring systems in medical bandages and anti-theft systems in truck tarpaulins are prominent examples of intelligent textiles that simultaneously show their wide application spectrum. From medicine, the automotive sector to the entertainment sector, products are developed and marketed for both, the clothing and technical textile sector.

Interactive textiles have a highly interdisciplinary character and make use of the broad range of subjects offered during our study programs. Our students combine and skillfully apply physical and chemical principles as well as applied programming sciences with design aspects, pattern making, product development and confectioning of textile materials into products.

To develop an interactive or intelligent textile students first deal with materials and technologies. Theoretical knowledge learned during lectures is finally applied in student projects and "final theses research", developing their own, creative prototypes as well as obtaining scientifically valuable results. They experiment, for example, with electrically conductive yarns, shape memory alloys and fiber optics, and process these materials into textile structures, embed them on textile surfaces and apply 3D printing.

INTERAKTIVE TEXTILIEN



Textilien, die aktiv mit ihrer Umgebung kommunizieren, erhalten in der Lehre und Forschung, und auch in der breiten Öffentlichkeit immer mehr Aufmerksamkeit. Leuchtende Kleider und Abendroben, textile Überwachungssysteme in Kniebandagen und Diebstahlsicherungen in LKW-Planen sind prominente Beispiele von intelligenten Textilien, die gleichzeitig ihr Anwendungsspektrum aufzeigen. Von Medizin, dem automobilen Bereich bis hin zum Unterhaltungssektor werden Produkte im Bekleidungs- und im technischen Bereich entwickelt und vermarktet.

Interaktive Textilien haben einen stark interdisziplinären Charakter und bedienen sich dem weiten Fächerspektrum unseres Studienangebots. Physikalische und chemische Grundlagen als auch angewandte Programmierungswissenschaften müssen die Studierenden mit Designaspekten, der Produktentwicklung und der Konfektionierung gekonnt kombinieren und anwenden.

Um ein interaktives oder intelligentes Textil zu entwickeln, setzen sich Studierende zunächst mit Materialien und Technologien auseinander. Theoretisches Wissen aus Vorlesungen wenden sie schließlich in Projekten und Abschlussarbeiten an, und übersetzen es sowohl in eigene, kreative Prototypen, als auch in wissenschaftliche Messreihen. Sie experimentieren beispielsweise mit elektrisch-leitfähigen Garnen, Shape Memory Alloys und Lichtleitern, und verarbeiten diese zu textilen Flächen,

They develop creative methods to connect and integrate non-textile components, especially the Arduino Lilypad, with a textile substrate. This results in holistic, intelligent textile systems which react to changes in their environment with light effects and shape changes. An important aspect that drives the development of textile systems is the generation of an added value for society. In this way, the students are critically defining socially relevant scenarios, for which intelligent, textile concepts create value. For instance, increasing safety in the working environment and in everyday life, support for people with limitations and clinical pictures are taken into account.



Students do not solely develop complete textile systems. In our education concept we also encourage students to develop single components such as sensors, textile batteries and light-emitting textiles as actuators. For this purpose the wide range of textile production processes is used, ranging from spinning processes of yarns, coatings of yarns and fabrics, to weaving and knitting as well as embroidered structures.

In order to create a true added value for textiles, especially in the area of interactive materials, it is important that functionality is integrated into the basic component of a textile product - a yarn. With the help of innovative yarn coating processes, students develop conductive filaments and yarns that react to pressure, humidity and temperature with a change in their electrical properties.

Conductive yarns are also explored for energy generation purposes. By means of a textile sandwich structure,

versticken sie und nutzen den 3D-Druck. Sie entwickeln kreative Ansätze, um nicht-textile Komponenten, allen voran das Arduino Lilypad, mit dem textilen Substrat geschickt zu verbinden und zu integrieren. So entstehen ganzheitliche, intelligente Textilsysteme, die auf Veränderungen in ihrer Umgebung mit Lichteffekten und Formänderungen reagieren. Ein wichtiger Aspekt, der in die Entwicklung der Textilsysteme einfließt, ist die Generierung eines gesellschaftlichen Mehrwerts. So gehen die Studierenden von gesellschaftlich relevanten Szenarien aus, für die intelligente, textile Konzepte erarbeitet werden. Erhöhung der Sicherheit in der Arbeitsumgebung und im Alltag, Unterstützung von Menschen mit Einschränkungen und medizinische Krankheitsbilder werden beispielsweise bedacht.



Es werden nicht nur komplette Systeme entwickelt. In unserem Lehrkonzept verfolgen wir auch die Entwicklung einzelner Komponenten, wie Sensoren, textilen Batterien und licht-emittierenden Textilien als Aktuatoren. Dabei wird sich der breiten Palette an textilen Fertigungsverfahren bedient, angefangen bei Spinnprozessen von Garnen, über Beschichtungen von Garnen, bis hin zu Geweben, Gestriicken und gestickten Strukturen.

Um gerade im Bereich der interaktiven Materialien einen Mehrwert für Textilien zu erzeugen, ist es wichtig, dass Funktionalität schon in den kleinsten Baustein eines textilen Produkts – einem Garn – integriert wird. So entwickeln Studierende mit Hilfe von innovativen Garnbeschichtungsprozessen leitfähige Filamente und Garne,

flexible, textile batteries are formed. For this purpose, two metallized yarns, each representing anode and cathode respectively, are embroidered onto a textile material, and then coated with electrolytic gel layers.



Conclusively, the idea driving all student activities is to develop economic solutions for interdisciplinary challenges using well defined methods and creativity. The student works are predominately linked to ongoing research projects with industrial participation, or are developed in direct collaboration with companies. It is our aim to shape and improve the skills of young talents on relevant innovations and to support the transfer of obtained results to the industry.

die auf Druck, Feuchtigkeit und Temperatur mit einer elektrischen Widerstandsänderung reagieren.

Leitfähige Garne werden auch zur Energieerzeugung genutzt. Durch eine textile Sandwichstruktur entstehen beispielsweise flexible, textile Batterien. Hierzu werden zwei metallisierten Garnen, die jeweils Anode und Kathode darstellen, auf einen textilen Träger aufgestickt, und anschließend über eine elektrolytische Gelbeschichtung miteinander verbunden.



Schlussendlich steht hinter allen Entwicklungen und studentischen Projekten der Gedanke, mit strukturierten Methoden und Kreativität wirtschaftliche Lösungen für interdisziplinäre Fragestellungen zu entwickeln. Eine Vielzahl der Arbeiten ist an aktuelle Forschungsprojekte mit Industriebeteiligung gekoppelt, oder entsteht in einer direkten Zusammenarbeit mit Unternehmen. Es ist unser Anspruch, Menschen an relevanten Innovationsthemen zu entwickeln und einen Transfer der Ergebnisse in die Industrie zu unterstützen.

”

form

follows

function

Louis Sullivan, 1896

”

FORM FOLLOWS FUNCTION

When American architect Louis Sullivan, one of the first high-rise architects, formulated this famous phrase in 1896, he wanted to focus his colleagues on the function of the buildings because the façades of the early skyscrapers were partly completely ornamented. He could scarcely have foreseen the fact that this sentence will be important after more than a hundred years.

Today, this principle is a fundamental design principle in architecture and product design. He postulates that the external form of an object is to be derived from its (use) function.

While this principle is applied with utmost self-confidence in architecture and product design, the question arises as to how far this is applied in the fashion design. If you look at a classic of fashion, the trench coat, you will find that every design element can be assigned a function.

The consumer of today knows the original function of a storm saddle, which should protect the rifle piston from rain, hardly any. The original protective trench coat from the First World War has long since become a civilian product. The functional elements have developed into characteristic product features and are still integrated in the product design of a trenchcoat.

FORM FOLLOWS FUNCTION

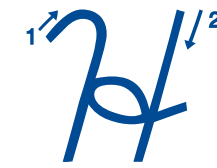
Als der amerikanische Architekt Louis Sullivan – einer der ersten Hochhausarchitekten – diesen berühmten Satz im Jahre 1896 formulierte, wollte er den Blick seiner Kollegen auf die Funktion der Gebäude richten, denn die Fassaden der frühen Hochhäuser waren teilweise vollständig ornamentiert. Er konnte wohl kaum ahnen, dass dieser Satz nach noch mehr als hundert Jahren von Bedeutung sein wird.

Heute gilt dieser Leitsatz als grundlegendes Gestaltungsprinzip in Architektur und Produktdesign. Er postuliert, dass sich die äußere Form eines Gegenstandes aus seiner (Gebrauchs-) Funktion ableiten soll. Während dieser Grundsatz in der Architektur und im Produktdesign mit größter Selbstverständlichkeit angewandt wird, stellt sich die Frage, in wie weit dieser im Modedesign Anwendung findet.

Betrachtet man einen Klassiker der Mode, den Trenchcoat, so wird man feststellen, dass jedem Gestaltungselement eine Funktion zugesprochen werden kann. Der Konsument von heute kennt die ursprüngliche Funktion eines Sturmsattels, welcher den Gewehrkolben vor Regen schützen sollte, wohl kaum. Längst ist der ursprüngliche Schützengrabenmantel aus dem 1. Weltkrieg zu einem zivilen Produkt geworden. Die Funktionselemente haben sich zu charakteristischen Produktmerkmalen entwickelt und werden bis heute im Produktdesign eines Trenchcoats integriert.



Form Follows Function



However, the trench owes its social status to its famous bearers, starting with Humphrey Bogart in the film "Casablanca" (1942) to the pop icon Rihanna. The consumer of today carries the trench because of his status. This is underpinned by its long tradition. The "real" trench coat comes from the label Burberry, easy to recognize at the Burberry check in the food. As early as 1865, Thomas Burberry founded this brand to defy the British weather with functional clothing made of waterproof gabardine.

This knowledge about clothing forms is intended to enable the students to question and reinterpret classical products. This is achieved through the targeted use of design strategies such as adding (adding new design elements), replacing (replacing "old" elements) or crossing over. At the same time, the requirements of the consumer for the (use) function of a product should always be at the forefront, however, without neglecting aesthetic principles and aspects of the communication function, since only "form follows function" can be used sensibly in the fashion design.



einen gesellschaftlichen Status verdankt der Trench jedoch seinen berühmten Trägern, beginnend mit Humphrey Bogart im Film „Casablanca“ (1942) bis zur Pop-Ikone Rihanna. Der Konsument von heute trägt den Trench seines Status wegen. Dieser wird durch seine lange Tradition untermauert. Der „echte“ Trenchcoat stammt von dem Label Burberry, unschwer am Burberry-Check im Futter zu erkennen. Bereits 1865 gründete Thomas Burberry diese Marke, um mit Funktionsbekleidung aus wasserdichter Gabardine dem britischen Wetter zu trotzen.

Dieses Wissen über Bekleidungsformen soll den Studierenden befähigen, klassische Produkte zu hinterfragen und neu zu interpretieren. Dies geschieht durch den gezielten Einsatz von Designstrategien wie Adding (Hinzufügen von neuen Bausteinen), Replacing (Ersetzen von „alten“ Bausteinen) oder Crossing over (Kreuzen von Elementen). Dabei sollten die Anforderungen des Konsumenten an die (Gebrauchs-)Funktion eines Produktes immer im Vordergrund stehen, jedoch ohne ästhetische Prinzipien und Aspekte der Kommunikationsfunktion zu vernachlässigen, denn nur so kann „form follows function“ im Modedesign sinnhaft eingesetzt werden.

"TRUST IN THE ENCOURAGEMENT OF NEW DESIGN / MANAGER NOTHING ELSE"

(Marina-Elena Wachs)

SUSTAINABLE DESIGN MODELS -
SUSTAINABLE THINKING AND ACTING IN
DESIGN AND IN DESIGN EDUCATION: A QUES-
TION OF CULTURAL VALUE

Design is sensitive, Design is the mediator between products and user, is in the interest of the entrepreneur and the consumer group. The act of buying, not at all created by emotional, visual product values, but generating ethical value, in using resource efficient production circles, beside the creation of functional and long lasting cultural goods.

High quality of products and services is a consequence of sustainable designing in asking about the origin, the need and additive design qualities, in focussing a responsible behaviour. You have to think, to produce, to invest in a sustainable manner to act responsible in production and economy circles to come to and to live with a circular thinking model. This is the only way for all participating partners to benefit - of course Mother Earth: "We believe in giving back, whether to Mother Earth or the society that nurtures us."¹ This core value, by Sonia Sin and Frans Schrofer, expressing our common attitude in designing and in common design discussions. A group of students of the faculty Textile and Clothing Technology debated the product language and the material of the new chair "infinity", designed by Frans Schrofer, a prototype produced together with Fritz Becker GmbH at Brakel (Germany) and presented at the Interzum fair in 2017. The students came to the question, whether Infinity could satisfy possible long-lasting design qualities like one of the advanced classic ones. The case study coproduction between Schrofer Studio and Becker - this enterprise is a hidden champion in formal bentwood production and nowadays they are also qualified for formal felt production - proofs one more time just the creative "co-experiment" for designing advanced sustainable products and concepts.

SUSTAINABLE DESIGN MODELS
- NACHHALTIGES DENKEN UND DESIGNEN
FÜR DIE KREATIVWIRTSCHAFT: EINE FRAGE
DER KULTURELLEN WERTSCHÄTZUNG

Design ist ein sehr sensibler Faktor, Design ist Vermittler zwischen Produkt und User, zwischen produzierendem Unternehmen und Käufergruppe. Die Kaufentscheidung wird nicht allein über die emotionale, visuell agierende Designseite eines Produktes entschieden. Ethische Werte, die sich in der Verwendung von ressourceneffizientem Einsatz des Produktzyklus, neben der Gestaltung von Praktikabilität der kulturellen Güter, langlebig unser Leben lebenswert gestalten, schlagen sich in vielen Gestaltqualitäten nieder. „Ein nachhaltiges Design fragt in erster Linie nach Herkunft, Nutzen und Mehrwertgestaltung für einen dauerhaft guten Umgang mit Artefakten und mit der Natur.“¹

Insofern muss Design nachhaltiggedacht, produziert, finanziert werden und diese resilienten ethischen Werte generieren, dann sind wir in einem Circular Thinking Modell angekommen, von dem alle Teilnehmer profitieren können - auch Mutter Erde: „We believe in giving back, whether to Mother Earth or the society that nurtures us.“² Dieser Werteausspruch von Sonia Sin und Frans Schrofer, drückt unsere gemeinsame Haltung im Design aus. Unter der Betrachtung von Anforderungen des „Guten Produkt Designs“³ - vor allem mit Fokus auf Nachhaltigkeit, diskutierten die Studierenden die Produktsprache und Materialien des Stuhls >Infinity< von Schrofer, der in Kooperation mit Becker GmbH als Prototyp auf der Interzum Messe 2017 gezeigt wurde, als möglichen langlebigen Klassiker der Zukunft. Einmal mehr zeigt diese Kooperation des Designers Schrofer mit dem Unternehmen Becker GmbH, die für Formholz- und Formvliesverarbeitung stehen, genau dieses kooperative kreative Experiment, das wir im Design benötigen, um gute nachhaltige Produkte und Konzepte im Design zu generieren.

In the 21st century we come back to complex precious qualities of the "Kraft der Kooperation"² – power of cooperation, which means the benefit from the creative common 'design thinking'³ or 'thinking design'⁴, which is also demonstrated by the profitable case study of engineers by the Deutsche Fraunhofer Gesellschaft and design students in working and thinking on sustainable solutions and design services. These two cooperations define the ideal for our society, for the world, which was successfully proven in design history. The German Bauhaus is a comparable institution creating in this archetype model and giving trust in the merging (long lasting) classics.

In our curious, dynamic time, in which the effort is great "to generate the wheel again", we should trust in our experiences and come to appreciate this more powerfully as a real source. This fact is underlined by the philosophical futuristic speech by Roger Willemsen in 2015: "[...] it came along with a technical mastering: we became all concurrently, more sovereign and more powerless, safer and less stable, more target-oriented and diffused [...] outdated does the term individuality seem, which classifies itself through the continuous personality and an ability to stick with oneself, to be coherent, consequently!"⁵ Willemsen stated the consciousness or the feelings of the European society to encourage the young generation, not to accept the state of the art!

Sustainability as state of the art! – nothing else. In our faculty, many people are passionately dedicated to the stable factor: 'sustainability' and we trust in our students, to build up an eco design understanding and know-how, that lead to industrial standards and unpretentious living conditions. For new standards in eco designed circles, we need an adaption to natural living in sustainable circumstances earlier than at the beginning of studying. For a sensitive sustainable behaviour, we have to support more innovative curricula right at the beginning of school education in the subject of eco design

Wir sind im 21. Jahrhundert wieder auf die wertvollen Qualitäten der „Kraft der Kooperation“⁴ zurückgekommen und diese schlägt sich nieder in dem kreativen gemeinsamen Design Thinking⁵ oder Thinking Design⁶, das zum Beispiel die Fraunhofer Gesellschaft unterstützt, indem Ingenieure dieser Wissensinstitution mit Design-Studierenden gemeinsam nachhaltige Design-Lösungen kreieren. Das ist das Ideal für die Gesellschaft und in der Designhistorie erfolgreich erprobt. Das Bauhaus war eine vergleichbare renommierte Institution, die dieses Ideal lebte und die in einer Zeit der aufkommenden Classics Vertrauen in langlebige Produkte und Stile legte.

In einer derart schnelllebigen Welt von heute, die sich immer wieder neu erfinden möchte, sollten wir unseren Erfahrungen mehr Wert beimessen. Folgende Gleichzeitigkeiten, die uns heute beschäftigen, gingen mit der „[...] technischen Beherrschung einher: Wir wurden alles gleichzeitig, souveräner und ohnmächtiger, sicherer und instabiler, zielstrebig und zerstreuter. [...] Wie überkommen wirkt dagegen der Begriff von Individualität, der sich durch die kontinuierliche Persönlichkeit auszeichnet, durch eine Fähigkeit, bei sich zu bleiben, folgerichtig zu sein, konsequent!"^{6,7} Roger Willemsen. Hiermit traf Willemsen (2015) das Bewusstsein der Gesellschaft und wollte der nächsten Generation Mut machen, sich nicht einverstanden zu erklären. Technik trifft auf Erfahrung und auf Lebensinn. Sustainability as State of the Art! In unserer Fakultät Textil- und Bekleidungstechnik arbeiten viele Menschen an diesem stabilen Faktor Sustainability, und wir vertrauen auf unsere Studierenden, ein Ecodesign Verständnis und -wissen aufzubauen, das zu industriellen Standards und gelebten Selbstverständlichkeiten führt. Aber wir benötigen eine Ausbildung zum sensiblen nachhaltigen Umgang, welches stärker in den Bildungssystemen, in den Schulen verankert ist. Es fehlen in den Curricula Fächer, wie beispielsweise Design and the Benefits of Ecodesign oder Design-Engineering für unseren Planeten und für unsere Wettbewerbsfähigkeit. Der Wissenstransfer⁸, der in der "Digitalen Gesellschaft"

as well as in design engineering for resting as competitor - our planet will take benefit from. The great paradigm of know how-transfer /Wissenstransfer⁶, in the digital revolution, which is demanded by industry 4.0, could be triggered by valuable systems in transformation design⁷; at the same time it can recover experimental designing of multidiscipline teams by entrepreneurs, engineers, civil actor, designer, with social engagement and with people of different cultures.

For the triple bottom line (by John Elkington (1994): planet – people – profit, it is time for the young "generation app" (Marina Wachs) to start running. I believe in our talents, to change into sustainable life systems, to hold the responsibility for sustainable design and sustainable design management in the hands. I trust in the competence to profit from sustainable education as an intellectual capital for saving social capital, existence and natural sources. I take care of sustainably-educated design talents and design managers, supporting them in their personality development with the help of facilitating skills of Gestalt methodology and cultural intelligence: cultural education is the core value of sustainable concepts.

gefordert wird und den wir im aktuellen nachgefragten Phänomen des Transformation Design⁹ erfahren, macht Mut, das Design im Erproben mit Ingenieuren und Unternehmen aus anderen Disziplinen, aus anderen Kulturen, mit zivilen Akteuren und im sozialen Engagement – gerade auch im Experiment – mitzugestalten.

Es ist an der Zeit, dass auch die "generation app" losläuft. Ich vertraue auf ihre Fähigkeiten, sich Wissen als ihr individuelles Kapital nachhaltig anzueignen, für eine zufriedenstellende Existenzsicherung und für den gesellschaftlichen Profit. Wissen, welches wir in Zukunft für nachhaltige Prozesse benötigen und für unseren Planeten.¹⁰ Ich stehe für nachhaltig gebildete Design-Talents und Design Manager, die ich in ihrer Entwicklung insbesondere in der Gestaltmethodik und kulturellen Intelligenz fördere. Ich habe großes Vertrauen in den Mut der heranwachsenden Generation, die nachhaltigen Konzepte umzusetzen, die verschiedene Ansätze des Cultural- und Material Behaviour in ihre Betrachtungen mit einbeziehen und die Kreislauf- und Kreativwirtschaft in einem denkt, holistisch betrachtet.

¹ Wachs, Marina-Elena, 2010, in: Löffing, Christian u.a. (Hrsg.), 2010, *Bedürfnissen Gestalt geben – Verantwortung Gestalt geben*, Hochschule Niederrhein, S. 102.

² Schrofer Studio, Sonia Sin and Frans Schorfer, <http://www.studioschrofer.com>, cover side, online 1st July 2017.

³ Anm.: „gutes Produkt Design“ – Anforderungen nach den zehn Geboten von Dieter Rams; vgl. ebenso: nach Herbert Lindinger in den 1980er Jahren.

⁴ Vgl.: Raimund Neugebauer, Präsident des Fraunhofer Instituts im Gespräch zum Statement „Design muss Teil der Entwicklung werden“, *Design report 2/2017*, S. 82f.

⁵ Vgl.: Methode Design Thinking nach IDEO, bzw. Plattner, Hasso, 2009, *Design Thinking*, mi-Wirtschaftsverlag-Finanzbuchverlag, München.

⁶ Vgl.: Rittel, Horst W., (1992), 2013, *Thinking Design*, Birkhäuser Verlag, Basel.

⁷ Willemsen, Roger, 2017, (2016), *Wer wir waren – Zukunftsrede*, 6. Auflage, S. Fischer Verlag, Frankfurt am Main, S. 44f.

⁸ Vgl.: Präsidium der Hochschule Niederrhein, 2017, *Hochschul-Entwicklungsplan – den Wandel gestalten 2021*, Hochschule Niederrhein, Präambel, S. 8f.

⁹ Vgl.: Jonas, Wolfgang u.a. (Hrsg.), 2016, *Transformation Design*, Birkhäuser Verlag.

¹⁰ Anm.: People – Planet – Profit, innerhalb der Betrachtung der triple bottom line nach John Elkington, 1994.

¹ Schrofer Studio, Sonia Sin and Frans Schorfer, <http://www.studioschrofer.com>, cover side, online 1st July 2017.

² Cf.: Raimund Neugebauer, Präsident des Fraunhofer Instituts im Gespräch zum Statement „Design muss Teil der Entwicklung werden“, *Design report 2/2017*, S. 82f.

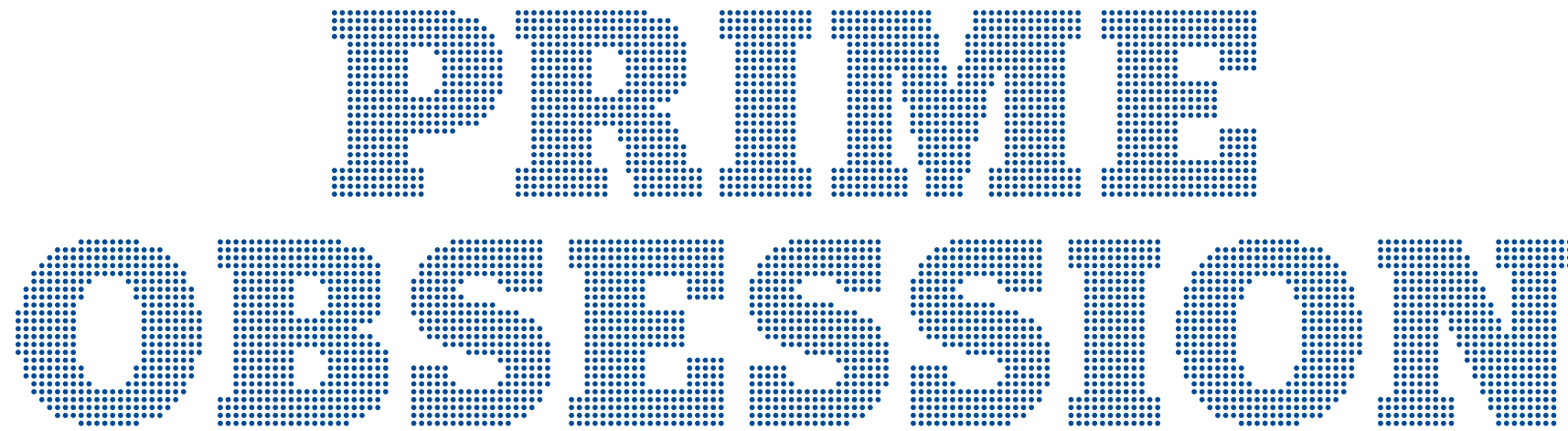
³ Cf.: Methode Design Thinking nach IDEO, bzw. Plattner, Hasso, 2009, *Design Thinking*, mi-Wirtschaftsverlag-Finanzbuchverlag, München.

⁴ Cf.: Rittel, Horst W., (1992), 2013, *Thinking Design*, Birkhäuser Verlag, Basel.

⁵ Willemsen, Roger, 2017, (2016), *Wer wir waren – Zukunftsrede*, 6. Auflage, S. Fischer Verlag, Frankfurt am Main, S. 44, translation: Viktor Schmidt, 2017.

⁶ Cf.: Präsidium der Hochschule Niederrhein, 2017, *Hochschul-Entwicklungsplan – den Wandel gestalten 2021*, Hochschule Niederrhein, Präambel, S. 8f.

⁷ Cf.: Jonas, Wolfgang u.a. (Hrsg.), 2016, *Transformation Design*, Birkhäuser Verlag.



"FASHION IS WHAT YOU ADOPT WHEN YOU
DON'T KNOW WHO YOU ARE."
(QUENTIN CRISP)

The position of man within society is constantly changing. This also modifies the clothing, which he uses as a mirror of his own and with which he communicates to the outside. Changes take place subtly. The selection, use, and purchase of clothing take place according to mechanisms that are essentially different from female decision-making. Here, the students learn about how they can approach the male consumer optimally. Therefore male nature and his use of the textile shell are the focus of all investigations.

Certainly also due to the technical affinity of the man, we are very much aware of new developments in the shaping of clothing within the work processes. Particularly exciting is the question of how the profession of the fashion designer will change in the near future, but also in the actually frequently cited industry 4.0.

"FASHION IS WHAT YOU ADOPT WHEN YOU
DON'T KNOW WHO YOU ARE."
(QUENTIN CRISP)

Die Position des Mannes innerhalb der Gesellschaft befindet sich im stetigen Wandel. Damit verändert sich auch die Kleidung, die er als Spiegel seines Selbst benutzt und nach außen kommuniziert. Veränderungen finden subtil statt. Auswahl, Nutzen und eine Kaufentscheidung von Kleidung finden nach Mechanismen statt, die sich im Wesentlichen von der weiblichen Entscheidungsfindung unterscheiden. Hier gilt es den Studierenden zu vermitteln, wie sich der männliche Konsument optimal ansprechen lässt. Das männliche Wesen und sein Gebrauch der textilen Hülle stehen deshalb im Fokus der Untersuchung.


Sicherlich auch bedingt durch die Technik-Affinität des Mannes setzen wir uns innerhalb der Arbeitsprozesse stark mit neuen Entwicklungen in der Formgestaltung von Kleidung auseinander. Besonders spannend ist dabei die Frage, wie sich das Berufsbild des Mode-Designers in der nahen Zukunft, aber auch in der aktuell oft zitierten Industrie 4.0 verändern wird.



FASHION
IS
WHAT YOU
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YOU
ARE.



QUENTIN CRISP



Within the mediation of design methods, operations are developed with manual and digital means. The students and I are currently investigating the scope that 3D programs offer

to the fashion designer within the actual design process. This means that we are designing on an avatar and material or processing variants could be changed within a few minutes. This gives students a quick impression of what is technically possible at all, without having to invest time and money.

Another important aspect is the current market saturation and the growing consumer awareness of ecology and ethics. This implies an even closer look at the development of the collection and the structure of the brand assortment. True to the motto of Antoine de Saint-Exupéry, "Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away."

The focus of the study is on the product and its user and not on the self-realization of the prospective designer. This design approach to the use of the garment assures the budding designers a successful place in the industry.



Innerhalb der Vermittlung von Design-Methoden wird sowohl mit manuellen als auch mit digitalen Mitteln gearbeitet. Die Studierenden und ich untersuchen aktuell den Spielraum, den 3D-Programme innerhalb des eigentlichen Entwurfsprozesses dem Designer bieten. Das bedeutet, dass wir daran arbeiten, am Avatar zu entwerfen und Material- beziehungsweise Verarbeitungsvarianten innerhalb wenigen Minuten durchspielen können. Dadurch erhalten die Studierenden einen schnellen Eindruck davon, was technisch überhaupt möglich ist, ohne Zeit und Kosten investieren zu müssen.

Ein weiterer, wichtiger Aspekt ist die gegenwärtige Marktsättigung und das wachsende Verbraucherbewusstsein in Bezug auf Ökologie und Ethik. Dies impliziert einen noch genaueren Blick auf die Kollektionsentwicklung und auf den Aufbau von dem Markensortiment. Getreu dem Motto von Antoine de Saint-Exupéry: „Perfektion ist nicht dann erreicht, wenn man nichts mehr hinzufügen, sondern wenn man nichts mehr weglassen kann.“

Der Blick des Studiums gilt also in erster Linie dem Produkt und seinem Träger (Nutzer) und nicht der Selbstverwirklichung des angehenden Designers. Diese Nähe zur Verwendung des Kleidungsstücks sichert den angehenden Designern einen erfolgreichen Platz in der Industrie.

CREATIVE SEAMING SOLUTIONS

FASCINATING VERSATILITY OF TEXTILE JOINING

Seams are the elementary joining element for textile fabrics and permit, therefore, to create final 3dimensional products such as dresses, car seats, parachutes or fiber composite components. Seams are used sometimes "only" for joining and for design, but they can also fulfill extremely different, highly demanding functions. What are the main seam criteria?

Seams - their appearance is the business card of our clothing and they emphasize as a decorative and constructive element design and message of a product.

Seams - their haptics make them to a decisive factor in wearing comfort, especially in clothing that is worn next to the skin.

Seams - their durability in use and robustness in care are important for long-life also in the case of heavy (industrial) laundry, e.g. for professional clothes, as well as UV- and weather resistance, e.g. for products in textile architecture.

Seams - due to their strength and elasticity, they first realize the required high quality of clothing, because already everyday body movements place the highest demands on the seam.

Seams - due to their quality, in extreme cases, human life can depend on seams, e.g. when airbag or parachute seams do not afford the required high stresses.

Seams - due to their functionality they are essential elements in protective and functional products, for example by chemical resistance or tightness against liquids and gases.

FASZINIERENDE VIELFALT DES TEXTILEN FÜGENS

Nähte sind das elementare verbindende Element für textile Flächen und machen es erst möglich, finale 3dimensionale Produkte, wie Kleider, Autositze, Fallschirme oder Faserverbundbauteile zu erstellen. Nähte dienen manchmal „nur“ zur Verbindung und zum Design und können doch auch extremst unterschiedliche, höchst anspruchsvolle Funktionen erfüllen. Was sind wesentliche Nahtkriterien - was zeichnet Nähte aus?

Nähte - durch ihre Optik sind sie die Visitenkarte unserer Kleidung und unterstreichen als dekoratives und gestaltendes Element Design und Produktaussage.

Nähte - durch ihre Haptik bestimmen sie maßgeblich den Tragekomfort, insbesondere bei Kleidung, die direkt auf der Haut getragen wird.

Nähte - durch ihre Gebrauchs- und Pflegebeständigkeit gewährleisten sie Langlebigkeit und Robustheit auch bei strapazierenden (Industrie)wäschen, z.B. bei Berufskleidung, genauso wie UV- und Wetterbeständigkeit z.B. bei Produkten in der textilen Architektur.

Nähte - durch ihre Festigkeit und Elastizität realisieren sie erst die geforderte hohe Qualität von Bekleidung, denn bereits alltägliche Körperbewegungen stellen Höchstanforderungen an die Naht.

Nähte - durch ihre Qualität kann im Extremfall von ihnen sogar Leben abhängen, wenn beispielsweise Airbag- oder Fallschirmnähte nicht den geforderten hohen Beanspruchungen standhalten.

Seams - can realize new smart functions like electrically conductive or luminously, function as textile sensors or switches.

Seams are essential for all kinds of textile products and it is fantastic how diverse, how colorful, how functional and how wide seams and seam quality can be actively shaped.

Sewing, embroidering, welding, bonding and riveting - these are textile joining technologies. With these, all textile materials - in the widest sense - can be assembled by a textile way today; from fine silk to brittle leather, from ultra-thin films to multilayered composite structures, from flexible non-wovens to elastic knitwear and to high-strength fabrics.

Sewing technology is the oldest and most traditional method and uptil now it is the joining technology number 1 - for clothing as well as for technical applications. Why? There are several convincing arguments, such as the extremely "textile" properties of sewn seams. And there are the huge possibilities offered by sewing and embroidering threads, sewing needles and the available sewing machine technology. Additionally the variety of more than 100 defined seam constructions and more than 60 different sewing stitch types opens up immense design diversity.

Embroidering technology - a special field of sewing - is one of the most flexible textile joining and manufacturing process. It bases on a form-fitting principle. Embroidering offers the unique opportunity to freely diversify the size, direction and position of each stitch between two successive needle penetrations. The modern embroidery machine technology offers the reproducible and automated realization of fashionable as well as technical embroidering applications - an area that is growing rapidly. For example, wires for heating textiles or functional sequin devices for luminous textiles are embroidered.

However, sewing technology has been no longer an all-encompassing requirement in the growing market of innovative

Nähte - durch ihre Funktionalität, beispielsweise durch Chemikalienbeständigkeit oder Dichtigkeit gegenüber Flüssigkeiten und Gasen sind sie essentielle Elemente bei Schutz- und Funktionsprodukten.

Nähte - können ganz neue smarte Funktionen erfüllen, elektrisch leitfähig oder leuchtend sein, als textile Sensoren oder Schalter fungieren.

Nähte sind für alle Arten textiler Produkte essentiell wichtig und es ist phantastisch, wie vielfältig, wie bunt, wie funktional und breitgefächert Nähte und Nahtqualität aktiv gestaltet werden können.

Nähen, Sticken, Schweißen, Kleben und Nieten – das sind textile Fügeverfahren. Mit diesen lassen sich heute alle - im weitesten Sinne - textilen Materialien textil verbinden; von feinsten Seide bis hin zum spröden Leder, von hauchdünnen Folien bis hin zu mehrlagigen Verbundstrukturen, von flexiblen Vliesstoffen über elastische Maschenwaren bis hin zu hochfesten Geweben.

Die Nähtechnik ist die älteste und traditionellste Methode und bis heute Füge- und Herstelltechnologie Nummer 1 - sowohl für Bekleidung als auch für technische Applikationen. Warum? Es gibt mehrere überzeugende Argumente, wie die äußerst „textilen“ Nahteigenschaften und die enormen Möglichkeiten seitens der Näh- und Stickfäden, Nähmaschinen sowie der verfügbaren Nähmaschinenteknik. Dazu eröffnet die Vielfalt an über einhundert definierten Nahtarten und mehr als 60 verschiedenen Nähstichtypen immense Gestaltungsvielfalt.

Sticken, als besonderer Bereich der Nähtechnik, ist eines der flexibelsten textilen Füge- und Herstellverfahren, das auf einem formschlüssigen Bindungsprinzip basiert. Das Sticken bietet die einzigartige Möglichkeit, Größe, Richtung und Position jedes einzelnen Stiches zwischen zwei aufeinander folgenden Nadeleinstichpunkten frei zu variieren. Die moderne Maschinensticktechnologie ermöglicht das

textiles. Especially for technical textiles the needle can damage the textile fabric during puncture and perforation. So textile properties can be negatively changed and functionalities can be reduced. For these applications cohesive techniques like welding and bonding are now in great demand.

During textile welding processes the thermoplastic materials are plastified by hot air, contact heat, high frequency-, ultrasonic- or laser technology and joined. The water-, gas- and air-proof as well as sterile seams, used e.g. for surgical textiles, are important advantages of welding. In addition, a similar mechanical / physical behavior of welded seams compared to the textile fabric can be realized. By unconventional approach and experimentation, for example with the universal ultrasonic welding technique in combination with exceptional materials, the process can be used for separating, joining as well as surface designing. Some interesting results are presented in student projects.

My conclusion: Each joining process has its own special strengths and benefits. Therefore, the clever combination of the different joining technologies is both – task and solution - to realize a functional, decorative, creative or functional product. In addition the important basis is the qualitative investigation, evaluation and optimization of the various joining processes and their results. This includes also the associated machine technology and their relevant process parameters.

reproduzierbare, automatisierte Realisieren modischer als auch technischer Stickereien – ein Bereich, der rasant wächst. Beispielsweise können Drähte für Heizztextilien oder funktionale Pailletten (FSDs) zur Herstellung effektvoller Leuchtextilien aufgestickt werden.

Doch die Nähtechnik hat auf dem stetig wachsenden Markt innovativer Textilien schon lange keinen Alleinstellungsanspruch mehr. Gerade bei technischen Textilien kann die Nadel durch ihren Einstich und die entstehenden Perforierungen die Oberfläche zerstören, textile Eigenschaften verändern und Funktionalitäten beeinträchtigen. Hier werden verstärkt stoffschlüssige Verfahren wie Schweiß- und Bonding-Technologien nachgefragt.

Beim textilen Schweißen werden die thermoplastischen Materialien durch Heißluft, Kontakthitze, Hochfrequenz-, Ultraschall- oder Lasertechnologie miteinander verbunden. Wichtige Vorteile des Schweißens sind die realisierbaren wasser- und gasdichten sowie sterilen Nähte, eingesetzt z.B. bei OP-Textilien. Zudem kann mit Schweißnähten ein ähnliches mechanisch/physikalisches Verhalten wie in der verarbeiteten Fläche realisiert werden. Durch unkonventionelles Herangehen und Experimentieren, beispielsweise mit der universellen Ultraschallschweißtechnik in Kombination mit spannenden Materialien, lässt sich das Verfahren zum Trennen, Fügen sowie zur Oberflächengestaltung einsetzen und belegt dessen Kreativität – wie Ergebnisse verschiedener studentischen Arbeiten zeigen.

Mein Fazit: Jedes Fügeverfahren hat seine ganz besonderen Stärken und somit liegen Aufgabe als auch Lösung in der geschickten Kombination der verschiedenen Techniken, um ein zweckmäßiges, dekoratives, kreatives oder funktionales Produkt zu realisieren. Die qualitative Untersuchung, Bewertung und Optimierung der verschiedenen Fügeverfahren und ihrer Ergebnisse einschließlich der zugehörigen Maschinenteknik und die Einbeziehung verfahrensrelevanter Parameter sind dazu unabdingbar.

The Conditional Factors for the Creative Process

"DESIGN THEORY AND PRACTICE OF THE FOUNDATION" – THE SPECIAL SUBJECT: CREATIVITY TEACHING

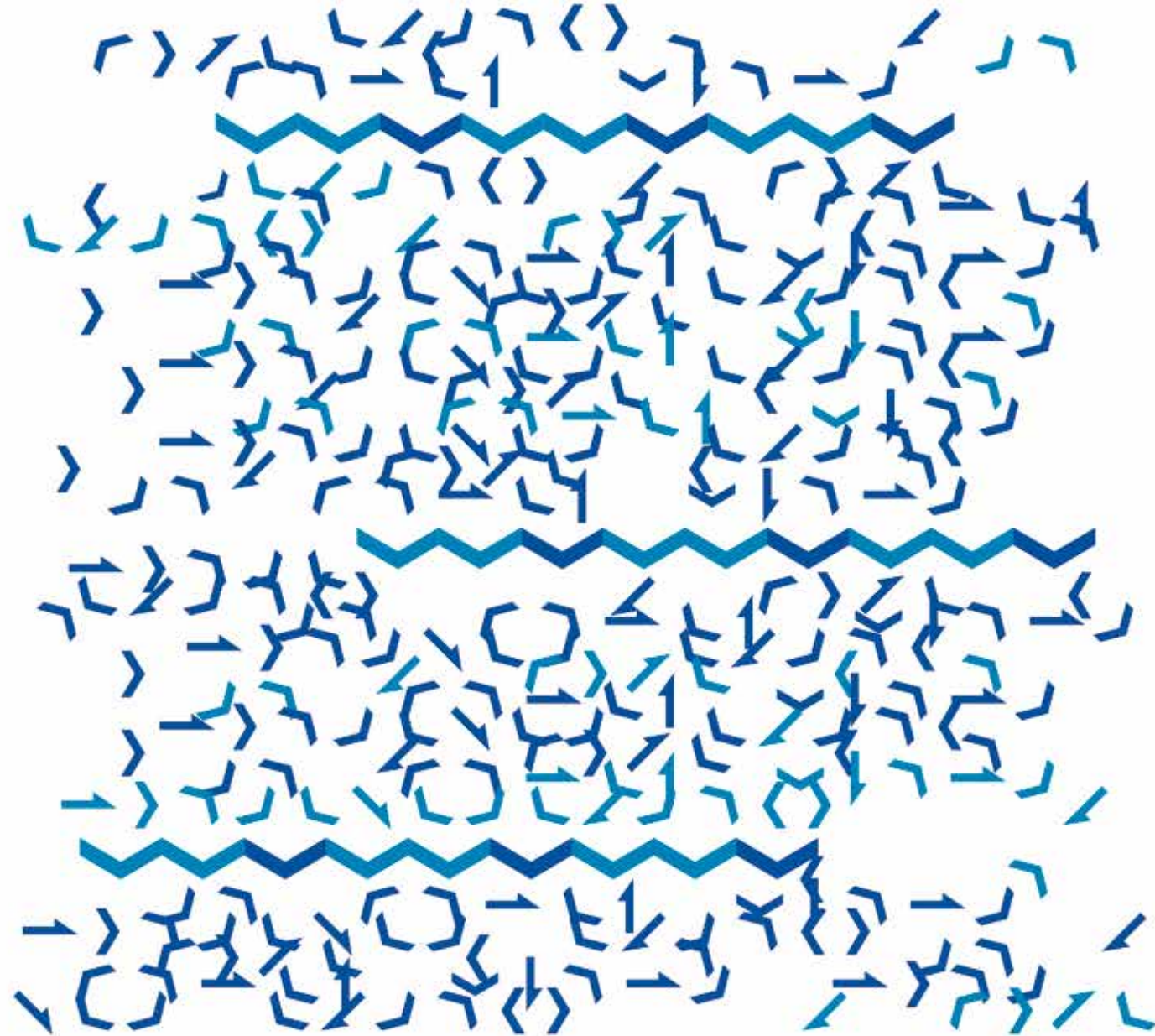
The foundation of the design theory are found in all Design and Art Schools around the globe. They have similar titles and syllabus. They teach history, perspective, form, color and material. At the same time they teach you the characteristics of the design process so it becomes a habit. This second part of the syllabus is not always mentioned in the foundation of the basics.

The Subject Creativity Teaching offers room to explore combined with creative technics and practice to achieve the best results oft the creativity development. The specifics of the creative work are in contrast to sience and transfer of knwdolege. Not only can Creative work to be studied, but also be experienced. Quite often hidden behavior attitudes are all of a sudden exposed. They can then be treated. Otherwise put, creative processes are character building.

„GESTALTUNGSLEHRE, THEORIE UND PRAXIS DER GRUNDLAGEN“ – DAS BESONDERE FACH: DIE KREATIVITÄTSLEHRE

Die Grundlagen der Gestaltungslehre sind an allen Design- und Kunsthochschulen rund um den Globus zu finden und weisen sehr ähnliche Namen und auch Inhalte auf. Unser kulturhistorisches Erbe, die perspektivische Darstellung soll erlernt werden und der Umgang mit Farbe, Form und Material. Gleichzeitig sollen die Besonderheiten der gestalterischen Prozesse darüber zur Gewohnheit werden. Dieser zweite, selten benannte Lehrplan ist Thema der Kreativitätslehre, die in dieser Form selten in der Grundlagenvermittlung zu finden ist.

Das Fach Kreativitätslehre bietet den Raum die Erträge der Kreativitätsforschung kennen zu lernen und darüber hinaus mit praktischen Übungen und Kreativitätstechniken zu verbinden. Die Spezifika kreativen Arbeitens stehen im Gegensatz zur Wissenschaft und zur Wissensvermittlung. Kreative Arbeit kann nicht nur gewusst sondern muss erfahren werden. Unbemerkte Verhaltensdispositionen werden darüber deutlich und können somit bewußt gehandhabt und auch verändert werden. Oder anders formuliert, kreative Prozesse wirken persönlichkeitsbildend.



During the teaching sessions they combine and practice the science analytic distance as well as the direct emotional and subconscious work of the creative process. The target is to get to know the structure of the science work, as well as the management process and then to combine and optimize it with the characteristics of the design process.

The goal is to achieve not only the design of an object or professional competence but also to overtake the tasks of responsibility of the society.

Es werden sowohl die wissenschaftlich analytische Distanz als auch die direkte emotional und unterbewußt gekoppelte Arbeit des kreativen Prozesses während der Lehrveranstaltung geübt und kombiniert. Ziel ist es sowohl die Strukturen des wissenschaftlichen Arbeitens als auch die des Prozeß - Managements nicht nur zu kennen sondern mit den Gegebenheiten des Designprozesses optimal verknüpfen zu können.

Ein konzeptuelles Denken zu erreichen, das nicht nur die Gestaltung des eigenen Gebrauchsgegenstandes berücksichtigt, nicht nur fachliche oder technologische Kompetenzen, sondern auch übergreifende Fragestellungen gesellschaftlicher Verantwortung beinhaltet, ist das Ziel.



PROJECT SUMMARY

PROJEKTE DER STUDIERENDEN

1 TEXTILE TECHNIQUES

DANDELION IN THE WIND • LAURA FRIESE

WEAVING IN PROGRESS • TAYGETE YALI WETZEL

3D MODELING • NORA BRINKERT

SEARCHING THE NEW IS TO UNDERSTAND THE OLD WAY •
JULIA NIKOLEISEN

WOVEN KNITS • PRISCA ALEXANDRA HOLDERIED

SUBLIMATION PRINTING • VLADA VEGILANSKI

2 ART OF TEXTILE

ULTRAMARINE BLUE • ÜMMÜHAN ASKAR

CONNECTED • INKEN BLANCA POST

PITCH AND SULPHUR • JENNIFER VON SCOTTI

PATINA OF LIFE • SOPHIA WISKOTT

TRAP • LENA SADOWSKI

HUMAN BODY 2.0 • THERESA SCHOLL

DUALITY • VERENA WINKELMANN

3 NEW INTERIOR SOLUTIONS

TEXTILE SOUNDABSORBERS •
MAYA JOËLLE EUROPA BREUER

DIGITAL WALLPAPER • IRINA RUDER

MODERN NOSTALGIA • EVGENIA GULIEV

AEQUOREA VICTORIA SMART • THERESA SCHOLL

4 TEXTILE INDUSTRY 4.0

DIE WELT IST PHILAMBDA • VERENA WINKELMANN

EVOLVING SHAPES • TOBIAS WEICKART

VIRTUAL KNITWEAR • ANN-KATHRIN DICK

MUSIC-SOUND-STITCH • SARAH GROBE

5 SUSTAINABLE DESIGN CONCEPTS

FROM WASTE TO WEAR • HELENA ROTTE

FINE FEATHERS MAKE FINE BIRDS • LAURA D. E. BRÜGGEN

KROK • ZAHRA DERAKHSHAN

X-RAY BACKPACK – THE UPCYCLING-DESIGN •
KATHARINA FREYMUTH

SPROUT • LIESBETH BAUMBERGER

BEE ATTENTIVE BECOMES BEEMW • ELISE ESSER

TREENITY • LENA EICHE

MANAGING THE FASHION FUTURE • FRANZISKA VAN DINTHER

GOING VEGAN IN THE TEXTILE INDUSTRY •
HELENA WEHNER

ECOPOLIS • THERESA BRINKMANN

SNUCKEN DOENS • JANINA NAOMI KROLZIK

INEMURI • MICHAEL WOLF

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I-KIDS • STEFANIE BREUER

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PIXEL VS. BRUSHSTROKE • NADIN DETERING

DEFINING THE DIGITAL NATIVE INFLUENCERS •
ALEKSANDRA BOMBINA

MOBILE.IN.KNITWEAR. • KRISTINA REM

SMART ARAN - SMART TEXTILE • LARA KISSER

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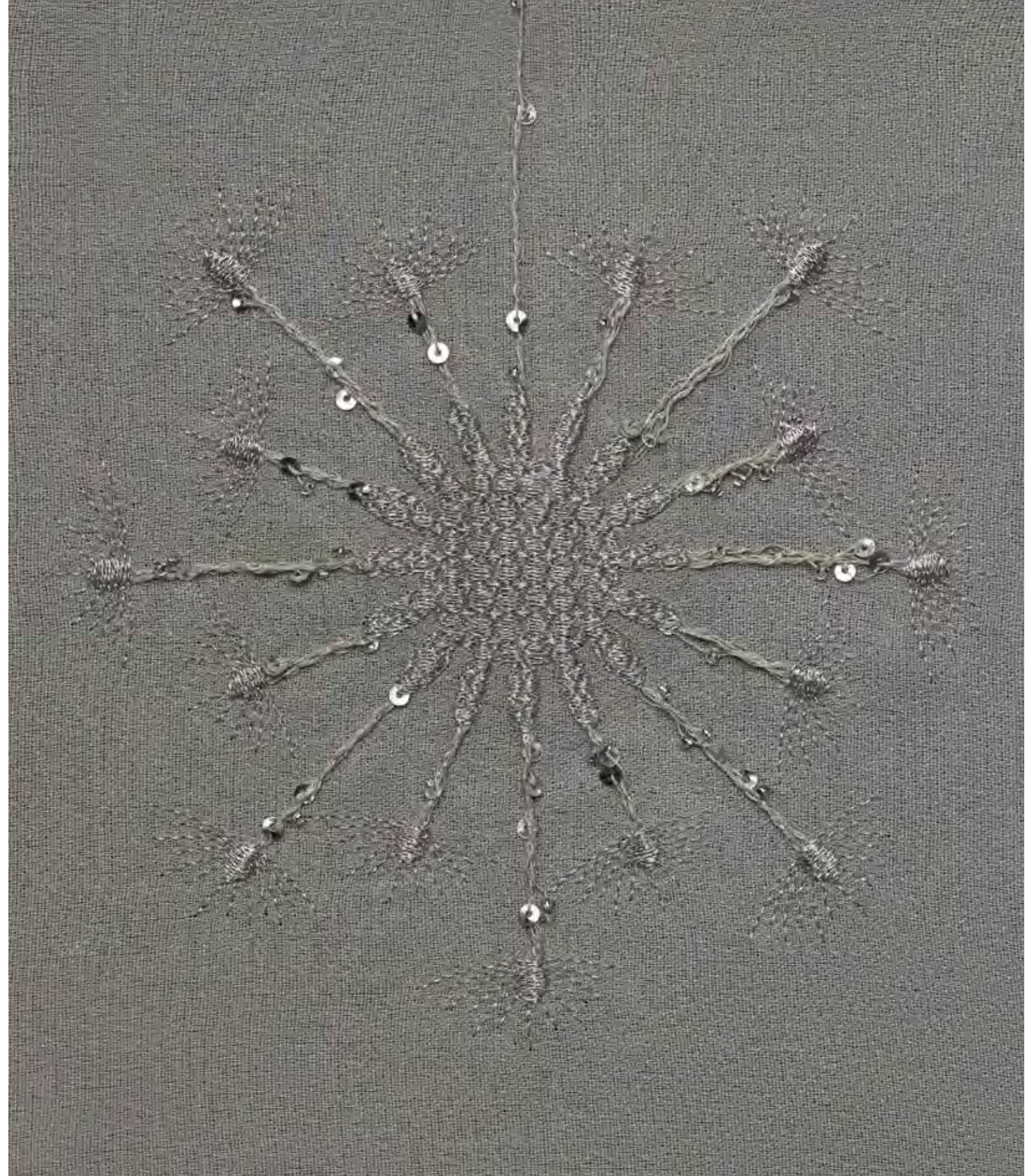
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DANDELION IN THE WIND

DEVELOPMENT AND REALISATION OF A HAUTE COUTURE DRESS USING MULTIFUNCTIONAL EMBROIDERY MACHINE TECHNOLOGY

'DANDELION IN THE WIND' is a tailor-made haute couture dress embellished with exquisite embroidery that was designed during the master thesis. The robe has been created based on the definition of characteristic features of haute couture embroidery and the consideration of modern embroidery machine technology. It embodies flowing classiness with feminine charisma and is decorated with 60 dandelions in different sizes and shapes. Only a combination of high-quality material was processed: Crêpe Drap (fabric), metallic embroidery thread and fancy yarn with glass beads and sparkling sequins.

Usually the robes of the couturiers are embroidered by hand. However, this master thesis has shown that an industrial embroidery machine - a multifunctional multi-head embroidery machine from ZSK Stickmaschinen GmbH - is also suitable for decorating haute couture creations. The fabric was adorned using the standard embroidery as well as a special embroidery technology called 'Tailored Fiber Placement' to fix the fancy yarn with a zigzag stitch. This technique is generally used in the field of technical embroidery to fix materials that cannot be embroidered directly - e.g. carbon fibres or wires. A total of 212.347 stitches were used to apply 60 individual dandelions to the fabric. This consumed approximately 35 m of fancy yarn and over 1.000 m of metallic embroidery thread.



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WEAVING IN PROGRESS

DESSINATUR – SHAFT WOVEN FABRIC DESIGN

This collection of woven samples is based on the working process rather than an aesthetic vision.

It was highly influenced by a previous study-abroad year in Seoul. The friction between ways of working picked up in Korea combined with life in Germany was a continuous source for inspiration. Dealing with complexity of identity in real life was transferred to woven pieces in multi-layer constructions that combined a variety of different densities, colors and interlacements.

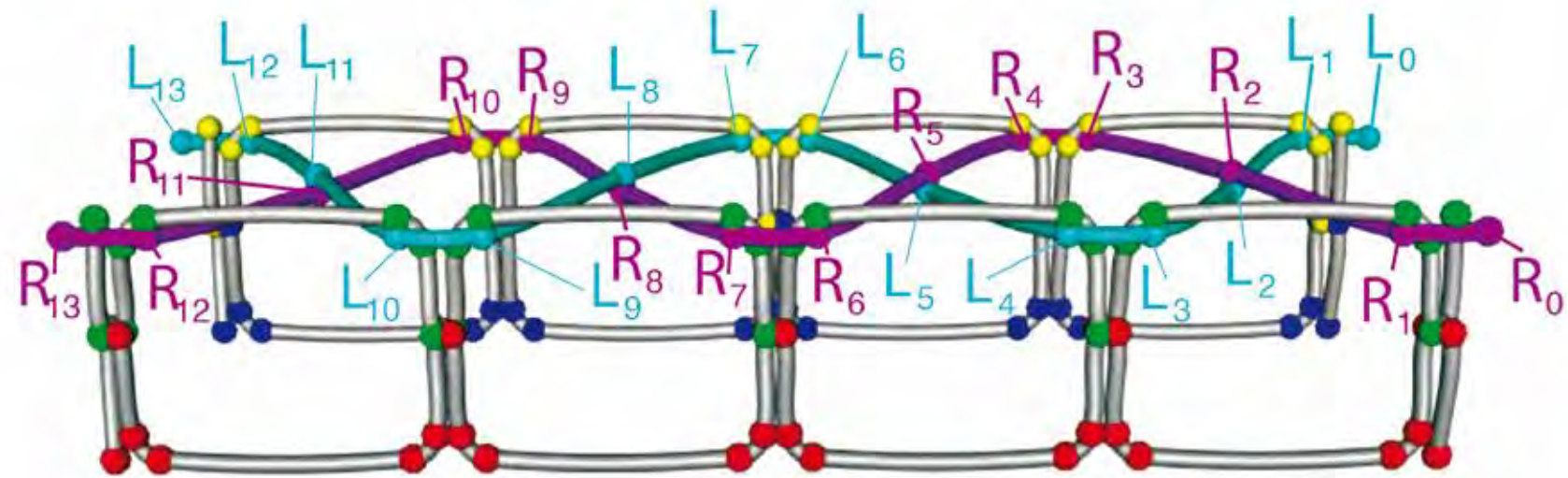
Yet, all those different qualities are combined in one cloth and their interplay gives appeal to the textile surface.

Designing a sample warp within the course was a great way of using industrial equipment and processes to produce a variety of different weaves. Exploring the boundaries within those warps and machines was an integral part of the process. Getting to know the arrangements that well that the possibilities of designing became endless despite the technical limitations.

Making this collection turned out to be a very personal interaction with weaving, but its outcome offers a variety of possible interpretations.

The collection is colorful, modern and complex in weave construction.





3D MODELING

REALISTIC GEOMETRIC PRESENTATION OF SEWING STITCHES USING TEXGEN

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Two remarkable topics are cleverly connected in Nora Brinkert's Bachelor thesis.

The first part of the project involved "Experimental evaluation of the functionality of a new decorative sewing machine ...". The special and unique feature of this new, prototype sewing machine is a programmable module for the movement of two cover thread guides. This permits the controlled and diverse sewing and joining of several cover threads in continuous seams based on stitch type 315 (2 needle double lockstitch with cover threads). Therefore, completely new stitch variations, which are still defined in no standard, can be realized. In addition, it is possible to handle very sensitive thread, e.g. conductive threads, with a gentle treatment and without mechanical stresses in a continuous seam. Nora Brinkert has investigated the new and unknown features and functions of this machine. She determined the relations between sewing parameters and seam quality with near countless tests.

The second part of the thesis explored: "... 3D modeling of stitch variations using software TexGen." Therefore, she researched possibilities for the intelligent and variable visualization of the new stitches. Nora Brinkert has tested the open source software TexGen which is normally used for realistic geometric presentation of textiles. By modifying the source code into mathematic terms based on vectors, she used successfully this software for a new application – the 3D modeling of sewing stitches.



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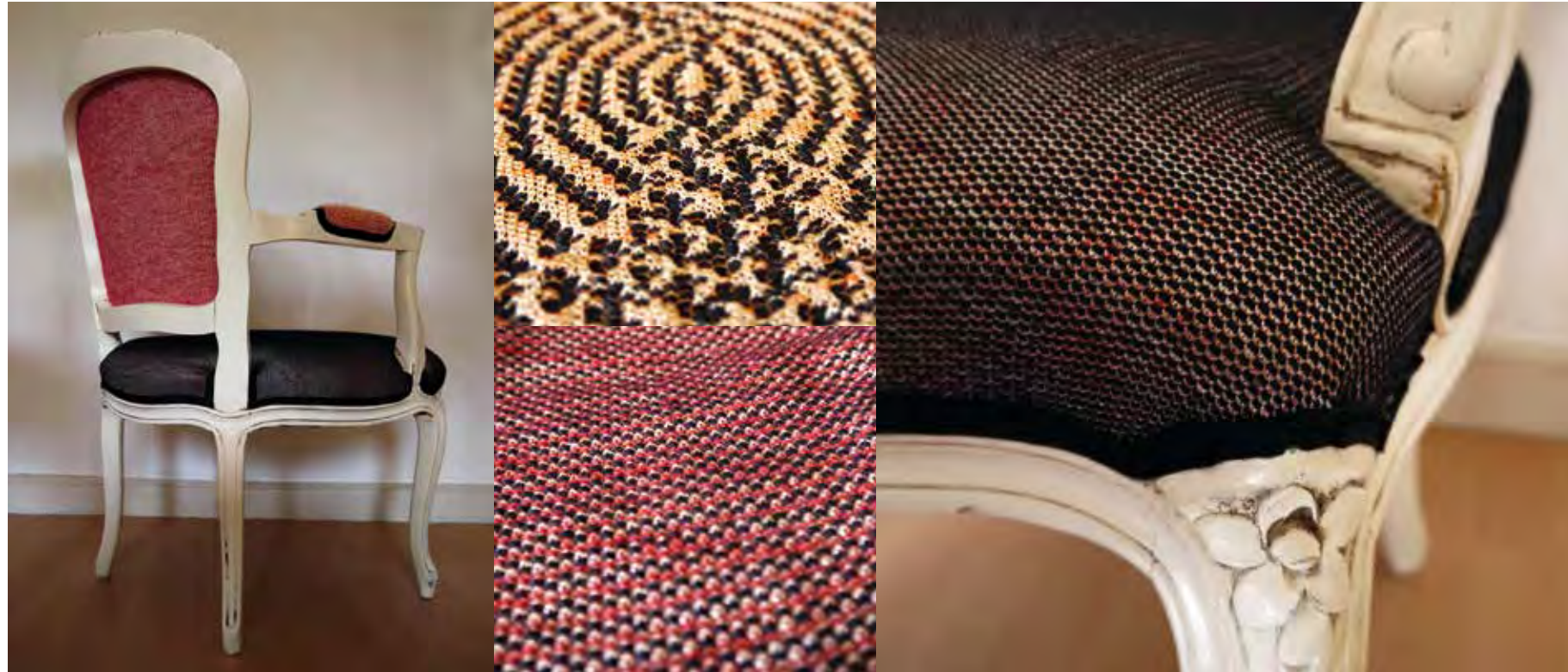
SEARCHING THE NEW IS TO UNDERSTAND THE OLD WAY

COLORS AND COLORING SKILLS IN CREATIVE USE FOR
RESOURCE PROTECTION

The research work titled “Searching the new is to understand the old way - colors and coloring skills in creative use for resource protection” deals with historical themes such as Japanese culture, the natural dye Indigo, the traditional techniques of Shibori and innovative, new thought models, which are focused on sustainability and upcycling. The innovation in the field of Shibori techniques forms the main theme of this research. This project investigates how patterns of Shibori and coloring with indigo can be influenced on already made clothes. For this purpose, the inspiration theme is determined after a detailed trend research to create a design concept and realize the collection SHIBORAI.

The inspiration to the SHIBORAI collection is based on the Japanese culture, the myth of the mysterious Samurai warriors as well as on the deconstructivism of Japanese fashion designers. Multi-part pattern outfits are made of upcycled material, manually and individually processed with innovative Shibori methods and dyed with indigo. These collection concept conserves resources by upcycling and reduces the impact of chemicals using natural dyes as well as controlled production and shows an originally Fashion-Design.





WOVEN KNITS

CREATION OF AN INTERIOR COLLECTION BY
USING INNOVATIVE DESIGN TECHNIQUES

PRISCA ALEXANDRA HOLDERIED
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Interior design is dominated by woven fabrics, but there is a new technical trend coming up. By inserting laid-in yarns in knitted fabrics, it is possible to create knitted materials with properties similar to woven materials regarding their optics and haptics. The aim of this bachelor thesis was the development of a fabric collection by using laid-in yarns in knitted fabrics with a new technology, suitable for interior applications. Therefore, this collection is creating an innovative transition from woven to knitted interior textiles.

The thesis starts introducing the interior design history focused on textiles, mainly knitted fabrics. The author describes the laid-in technique and explains why this technique is on an upswing. The possibilities of industrial production as well as sustainable aspects, including materials and dyeing methods, are being discussed. The material concept combines biodegradable polyamide, originally used to strengthen tires, with natural yarns made of wool to realize textiles with new optics and functional properties.

The result is an experimental collection with a wide range of constructions, shapes and designs. The developed patterns show a great creative variety, easy to combine with each other in a modular concept.

The statement piece of the collection is an upholstered armchair. It shows that by using laid-in yarns, it is possible to create knitted fabrics that can fulfil the requirements for interior textiles.



SUBLIMATION PRINTING

IN EXPERIMENTAL APPLICATION

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The world of textile design is influenced and changed by digital technologies. The project "Sublimation printing in experimental application" creates a link between digital printing techniques and the classic weave art and thus a new level of interior design.

The idea focuses on an industrial realization in future. In cooperation with the textile designer Felix Diener and the company "Ambience Home Textiles" different types of textiles are printed and evaluated.

By the experimental use of the thermo-sublimation printing process, not only new possibilities of design are given, but also methods of revaluation are generated.





ULTRAMARINE BLUE

CONCEPT AND DESIGN OF A WOMEN'S FASHION COLLECTION INSPIRED BY THE ARTISTIC WORKS OF YVES KLEIN

ÜMMÜHAN ASKAR
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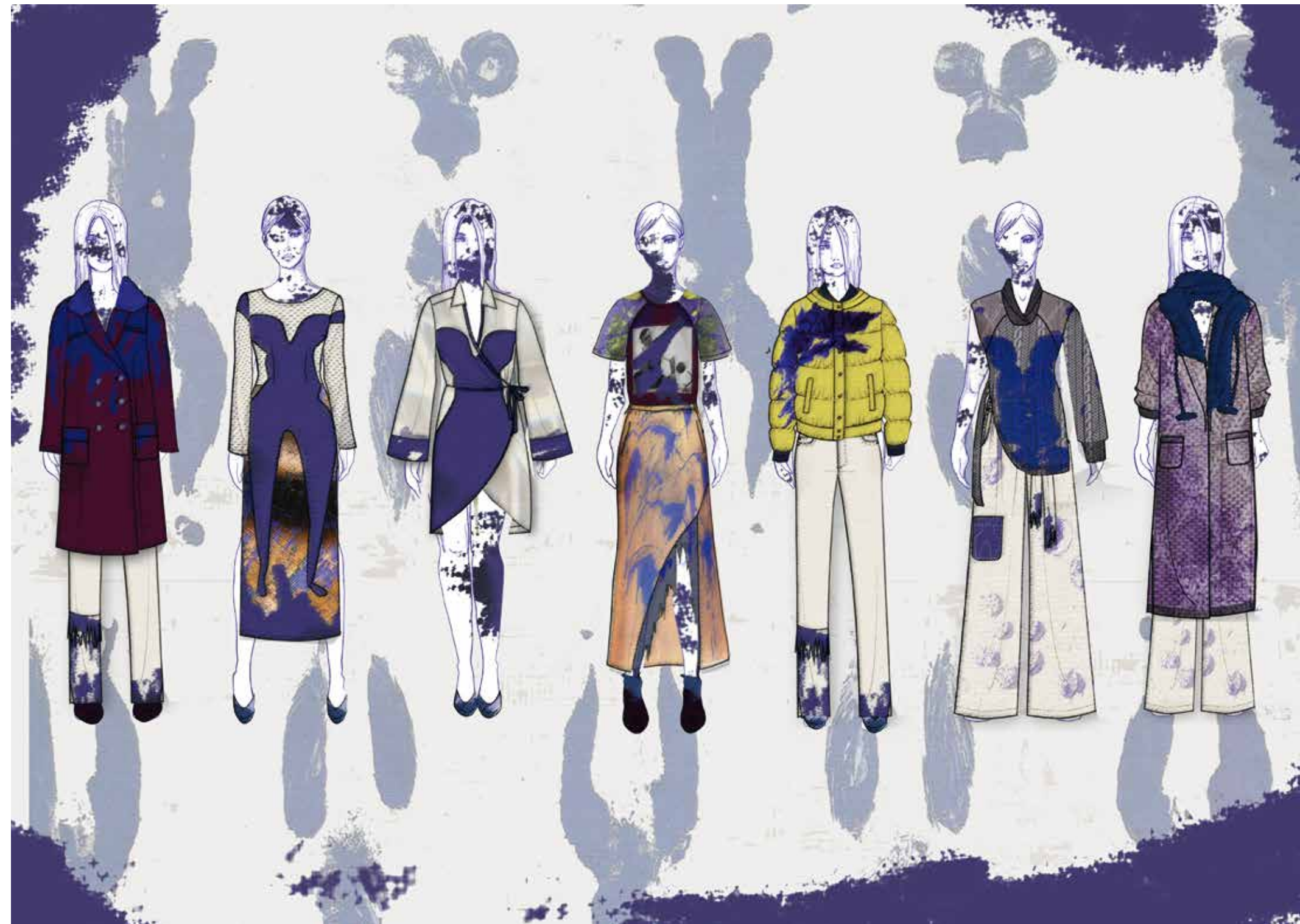
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Colors are an essential part of the visual language and serve as a creative means of expression. The color ultramarine blue has a special value by its radiance. Ultramarine blue has been used as a decorative element, first as a gemstone and finally as a color in art and fashion. The artist Yves Klein devoted a large part of his work to the ultramarine blue color in which the transcendent effect of the blue color comes to expression. Yves Klein became particularly well-known through controversial artifacts by painting female nude models with blue color and rolling them on the canvas as "living brushes". Thus the so-called "anthropometry" works were created. The work of Yves Klein gives important impulses for the design of the present Women's Fashion collection.

The Internet portal WGSN forecasts the ultramarine blue "Lapis blue" as a trend color. These can be found in different volume distributions in the part collections "Lapis Blue", "Anthropometry" and "Monochrome". In addition, in the part collection "Anthropometry", the technique of touching and random coloring is selected for designs.

Ms. Askar has created a number of models for her collection design which are characterized by modernity and portability.





The knit design concept 'Connected' was created for the knit design contest "Feel the Yarn" and exhibited at the international trade fair for textile fibres Pitti Immagine Filati 81 in Florence, Italy. The challenge was to interpret this year's theme Knit Mix and to create and develop a concept resulting into two knitwear outfits. Inspiration for the design concept 'Connected' is the human brain:

We are born as human beings. We are not determined by our outer shell. It does not define us, it is modifiable. Our brains have the same structure, no matter whether we were born male or female. What defines us is our inside. What happens beneath that shell is what differentiates us, makes us individuals. We are shaped by our experiences, environment, attitudes, emotions and thoughts. We must escape from the roles, which are imposed on us based on our outer shell and reveal our inner self. Our true self.

The developed outfits have both sporty characteristics as well as features of a classic knitted sweater and thus combine innovation and tradition. Tight mesh structures in the form of synapses, which are highlighted with coloured accents applied through needle punching, form a contrast to voluminous organic structures, knitted out of thick, cozy Alpaca blends, symbolizing the outer shell of the brain. The knitted bands not only meld the two outfits into one unit, but also symbolize an exchange of ideas between the two brain hemispheres as well as between the two genders.

CONNECTED

MIX OF YARNS AND TEXTURES, VOLUMES AND DESIGN

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PITCH AND SULPHUR

DUAL – CONTRAST OR FUSION? CONTRAST AND FUSION!

These knitted outfits were developed for the design competition “Feel the Yarn” at the yarn fair “Pitti Filati” in Florence in July 2015. The yarns were sponsored by the Italian yarn supplier TOSCANO.

The idea of the concept PITCH AND SULPHUR is to connect contrast and fusion coincidentally. Heavy materials meet effortless shapes, big volumes appear in combination with transparency. Details like layering effects are combined with bulky paddings, bold cable stitches and pleats.

The shades of black, white and grey are interrupted by orange accents.

Contrast and fusion!





For the design competition "Feel the Yarn" two outfits were manufactured in the workshops of the Hochschule Niederrhein and exhibited at the yarn fair "Pitti Filati" in Florence in July 2016. The yarns were sponsored by the Italian manufacturer "Manifattura Igea S.P.A.". The theme "Knitting in Time" inspired outfits showing the aging of wood and metal as knitted structures.

PATINA OF LIFE

KNITTED OUTFITS FOR THE COMPETITION
"FEEL THE YARN 2016"

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Patina of Life
Wood and metal
going hand in hand
down the path of life and time.
Growing old together,
losing their strength and shine,
leaving a life of work
with a tender goodbye.

My goal was to transfer the visual appearance of traditional materials, characterized by their irregular colour and surface as well as the development of a distinctive patina and signs of wear, with exciting modern yarns to delicate knitted surfaces. With embellishments of raw materials the knitted structure contrasts with the solidity of outdoor constructions, not only changing the visual appearance, but developing surprising hand feels.



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TRAP

CONCEPT, DESIGN AND REALIZATION OF A WOMEN'S FASHION COLLECTION INSPIRED BY SURREALISM

This Bachelor thesis deals with the theme of Surrealism as a source of inspiration for the design of a clothing collection. The aim is to show how art and fashion influence each other. As a direct inspiration serve surreal, architectural works of art developed by contemporary artists using computer-assisted image processing. The focus of the TRAP collection is surreal stairs, which visualize a steady ascent and descent.

In the dialogue between artistic, craft and industrial garment manufacturing, two part collections were conceived. The experimental part of the collection is called TRAP COUTURE and is accompanied by exemplary realizations.

The commercial line is designed for a fashionable, determined customer, who is always anxious to reach the top step of the staircase both professionally and privately.



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HUMAN BODY 2.0

KNIT MIX FOR DESIGN CONTEST "FEEL THE YARN 2017"

The design of the outfits is inspired by 'transhumanism' and 'human enhancement'. Both deal with the idea to redesign and optimize a human being by using different substances and technologies – resulting in the 'Cyborg', the complete merger of human being and machine. This is the chance for audacity – the chance for a fair world that allows diverse life plans independent of physicality. Terms like generation, gender, or race melt. Opening to subversive solutions, the human being can constantly redefine 'itself' through technical updates.

Following these ideas, the outfits should be understood as unexpected voluminous but genuine fashion bodies that are not subject to any gender-specific codes but rather its materiality; a materiality being determined by the high-contrast mixture of yarns and by knitted pattern as elementary components of the knit design.

Technical details in the fashion bodies allow the person wearing it to obtain extended sensory abilities facilitating the interaction with the surrounding in an innovative manner.

The knit design concept 'human body 2.0' was created for the knit design contest 'Feel the Yarn' directed by the CPF (Consorzio Promozione Filati) and Pitti Immagine. The challenge was to create two knitwear outfits in line with the topic 'knit mix'. The design was presented at the Pitti Filati fair in Florence in June 2017. The yarn was sponsored by Manifattura Sesia s.r.l..



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DUALITY

CONTRAST OR FUSION

Black and white, tough and cosy, stiff and soft - inspired by the world of contrasts, the knit design concept 'DUALITY' creates new innovative materials. The combination of very light, soft layers and stiff, shell-like materials with crushed coatings and 3D foam print composes a new feeling for surfaces and knit characteristics.

In this context break open structures and organic stone formations generate the impulse for the refinement concept.

To outline the principle of duality in design language the colour concept mirrors the contrasting world. Acting as a couple, one outfit is black whereas the second one comprises different shades of white.

The knit design concept 'DUALITY' was created for the knit design contest "Feel the Yarn" in course of international trade fair for textile fibres Pitti Immagine Filati. The challenge was to develop a creative design concept on the topic 'DUAL' and to subsequently create two knitwear outfits which represent this concept. As explained Verena Winkelmann decided to create one black and one white outfit and focused on experimenting with different surfaces. Accordingly, she used different print and application techniques to design a unique surface optic.

Winkelmann's work, which was generously sponsored with yarn by the Italian based yarn company Pinori, came off as winner of a competition in 2015 judged by an expert jury of the textile industry.





TEXTILE SOUNDABSORBERS

DEVELOPMENT AND REALIZATION OF DECORATIVE AND FUNCTIONAL SPACERFABRIC WALL PANELS USING THE ULTRASONIC WELDING- TECHNIQUE

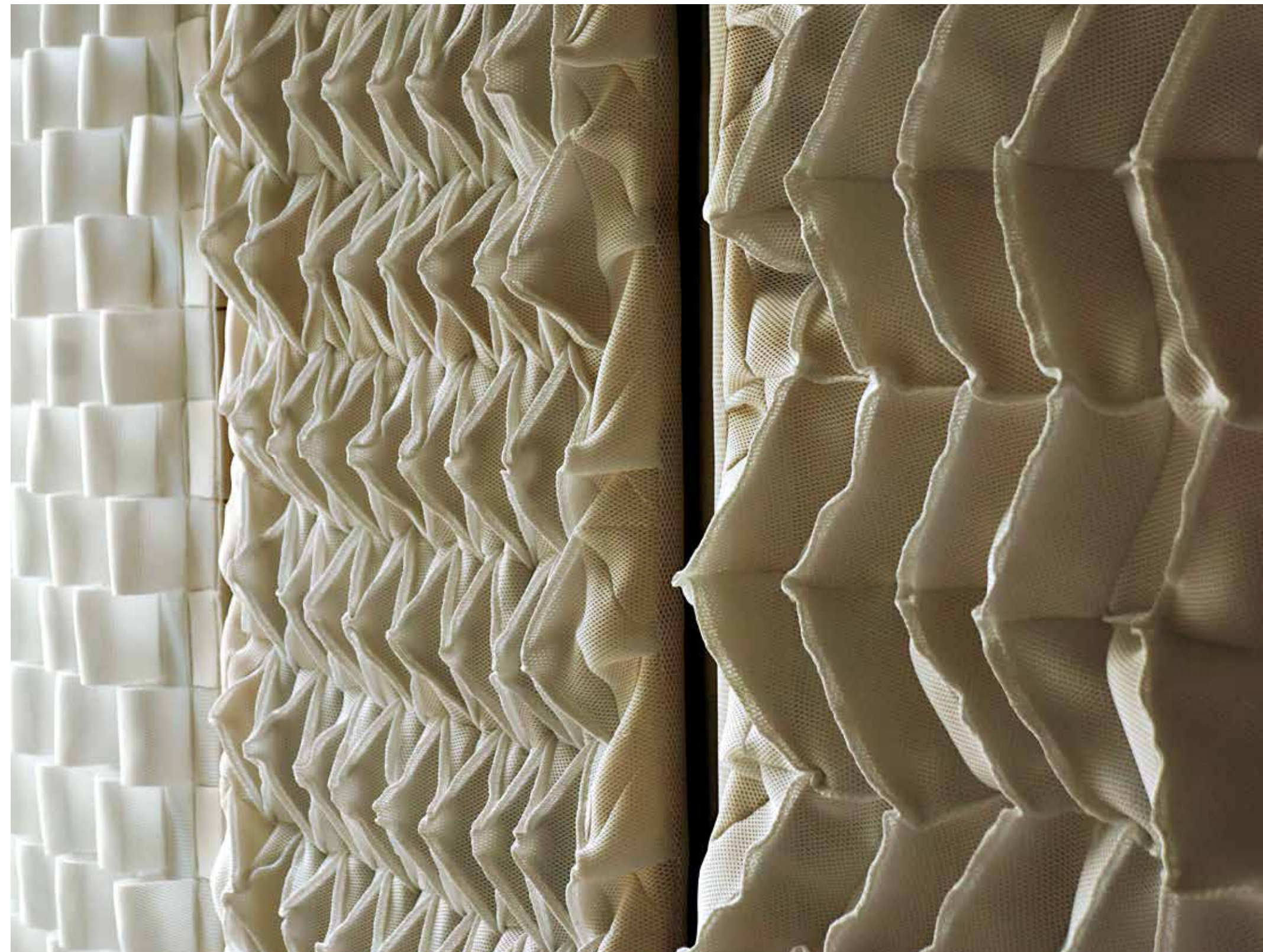
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Telephone calls, keyboard typing, printer and copy noises are just some of the common sounds of an office. Due to large open office structures that tend to be the norm nowadays, the sound level is increased and disturbs the concentration of the workers, which leads to headache and discomfort. To avoid and improve the room acoustics so called sound absorbers can be used, which are mainly functional but less decorative. In her Bachelor thesis, the student Maya Breuer develops sound absorbers, which are both functional and decorative and can be used as wall panels. She explores and combines three components: textile material, surface texture and the joining technique. For the textile material she chooses a spacer fabric. It is an open-pored textile and therefor insures the effect of sound absorption. Based on origami folding she creates new 3D structures to enlarge the surface. The third component is the joining technology: ultrasonic welding. This technology makes it possible to develop durable 3D structures and to create a very interesting look.

The spacer fabric was produced and sponsored by Eschler Textil GmbH. The result is the realization of three wall panels with three different designs called TissOnd, LumOmb and MontVal. The sound absorbers are tested in a certified reverberation room according to DIN EN ISO 354; all structures prove to be functional and improve the room acoustics enormously. This demonstrates that the 3D- shape has a huge impact on the sound-absorbing coefficient in comparison to a flat shape made from the same material.



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DIGITAL WALLPAPER

REPETITIVE WALLPAPER PATTERNS IN DIGITAL PRINTING

Digital printing in the wallpaper segment has been an alternative printing technology to the conventional analogue printing processes of the wallpaper industry for almost twenty years.

Digital wallpapers are most often designed as large scaled photo wallpaper showing an image section. Although the digital wallpaper printing offers a limitless design size, the design possibilities for digital wallpapers are not fully exploited. Conventional design parameters are used particularly in the development of repetitive wallpaper patterns. This corresponds to the limits of the analogue rotary printing. New solutions for digital wallpaper pattern designs can be an enlarged design space and a wide range of motif diversity by variance. The character of pattern repeats is intended to be preserved. In comparison it becomes clear that a different and more balanced pattern effect occurs despite the same pattern arrangement and motif selection. Because of the high motif variance the details of the design are not obvious to the viewer at first sight. This leads to a constant process of reconsideration of the design by the recipient and therefore contributes to the durability of a design.

The undesired development of superordinate streakiness can also be avoided in this way. Streakiness is a secondary effect of too small repeat sizes and too few motifs. A different overall effect of the wallpapered surface is also developed. It is not only viewed as a composition of copies but corresponds to the natural origin of patterns according to the universal ordering principle of the animate and inanimate nature. In this case the same pattern elements always appear in their replication in a slight variation and not as a copy.





MODERN NOSTALGIA

TO TRANSFER OLD VALUES OF THE CULTURAL MIND INTO NEW (TEXTILE) DESIGN

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“Imagining the future is a kind of nostalgia.” – John Green

Modern nostalgia shows a new way to find new originals to break with familiar conventions. The merger of contrary styles bears the hope of finding a new design language. In these times which is ours, where the people desire the outlasted vintage designs, from which they hope to find an everlasting assurance regarding stylistic confidence, redesign seems to be the only possible way to be creative with those old values. But if you wish to stay above those repetitive patterns, a new path has to be taken. And for this, you have to be as bold as possible to create an over-stimulation through forms, colors and contrasts, which are only disrupted by cliché nostalgia elements. Only combined will those opposite notions show their aesthetics, demonstrating a new approach to synthesis, synergy and sympathy of design.

With respect to Evgenia's knowledge in textile engineering and biology the results are using the focus on nature to design innovative textiles. Being from a bi-cultural background she learned to appreciate the cultural exchange and to use the synergy of those cultures. All those components, passion for science, knowledge about culture and own personality shaped this unique artistic signature, which ensured the success in winning the International Living Design Award by EPSON international in 2016.





AEQUOREA VICTORIA SMART

DIFFERENT POLYAMIDE YARNS IN FUNTIONAL FUSION

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Aequorea victoria smart, a smart textile light object, is inspired by the early oceanography of the 19th century. Also the work of the glassblower family Blaschka, who manufactured lifelike glass figures, based on scientific drawings and living marine animals during that time make an impression.

The hydromedusae aequorea victoria acts as a model for the bionic light object. This species is equipped with bioluminescence by nature. Following the glass figures of the Blaschka family, the smart bionic light object picks up the subtle glow of aequorea victoria.

The object is made out of various knitted goods. The white polyamide yarns all have different colour shades with the combination of slightly transparent, pure-white to milk-white reflecting the different colours of the glass of the figures in an appealing way. The shades of white are combined with a water-blue shade in different luminosities, which picks up the colourfulness of aequorea victoria. Through the integration of LEDs, the object is able to glow in a pulsating way. For controlling the LEDs a freely programmable LilyPad Arduino is used.

For the object's material selection, it was important to use only materials like surplus goods and discarded production from the industry. The sleek filament yarns are 'claimless' which arise during the spinning process, whereas the fringed yarn is the balance of a dye batch. It is possible to deform the man-made fibre polyamide without the use of chemicals but only with thermal energy.



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WILHELM – LORCH STIFTUNG 2017, KATEGORIE DESIGN

VORGESCHLAGEN ZUM SENATSPREIS DER HOCHSCHULE
NIEDERRHEIN 2016

DIE WELT IST PHILAMBDA

DEVELOPMENT OF A HOLISTIC DESIGN CONCEPT AND
COLLECTION FOR THE LIFESTYLE MARKET OF TOMORROW

The master thesis “The world is Philambda” concerns the social and economic process of flexibility in course of the megatrend mobility. Special attention has been paid to a change in consumer behaviour as well as the digital facets consequences for the fashion market.

On the one hand the stationary trading is facing new challenges due to the competition of online services. On the other hand, pure online distributors are facing new challenges because many customers are unwilling to give up on the magic moments of a hands-on shopping experience. The desire of shopping experiences in an aesthetic retail environment has become an important trend. Consumers want to and should be emotionally involved with the products.

Hence, in order to satisfy all consumer needs, online and offline commerce should be merged into Omni-Channel-Systems which can produce an encompassing shopping experience with a wide range of touchpoints.

Based on this analysis, the Omni-Channel concept Philambda combines the aspects of fashion, lifestyle and travelling. In particular, the concept focuses on collection development of a fashion and accessory collection. The concept’s main focus is highly inspired by the characteristics of Iceland, including the rough beauty of its landscape and its remarkable sight as well as its culture and traditions. However, the presented fashion collection is not the only possibility to experience the destination of inspiration. The principle of Omni-Channeling: the brand communicates its vision via all relevant channels and types of media.





EVOLVING SHAPES

GENERATIVE DESIGN IN TEXTILE INDUSTRY
- CREATING UNIQUENESS

TOBIAS WEICKART
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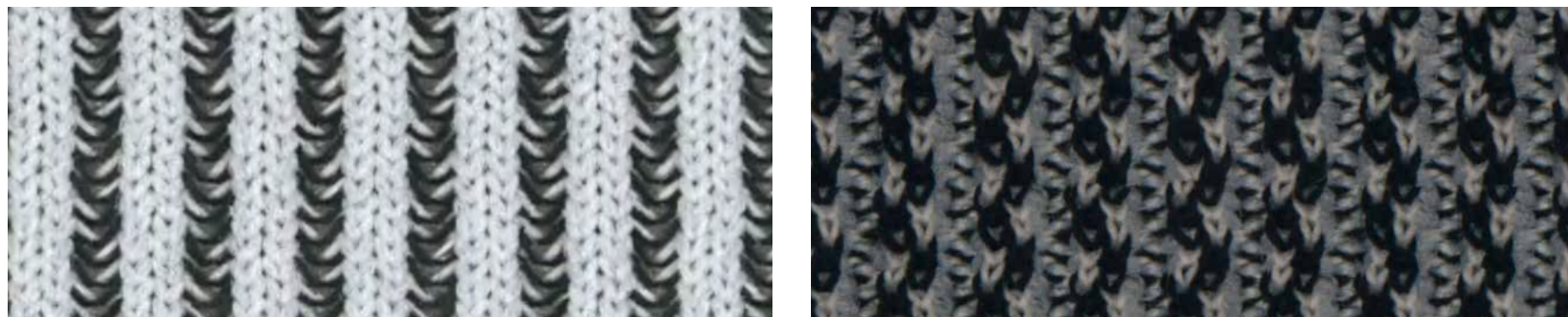
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Generative Design is a modern method for designers and actors of the creative industries of all disciplines. By instrumentalisation of contemporary, digital fabrication techniques and algorithmic design, new products can be created, that are unique, but still realisable in context of industrial fabrication. The computer, which for now was solely a tool for the creative mind, shall become an element of the design-process itself and take on responsible tasks with our assistance.

The approaches to generative design are as widely spread, as the possible range of results is. The study work EVOLVING SHAPES tries to give a theoretical and technical introduction as well as a small overview of the existing international culture of generative design.

With GENERATIVE TILES, the practical piece of work, which aims to create a digitally generated textile, an insight into the generative design-process shall be given. An algorithm, written in the programming-language Processing, produces a pattern of arbitrary dimension. The software introduces a mathematical randomness, which becomes controllable to the user by a Graphic User Interface. Formally referring to the Truchet-Tiling, extensively used in Textile-Design and weaving, a connection to the textile history arises. The boundaries of a traditional Textile-Pattern blur. Even though it seems as if the pattern is repeating, every area of the material is unique. The design was realised via digital-printing to display the vast diversity of randomly generated colour.





VIRTUAL KNITWEAR

EVALUATING NEW APPROACHES TO VISUALISE WEFT KNITS IN 3D DESIGN PROGRAMS

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Digital innovations are becoming more important for fashion manufacturing.

It is 3D Software like VStitcher and CLO3D that are revolutionising the industry, allowing the user to simulate customised 3D garments over virtual mannequins. A design can be portrayed before production resulting in saving of time, money and resources. With the focus on knitwear, simulation becomes more complicated.

The specific properties of knit give the textile a higher stretch and adaptable surface making it harder to visualise digitally.

The goal of this project is to execute and evaluate different approaches to find possible solutions for visualising knit digitally.





MUSIC-SOUND-STITCH

TRANSFER OF MUSIC IN KNITTED TEXTILE DESIGN

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In this master thesis music and its essential characteristics, its emotional statements as well as its physical phenomena are translated into knitwear. Several compositions were transferred into patterns by using different color combinations for emotional interpretations of sound.

By the help of spectrograms, songs were expressed into stitches and digital knitting programs. The results are wearable design hybrids between music and textile, individual products which are able to represent all different kinds of music pieces.

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FROM WASTE TO WEAR

EXPERIMENTAL DEVELOPMENT OF FASHIONABLE OUTFITS
FROM RECYCLED AUTOMOTIVE TEXTILES

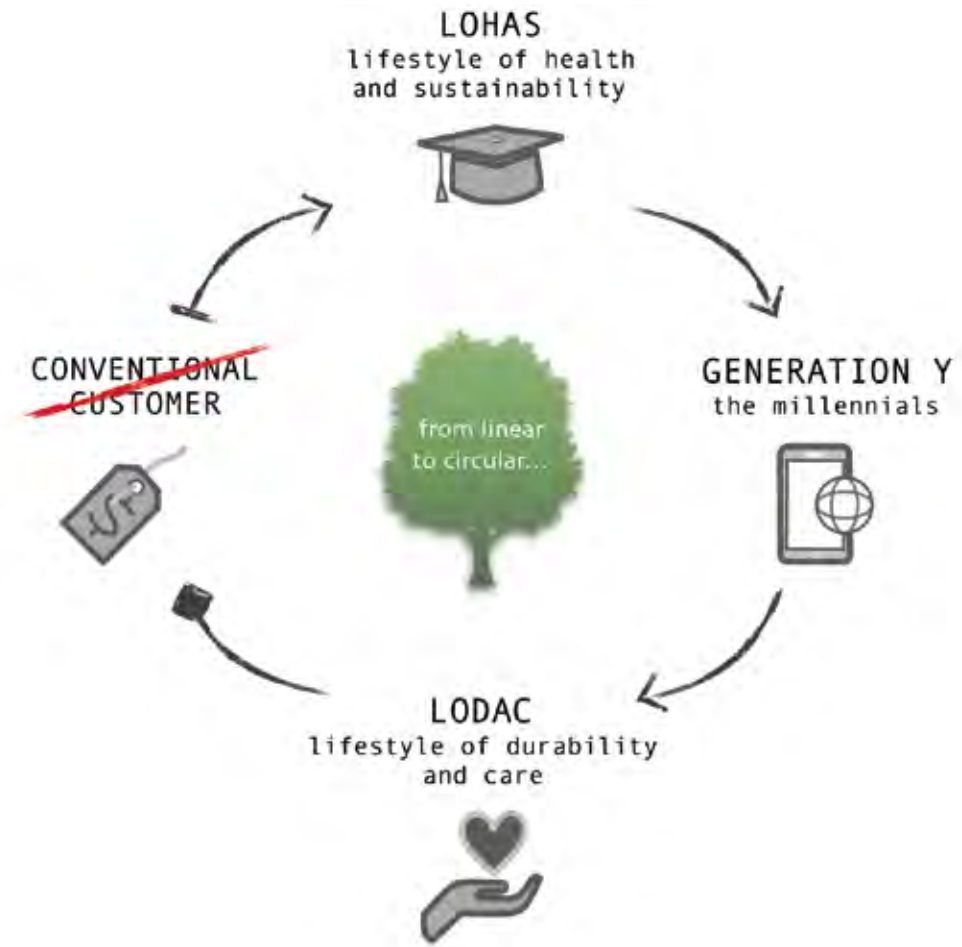
A car seat to wear? Recycled PET bottles as fashionable outfits? Ultrasonic welding as a creative joining technique?

The "RevivedPlastic" collection combines these three tasks, within the framework of a Bachelor Thesis. "TexBlue® by AUNDE" is the company's sustainable and award-winning brand for innovative car seat cover materials. A granulate is made from used PET bottles and industrial waste and is used to produce spundyed yarns. This production process is more sustainable than the conventional dyeing process "yarn dyeing" since no water is consumed and the energy required is much lower.

Helena Rotte discovers the 2-layer composite of a top layer and the laminated fleece. She creates fashionable and wearable outfits using this technical fabric as compound and as separate layers. Additionally, she develops interesting details through the double-face character of the upholstery fabric.

Thanks to the outstanding thermoplastic properties of the 100% recycled PES material, she prefers the ultrasonic welding technology instead of the classic sewing technique. So she uses the unique features of this mechanical-thermal process not only for creative joining and cutting, but also for textile surface design and edge processing. Three fashionable styles are the conveniently results.





FINE FEATHERS MAKE FINE BIRDS

A FASHION MANAGEMENT PERSPECTIVE: HOW CAN SUSTAINABLE BUSINESS MODELS IN THE FASHION INDUSTRY BENEFIT CUSTOMERS' ENVIRONMENTAL AWARENESS?

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There is a sincere trust that now and for the future, sustainable companies will develop further strategies to reach out to their customers and make sustainable fashion a common good. Shifting societal norms inspires for more awareness towards the environment as well as the overall that stands behind the act of wearing and possessing clothes. The investigation into binding requirements for businesses constructs an essential part of the aspired circular economy by 2025. Mandatory regulations are assumed to be more effective in generating invariable improvements of current norms. These guidelines that are implied and developed by governmental authorities including the EU commission (eco-design), create a promising foundation of a path companies have to follow consequently in order to cherish and utilise wisely what natural resources are able to sustain.

Future customers are predicted as more sophisticated than ever before by stepping outside comfort-zones and scrutinising conventional business approaches. With the revitalisation of conscious desires, the lifestyle of durability and care (LODAC) finds its root that clearly yields a subsistence of self-reflective valuation. The supply- and demand vitality created by both – company and customer – can be referred to as a sustainable trade interplay (STI), where both actors support the other and make a circular formation a lucrative instance for present and future generations to enjoy life at its fullest.



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KROK

CONCEPT, DESIGN AND REALIZATION OF A CORK BAG COLLECTION ON THE SUBJECT OF FUNCTIONALISM, KNOWLEDGE CULTURE AND SUSTAINABILITY

Bags are just as mysterious in their content as their bearers. What a woman carries in her bag is perceived as secret and intimate. The bag is not only a simple means of transport, but also an emergency case and a financial center. Equipped with mobile phone, blackberry and laptop, it now becomes a mobile living space. Ms Derakhshan has developed a bag collection as part of her Bachelor thesis, which is based on the following three subject columns:

- FUNCTIONALISM

Following the principle of "form follows function", Ms Derakhshan analyzes the doctor's case, which is equipped with a variety of compartments to allow the placement of instruments and materials.

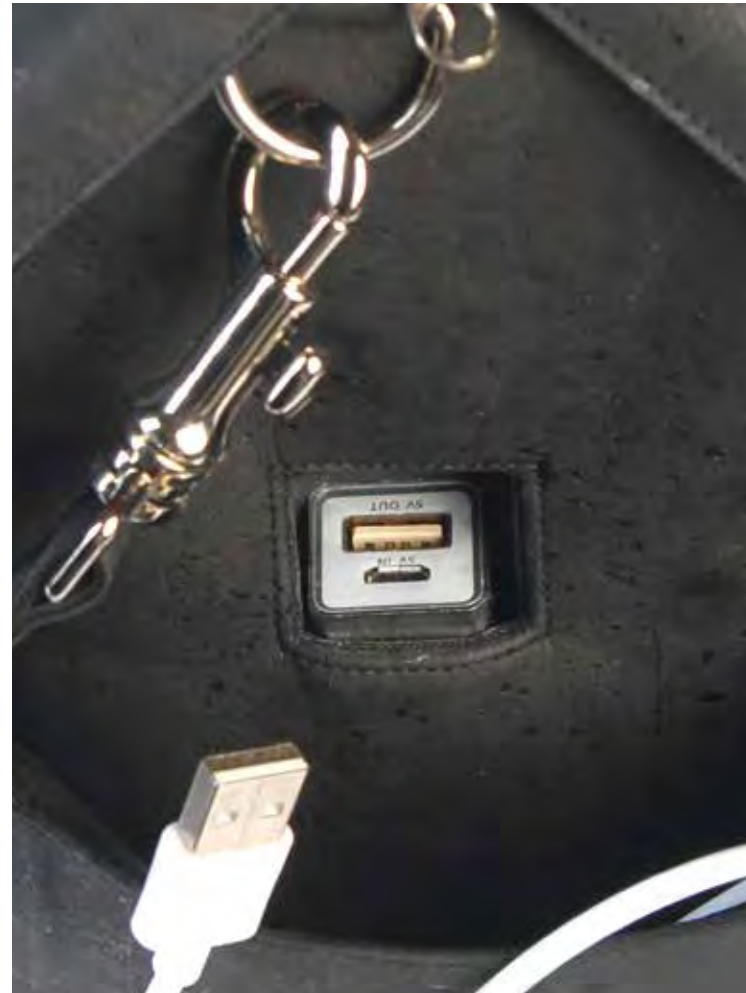
- KNOWLEDGE CULTURE

We live in a society of "knowledge culture", which is pushed forward by the meg-trend of "digitization". Smartphone, tablet and laptop have become an integral part of everyday life.

- SUSTAINABILITY

Cork is considered to be sustainable because it is one hundred per cent usable and a renewable resource for various branches of industry. For many consumers, cork is an alternative to products made from animal or synthetic leather.

Ms Derakhshan has put order into the chaos of the bag with her multifunctional bag collection. The integration of tablet compartments with fold-out function and powerbank station will meet the requirements of a modern woman



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X-RAY BACKPACK – THE UPCYCLING-DESIGN

DEVELOPMENT OF THE TREND ACCESSORY “X-RAY BACKPACK”
MADE OUT OF THE RAW MATERIALS FUR, LEATHER AND RADIO-
GRAPH IN THE VARIANT: 95% RECYCLING + 5% NEW MATERIAL

Behind the “X-RAY BACKPACK” accessory line is the idea of upcycling. Waste products from the fur and leather industry are integrated into the product design of backpack and are thus undergoing a material revaluation. The demand for raw materials is reduced by the use of used materials and natural resources are spared. In our throwaway society, upcycling and redesign have long been established as a countertrend in innovative product design and are preferred by an alternative, educated and critical consumer class.

With the integration of radiographic images, Ms. Freymuth brings a completely new aesthetic into product design. These waste products are not only fed into a new application, they also optically evaluate the design. Backpacks with radiographs of human organs produce an eye deception, which results from the “transparent” view on the internal structure of the body.

With this accessory line, Freymuth succeeded in reinterpreting the topic of redesign and creating a completely new trompe-l'œil effect.





SPROUT

HOMETEXTILES REFLECTING THE LIFECYCLE OF BOTANIC ORGANISMS

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Consciousness and respect for nature is more current than ever due to the rising appreciation of our planet and habitat. The human society develops an ascending awareness of health, body and environment. Likewise, sustainable approaches within the global fashion and textile industry attain more significance.

The trend of "Natural Explorations", which was introduced at January 2017 Heimtextil Textile Fair in Frankfurt, characterize a symbiosis among interior and nature. Mimicry of optics and surface feel of natural materials in textiles are combined with geometrical components to simulate elements of flora and fauna. Inspired by this trend, the homewear collection "Sprout" was created. The processes of growing, thriving along with the decay and disintegration of natural organisms have been transformed into textile surface patterns. The project is aiming to bring nature into daily living space and environment.





BEE ATTENTIVE BECOMES BEEMW

NATURAL DESIGN MEETS TECHNICAL PROGRESS

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AWARD:
WINNER OF EPSON AUTOMOTIVE DESIGN AWARD 2017

This design - originally developed as a textile pattern with honeycomb and bees - is aimed to draw society's attention to the world-wide bee colony collapse and the problems caused by it. Now this message will be spread in the automotive sector realized with a printed coating to get applied on cars. Environmental issues have a growing impact on human livings and we need to face these issues as intense as we can. A combination of nature-inspired design and today's technology signals advanced sustainability.

Matching colors and effects, this pattern emphasizes modern design and additionally conveys the guidelines of environmentally-friendly technologies for preserving and protecting the nature through progress. The honeycombs with their blue colored gradient, emphasized by shades, give the pattern a certain depth. Fine rays of light inside the honeycombs make the design show a unique structure and symbolize the energy of electricity running the car.

An environment-friendly process of printing used by EPSON Germany saves lots of water and is very versatile. Brilliant and powerful colors and a wide range of applications are available. This ecobased modern look underlines the awareness to sustainable systems with advanced design-technology of the BMW i3. Major corporations like Epson GmbH and BMW Group are partnering for innovative solutions for sustainable development. Great thanks for taking aware to mother earth.





TREENITY

NATURE AS DRIVING ENERGY: TO WIN THE COMPETITION AND TO CONNECT PEOPLE

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AWARD:
1ST PRIZE: RUNNING SHIRT AWARD FOR EPSON MEMBERS & FRIENDS

The design "Treenity" was developed for Epson GmbH Germany. "Treenity" involved the three key aspects of the project: That means it combines INNOVATION, SUSTAINABILITY and DESIGN as part of the philosophy of the enterprise. Especially the ground breaking printing process is a sign for innovation. The design is inspired by nature. It should respond the relationship between the athletes and the nature.

The basic print shows a cross section of a tree. It stands for a strong mind and assertiveness. Also, the fast and flexible reaction is important for the runners. These attributes are symbolised by the back part. The dragonfly wing on the back has a dynamic and bionic visual effect. It stands also for the technical knowhow of Epson, so it looks really three-dimensionally. The colour-concept is inspired by the corporate colours of Epson (green; Pantone 361, blue; Pantone 287c). They are supplemented by the contrast colours black and white.

"Treenity" has a different style for male and female shirts and symbolizes the sustainable mind set of the brand, of all members & friends.



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MANAGING THE FASHION FUTURE

SUSTAINABLE MATERIALS AND STRATEGIES AS A FUTURE
MODEL OF THE FASHION INDUSTRY

Various players of the fashion industry are acting according to the priorities of profit and growth while neglecting their provably negative effects on people and planet. The attention for sustainable fashion is rising, but its wider realisation throughout the industry is challenged by the complexity of the textile- and clothing supply chain.

In order to examine the possibilities of a sustainable change only the initial topics of every textile product were approached: Material choice, sourcing options and marketing strategies.

Focussing on the starting point, the material, it is observed that the industry is demanding two fibres mainly: polyester and cotton. Their overconsumption results in negative environmental effects. Thus, their reduced use and an increased use of diverse materials is taken as an approach to reduce these effects.

To support the choice of alternative materials, local sourcing is taken into account as a solution with low CO² emission and enhanced supplier relationships. New marketing strategies such as "See-Now-Buy-Now" provide novel opportunities to be responsive to changed customer behaviour and therefore increase the demand for sustainable fashion.

Finally, the product concept for the brand "FvD" displays a possible marketing mix for a sustainable product. The choice of fish leather and hemp for the "FvD backpack" embodies the use of uncommon, diverse materials that are more sustainable and can even be sourced locally.



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AWARD:

TEXTILPREIS DER RHEINISCHEN TEXTIL- UND
BEKLEIDUNGSINDUSTRIE E.V. 2017

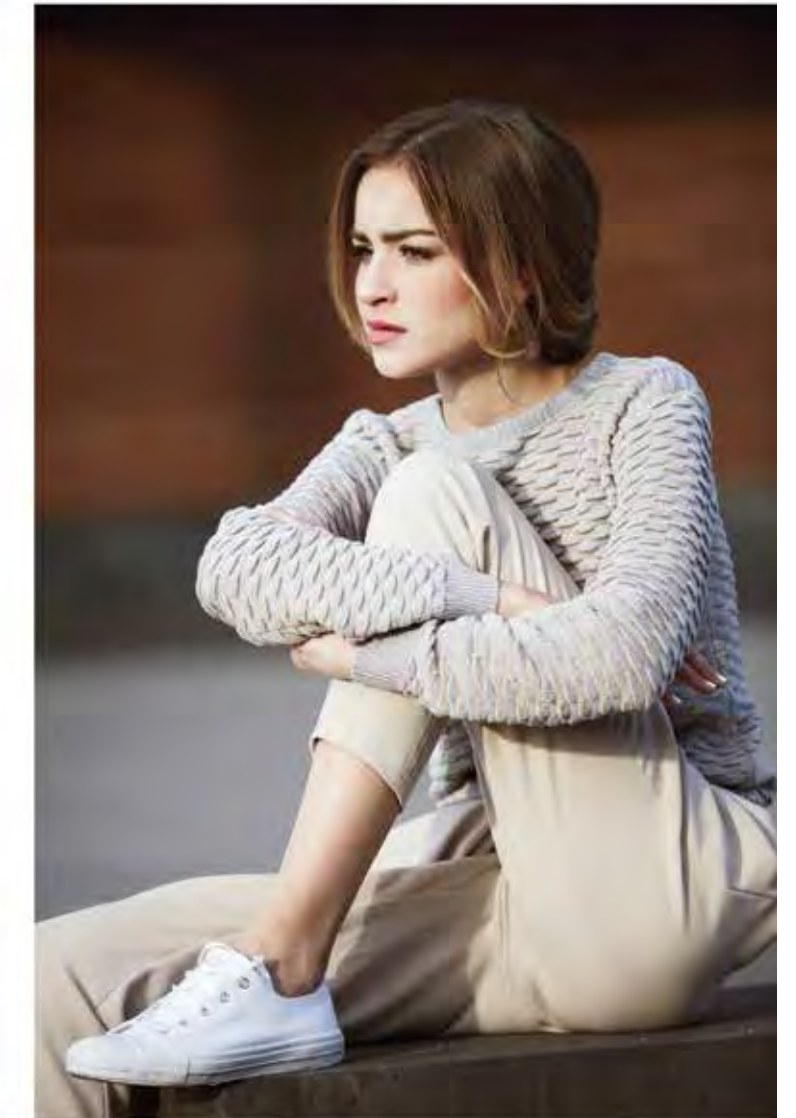
ECOPOLIS

SUSTAINABLE DESIGN STRATEGIES IN FASHION AND TEXTILE
DESIGN FOR LIFE IN THE CITY OF TOMORROW

The cheaper and quicker, the better: The Fast Fashion industry is booming and endangered by its production not only the environment but also more and more people.

Therefore, in my master thesis, I worked with sustainable design strategies in fashion and textile design and developed a collection, which represents a high-quality and fair alternative to Fast Fashion. Following the example of „Seven Easy Pieces“ by Donna Karan, I developed a collection concept, which is based on the idea of a „Capsule Wardrobe“. The term „Capsule Wardrobe“ stands for a minimalistic wardrobe with a few selected pieces of clothing that can be flexibly combined with each other. As a future-oriented design concept, I designed the collection according to the needs of a multi-mobile and urban target group, for which a conscious consumption and a minimalistic lifestyle do not mean abandonment, but freedom and flexibility. Therefore, some pieces of the collection are designed to be worn in more than just one way. There are also garments with additional benefits, such as a jacket that protects against electrosmog or a t-shirt made from Seacell®, which provide a wellness effect. In addition, the collection is characterized by a resource-saving material diversity and a clean colour concept, which is supported by the inspiration of a modern and sustainable architecture.

Fashion without a bad conscience, consuming less but more valuable - this is the philosophy behind ECOPOLIS.



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AWARD:

2ND PRIZE AT DO CAMP 2017

GOING VEGAN IN THE TEXTILE INDUSTRY

CREATING A VEGAN AND NATURAL ATHLEISURE BRAND WITH
A FOCUS ON VEGAN ALTERNATIVES TO LEATHER, CASE STUDY:
GREEN SKIN

Leather is a useful product, but it comes with a high price for the environment, the animals the hides come from, and the people producing the leather. Therefore, it is important to look at new, innovative ideas and products with great properties which make the use of leather unnecessary.

During this work, natural and partially natural alternatives to leather, other than the well-known oil based products, have been researched and worked with. The most important innovative and vegan products for this work were Vegatex, Piñatex, cork fabric and MuSkin. Those fabrics have been included into a business plan for a vegan and natural athleisure brand called "Green Skin". Additionally, some samples made from cork fabric and Vegatex have been produced.

The aim of this work was to show, how easy it could be to substitute leather for a more sustainable fabric with amazing properties and looks, and how a company could benefit from this. It also shows, how costumers could react to a brand like Green Skin and how a concept like this can not only be good for the planet, but also very profitable for the brand. The example of Green Skin was created to inspire and influence other companies in their choice of fabrics and materials, their products are made of. The sustainable concept had been presented successfully at the pitch of do Camp 2017: Helena Wehner (Hochschule Niederrhein) finished in second place during the Pitch Night of the Marc O'Polo Do Camp about "Sustainable Fashion" in Berlin.





SNUCKEN DOENS

MODULAR ACOUSTIC ELEMENTS MADE OF GERMAN HEATH FELT: DEVELOPMENT AND TEXTILE DESIGN OF SUSTAINABLE AND REGIONALLY PRODUCED INTERIOR OBJECTS WITH ACOUSTIC FUNCTIONALITY MADE OF GERMAN HEATH WOOL

JANINA NAOMI KROLZIK
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German heaths are living in the Lüneburger Heide for centuries and are fostering the typical landscape since then. To date, the majority of their wool remained unused and have been disposed of after shearing. Considering current matters such as resource scarcity, climate change and sustainable solutions for product concepts, this practice does not appear appropriate anymore.

This Master Thesis presents new possibilities in textile applications of German heath wool. Furthermore, Janina Krolzik developed sustainable and regionally produced interior objects with acoustic functionality. For this purpose, gained wool was washed, carded and processed into nonwovens and slivers. Resulting fleeces, needle felts and yarns were produced of 100 % German heath wool.

The material is innovative, sustainable, ecologically and regionally produced. It also offers interesting parameters for an acoustic application. Acoustics is an important issue in the interior design, especially in the design of office landscapes. Disturbances can have a permanent negative effect on the physical and mental condition of people. A stainless steel frame construction offers further applications like a room divider or an interactive wall. A requirement profile for the application example is prepared, laboratory tests on the material properties are carried out, a product concept is developed and prototypes have got manufactured.



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AWARD:
INEMURI HITOTSU:
YOUNG CREATION AWARD, HEIMTEXTIL 2017: 1ST PLACE

INEMURI

THE SHORT SLEEP OFFICE-LINE

This semester work, developed in the master class Textile Produkte Design in summer semester 2016 on the subject of innovative product design under the topic "Das Sitzt", is dealing with different kinds of seating accommodation and situations at home, in public and for mobile applications.

The "Inemuri- short-sleep" office line is a sustainable and flexible seating concept based on the Japanese Mottainai culture, that is a key term in the aesthetics of Wabi-sabi and means "to waste nothing valuable" and leads to a design collection that is sustainable in all its facets.

The material concept uses the positive properties of a recycled needle fleece for the padding, combined with a woven cover fabric that is made by Michael Wolf himself. The used weft yarn of the canvas fabric consists of a recycling yarn developed by himself and other students during the "Design for Recycling" project in (2013-2015) at the Niederrhein University, under the leadership of Prof. Marion Ellwanger-Mohr und Prof. Dr. Thomas Weide.

Inspired by the Japanese culture of Inemuri - the short sleep at noon - the design enables employees to have recovering, relaxing povernaps in an area of personal retreat in noisy and crowded office surroundings and the working world.

One of the designs out of the collection, "Inemuri hitotsu", was awarded with the first prize of the Young Creations Award, at the Heimtextil in Frankfurt 2017. The object is foldable and therefore easily transportable. For use, it is placed on a table or desk and it covers head and shoulders of the user and shields him from the outside working world without actually being absent.



INEMURI MITTSU



INEMURI FUTATSU



INEMURI HITOTSU

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DIATOMS NORSK

REGENERATION IN NATURE

The design Diatoms norsk - regeneration in nature was inspired by both the Norwegian style and the German look as well as by the skeletal structure of a diatom.

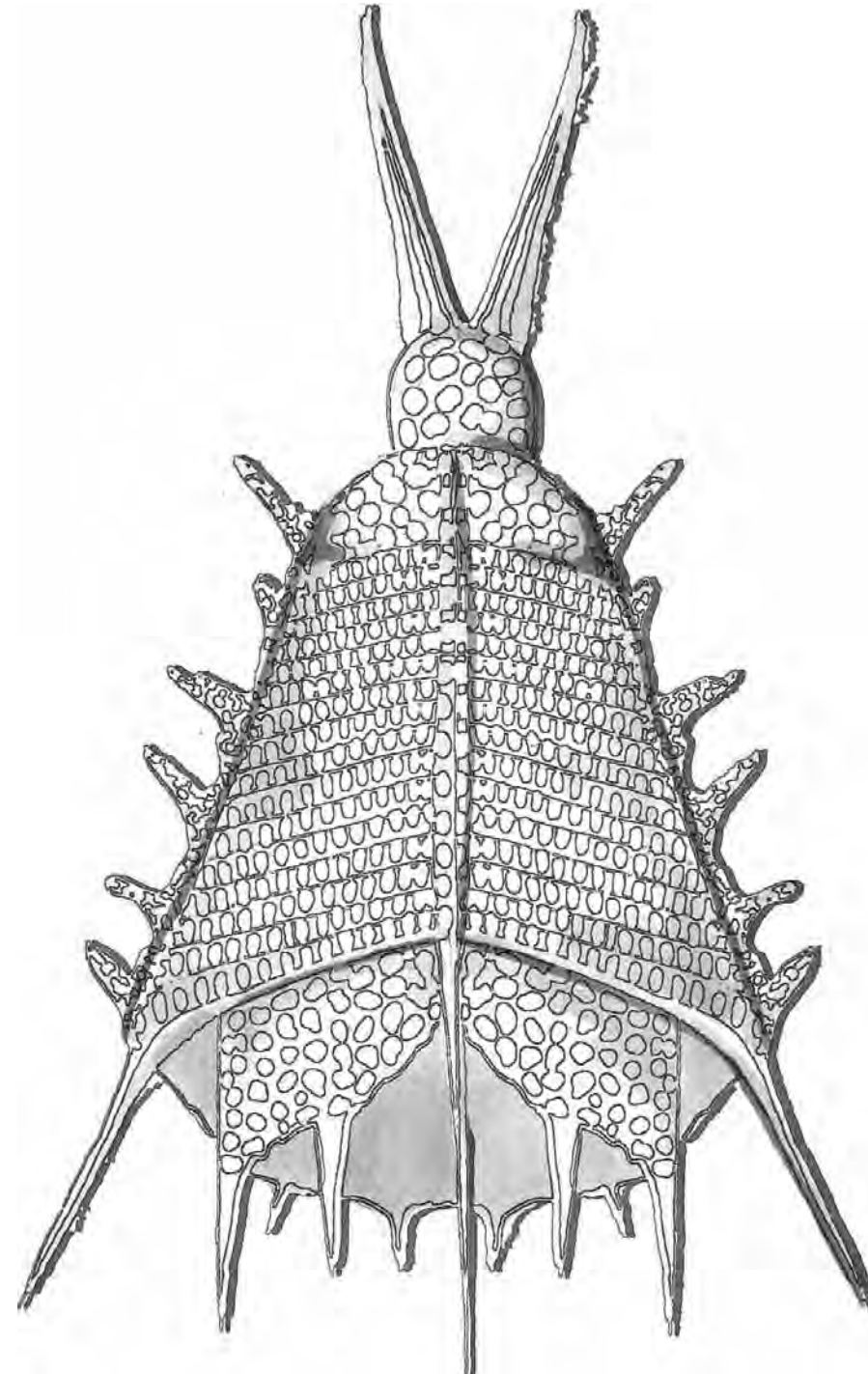
The shape was determined by the 1990s and the Norwegian knitting culture resulting into a minimal, sleeveless, floor-length dress which achieves its sportiness through the materiality, and a loose fit, comfortable sweater resembling a traditional Norwegian sweater.

Inspiration from the lightweight construction of the diatoms was taken and transferred onto the fabric to create an exciting as well as a linear surface, combining a knitted fabric with a weaving technique.

The material used for both products is the Seacell™ yarn, which reflects not only smart characteristics, but also the bond between the Norwegians and nature, in this particular case the maritime space.

Based on the Norwegian flag and the landscapes, the chosen colours are white and dark blue. Blue symbolizes the sea and can be found in the dress, while white stands for the Norwegian high mountains and determines the colour of the sweater.

The design - Diatoms norsk - combines both the minimalism of the two styles as well as the close bond to nature, the concept of sustainability and the Norwegian passion for sports



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THE CUPIT BAG COLLECTION

FOR MOBILE & ECO-FRIENDLY COFFEE ENJOYMENT

This term paper deals with the development of a fictional license collection for the german porcelain manufacturer KAHLA.

KAHLA stands for innovative, long-lasting porcelain design. As a response to the high consumption of disposable mugs in the coffee-to-go society, the company has developed a smart alternative, the new so-called collection CUPIT. The idea of the collection is to have a to-go mug, as a unique companion through the day, for those who like to enjoy their beverages anywhere - whether at home, at work or at the park.

Matching to the CUPIT collection, a sustainable bag collection is developed for the daily use, which allows a perfect storage of the mugs. The bags are made from vegetable tanned rhubarb leather of the company deepmello. Special visual highlights of the collection are the decorative ceramic embroideries.



„... ANDERS AUSGEDRÜCKT BEDEUTET DIES, DASS MODE AUFGRUND IHRER WIRKMACHT ETWAS ENDGÜLTIGES AUSSTRAHLT, AUFGRUND DER SAISONALEN WECHSEL GLEICHSAM FLÜCHTIG IST.“

CONTEMPORARY CLASSICS

A DESIGN-THEORETICAL ANALYSIS OF THE COMMODITY AESTHETICS OF TIMELESS FASHION AND OTHER DESIGN CLASSICS – FUTURE-COMPLIANT VALUE CONCEPT FOR A SUSTAINABLE CREATIVE ECONOMY

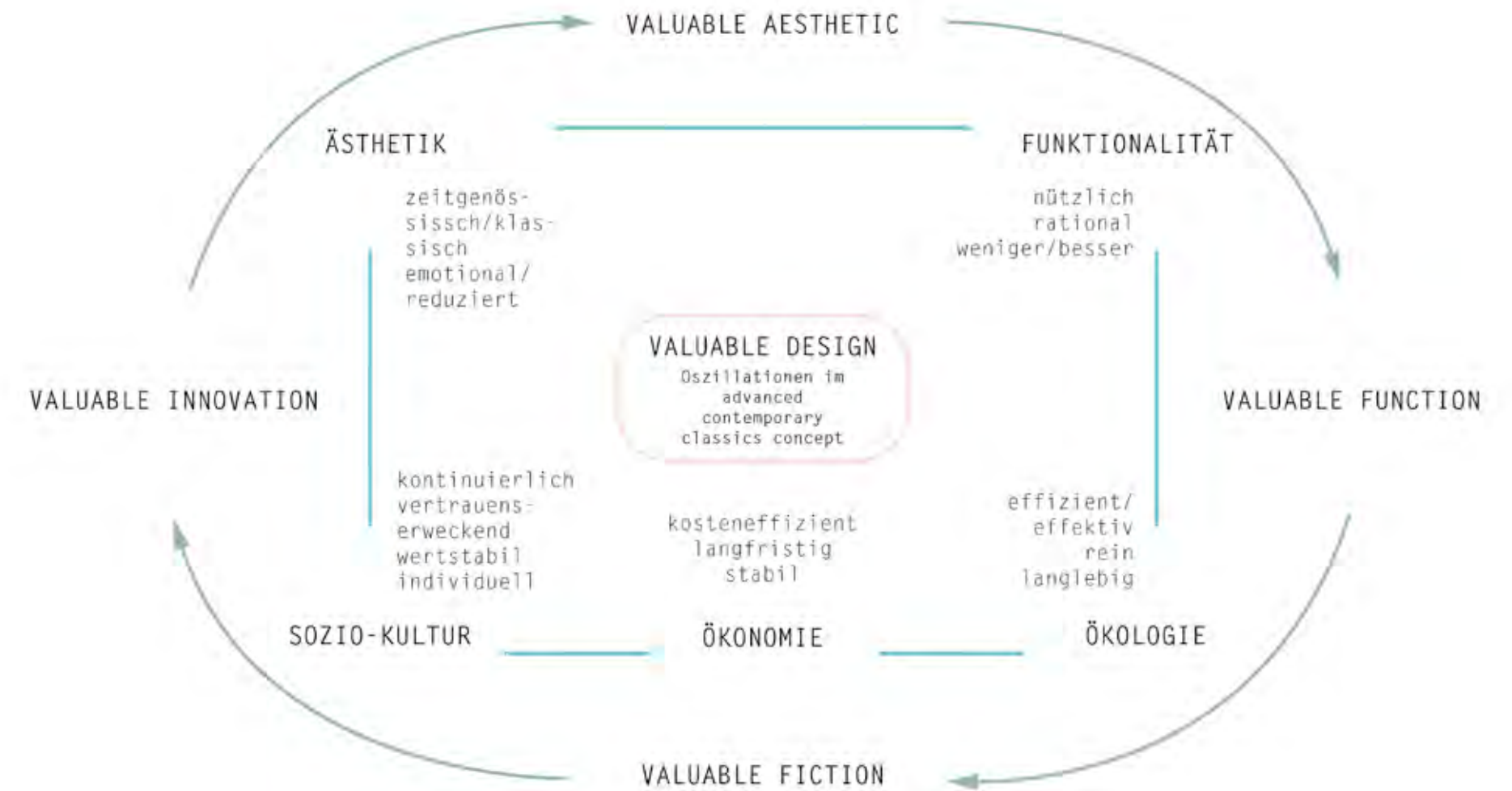
RAPHAELA KÜPER
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What does fashion mean in the context of sociology and material culture in the 21st century and how can one differentiate between fashion and clothing? The myth of fashion must be unravelled to classify the contemporary classics under this phenomenon. Another question to answer is, if these timeless commodities can be fashion too – do they have to be fashion at all? The author outlines the (fashion) needs of the wearer and the corresponding functions of fashion to reflect how contemporary classics can meet the desire of individualization, socialization and communication in a sustainable way. Against the background of this thesis, sustainability includes social, cultural, ecological and economic values. These aspects function as criteria to analyse if classic objects do respond to the analogous normative contemporary discourses, for example by using ecological innovative textiles.

Classic design promises further benefits. Since it means to be both, timeless and zeitgeisty its aesthetic appearance is valuable and durable. Designing and consuming contemporary classics involve the potential of resource efficiency, transformation of consumption, lasting social orientation, communication of lifestyles and values and societal down shifting. According to these future-compliant aspects, the author elaborates visions for an advanced contemporary classics concept that provides the reduction of the economic fashion risk apart from the social, cultural and ecological benefits.



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SWISS MIX

SPORTSWEAR DESIGN: DARK WOOD CUTS & NATURES URBAN LACE

Switzerland - One of the most extraordinary countries is located in the heart of Europe. In it, opposites don't seem to exclude each other, but interlace with each other.

The sportswear designs 'Dark Wood Cuts' and 'Natures Urban Lace' combines contrast between nature and culture. This ensures innovation and progress of the Swiss design and shows that you don't have to decide upon only one side - either nature or technology (culture).

In that spirit, the designs can be enhanced with smart solutions. For instance, by choosing a tri laminate with a layer of activated carbon in the middle, you can clear the air you are breathing. By that you emphasize the meaningfulness of the famed Swiss mountain air.

Another way to use nature's design in this is by using the pine cone and its reaction changes in the humidity as an inspiration to solve the problem of the climate control of the body. By independently opening and closing 'pores' of the textile, a regulation of physiology can be improved.

The design Swiss Mix by Evgenia Guliev relates to the trend of redesign of the 1990s about the cut and symbolizes the typical smartly natural kind of Swiss textile technology.



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TROMPE L'OEIL DENTELLES

COMFORTABLE AND FUNCTIONAL SPORTSWEAR WITH
ELEGANT LACE

An illusion (tromp d'oeil) was created, developed and produced in the technique of textile printing, which conveys a translucent appearance of the fabric to the viewer. The imitation lace is in a new sporty version of the traditional material. Round, romanticised shapes were created, abstracted and presented in a more geometrical way so as to emphasise a more angular appearance and to portray the dynamic nature of sport.

The sportswear combines a comfortable sensation during sporting activities with the impression of a relatively non-athletic, elegant outfit which is representative of the desired image of an attractive woman. The obvious controversy over sexuality during sporting activities may influence people to rethink the common assumptions about female sexuality and additionally help to enhance women's self-esteem and confidence.



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L -TRAIN FROM BUSHWICK TO MANHATTAN AND BACK

TEXTILE FASHION SIGNS AND ZEITGEIST SYMBOLS EXEMPLARY DOCUMENTED AND TRANSFORMED INTO TEXTILE DESIGN

Taking the Subway in New York City is always something special. But taking it under a special perspective makes it ever more interesting. I took the subway in New York for 6 months during my internship and used the most frequent Line, the L Train from Bushwick, Brooklyn to Chelsea Manhattan.

New York City is one diverse metropolis of the world and the fashion capital. The subway is a daily runway show of the so called ordinary people. This experience is the basis for my bachelor thesis. At that time, I was observed and wrote notes down of textile snapshots, or to be more precise, outfits and looks that were attracting to me during my subway ride. It was a random and uncertain experiment of persons and their feelings for fashion that took place in the subway. In retrospective, I was exploring textile and fashion signs, lifestyle and characters of the Zeitgeist during every subway ride. I used these impressions for my practical work and put them into memory sketches to visualize my taken notes. The notes and sketches were transformed into forms, lines, structures and shapes with different ways of expression... new CODES at all. These manually created sketches I brought back into the digital medium to optimize the textile patterns. It's a recombination of the outfit the New Yorker are creating for their trip on the subway. I was using the associative thinking to transform my textile experiment form the New Yorker Subway into textile design characters.



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FREISCHWIMMER

CONNECTING PEOPLE ... AGAINST THE BREXIT

The design is inspired by the work of the photographer Wolfgang Tillmans and the city of London, where he lived and worked for a long period of time. Amongst other things he took pictures of the rave- and clubbing set of the metropolis. This also is reflected in the designers cut. A crop top with cut outs in the area of the neckline and a long skirt with slits, a short bib and crossing straps were developed.

The main focus is set on Tillmans EU campaign against the Brexit and the protests against it in London. Separated areas of the outfit are still being connected. A part of the EU campaign's slogan "It's a question of where you feel you belong" is printed on the back of the crop top. The skirt's print is inspired by Wolfgang Tillmans' "Freischwimmer"-series and sublimated by water conserving printing process. In the design by Nora Lindow, it stands for freedom and overcoming borders. In order to outline that the coexistence of regional and global identities is possible, the armorial of London is placed and printed on the straps' crossing point. It is embedded in the European "star-circle", which is surrounded by a circle. In this context the circle symbolizes the world.

We are free world citizens who carry their home-countries in their hearts. It's utopia, that constitutes the beauty of the design "Freischwimmer" by Nora Lindow.



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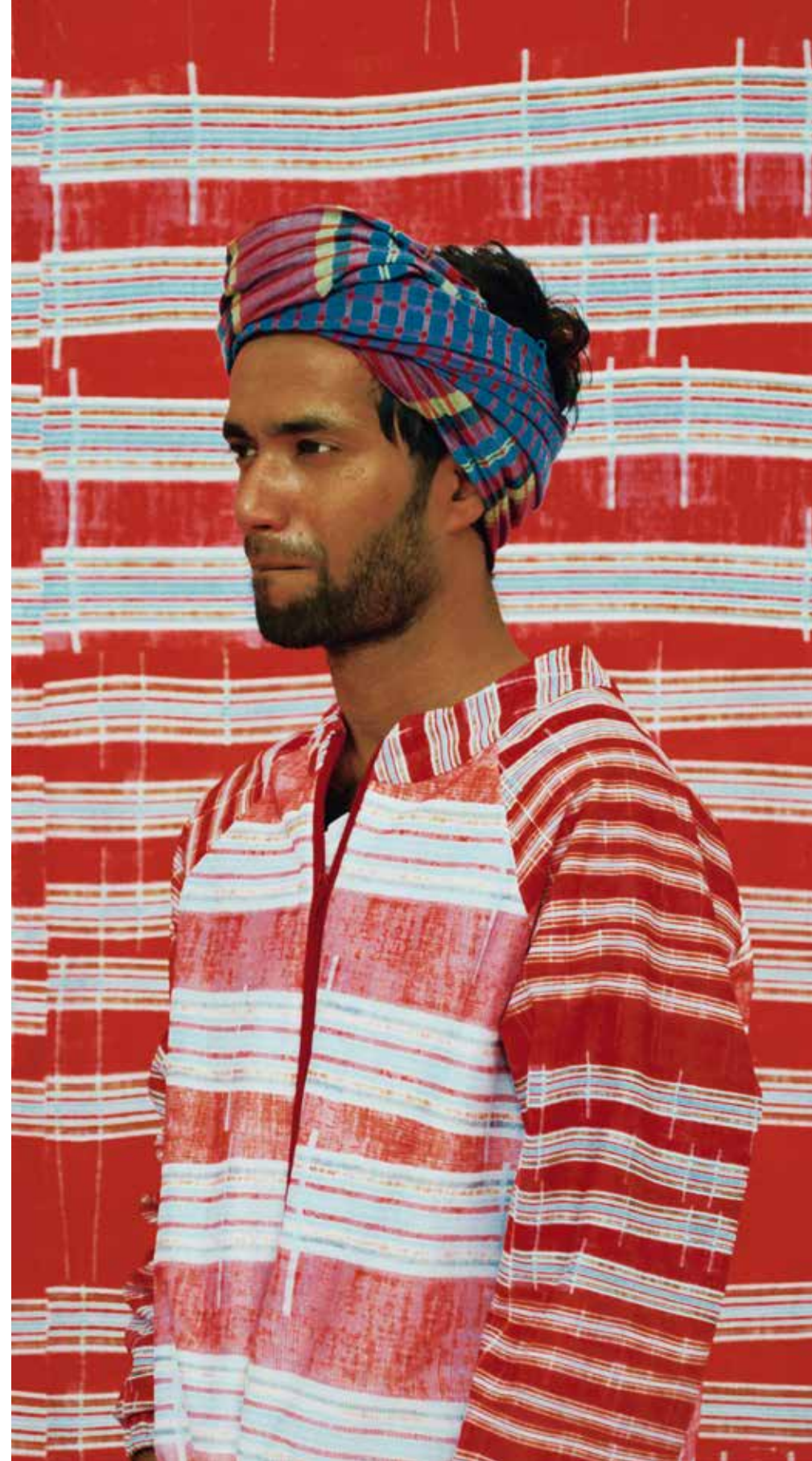
GLOBAL FASHION INDUSTRY – THE DESTRUCTION OF CULTURAL DIVERSITY

THE DISINTEGRATION OF CRAFTSMANSHIP IN BANGLADESH
WITH FOCUS ON GARMENTS AND TEXTILES

The study work 'CONFER', written by Jonas Stracke is discussing the subject, 'fast fashion' from the point of German clothing industry in connection with the second largest textile manufacturing country worldwide, Bangladesh.

From the beginning of industrialized processes in Germany to a global clothing industry, we are now living in the age of fast fashion. German clothing and textile manufactures has been relocated to low-wage countries with the result that there barely no producing units anymore. On the other hand huge production facilities are growing in countries with low wage levels. This fact must be displayed.

The CONFER collection combines both countries with their textile heritage and questioned, whether the standardization of processes in "fast-fashion industry" destroyed valuable and cultural traditions. Traditional Bengali shawls with typical patterns were used for the men's wear collection by using traditional Bengali fabrics and western pattern-cutting techniques. Combined in a new textile design both cultures are showing traditional cultural goods as a symbolic and communicative value.



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LEICA L2 KNITWEAR

TEXTILE INTERPRETATION OF A CORPORATE IDENTITY

The fictional collection “Leica L2 knitwear” was the result of the Master course “Kollektionsrealisation” on the topic “License to Knit”. It is inspired by the German camera manufacturer “Leica”.

The aim of the collection is to present Leica with a younger, more dynamic and contemporary image and to generate the interest of younger target groups with a focus on the growing Asian market.

The brand identity and unique characteristics of Leica has been identified and transferred into a concept for a knitting design collection: On the one hand by using the typical CI colors red, black and silver and on the other hand by using clear designs, knitting structures and shapes, following the timeless and clear design of the Leica product design. The collection is unconventional, but still wearable and plays with the contrasts of materials and colors. Essential characteristics are stripes in the design of color frames and geometric patterns.

A special property of the garments becomes visible only when they are photographed with a flash. Due to the usage of the special retroreflective yarn “reflexa®” from the yarn manufacturer Wagner-Tech-Textil GmbH, hidden patterns appear on the photography of the garment. Once, these pictures are shared in Social Media platforms like Instagram or Facebook, the brand awareness of the target group will rise.



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DAYS IN THE EAST

TRADITION TRANSLATED INTO MODERN PAPERWEAR

“Days in the East” represents an experimental engagement with different cultural environments within the creation of 2D paper clothing. Due to the ongoing Globalization, boundaries shrink and people from all over the world connect.

As human beings in a digital world, we start to adopt influences from many different places and rework into our own identity.

With the rise of being “multi-local” as we increasingly feel at home in multiple locations and eras, a new opening to culture, community and history is given. Minimalistic coloring such as white in combination with metallic paper features represents western minimalism and modernity merged with traditional asian clothing such as the kimono to express the feeling of being enamoured to different cultural environments.

There is an apparent contrast between coloring, material and apparel, an experimental disruption with known tradition to display the existing differences, and yet to celebrate that those uniquenesses do not detain the ability to coalesce as a unity.



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MAN, GET REAL!

Multimedia is transforming society and takes over the personality more and more. Do we live in a dream world? Are we anchored in reality? Or do we play the role that the multimedia world forces us on our inner self?

GET REAL was the theme of the term. Irina Bayer tackled the stereotyping of women and men. Gender roles correspond to the biological gender, but define us as what is typically "feminine" and typically "masculine" in society. Scientific studies have shown e.g. those male children who were dealing with female connoted toys showed a remarkable empathy towards their fellow human beings in adult life. For Irina Bayer, this results in the fact that the "true" Ego of a man also has a strong "female" side, which he could live out if the social concept of stereotypical role distribution did not exist.

Transferred to fashion, she concludes that feminine clothing elements are not associated with a gender, but can be used interdisciplinarily. This resulted in male clothing products, which, by incorporating typical feminine stylistic elements, would reveal the feminine side of the man and thus enable him to make the path to self-realization. In general, the challenge was to create a design that did not reveal too much "femininity" and did not belong to the category of "transvestite fashion". Female elements were hidden in the design. The man can turn to different roles of his reality. Multi-layering and modularity are components of the design strategy.

The result is the collection "Man, get real", which does not deprive the man of his masculinity, but gives him a new understanding of gender-conforming fashion.



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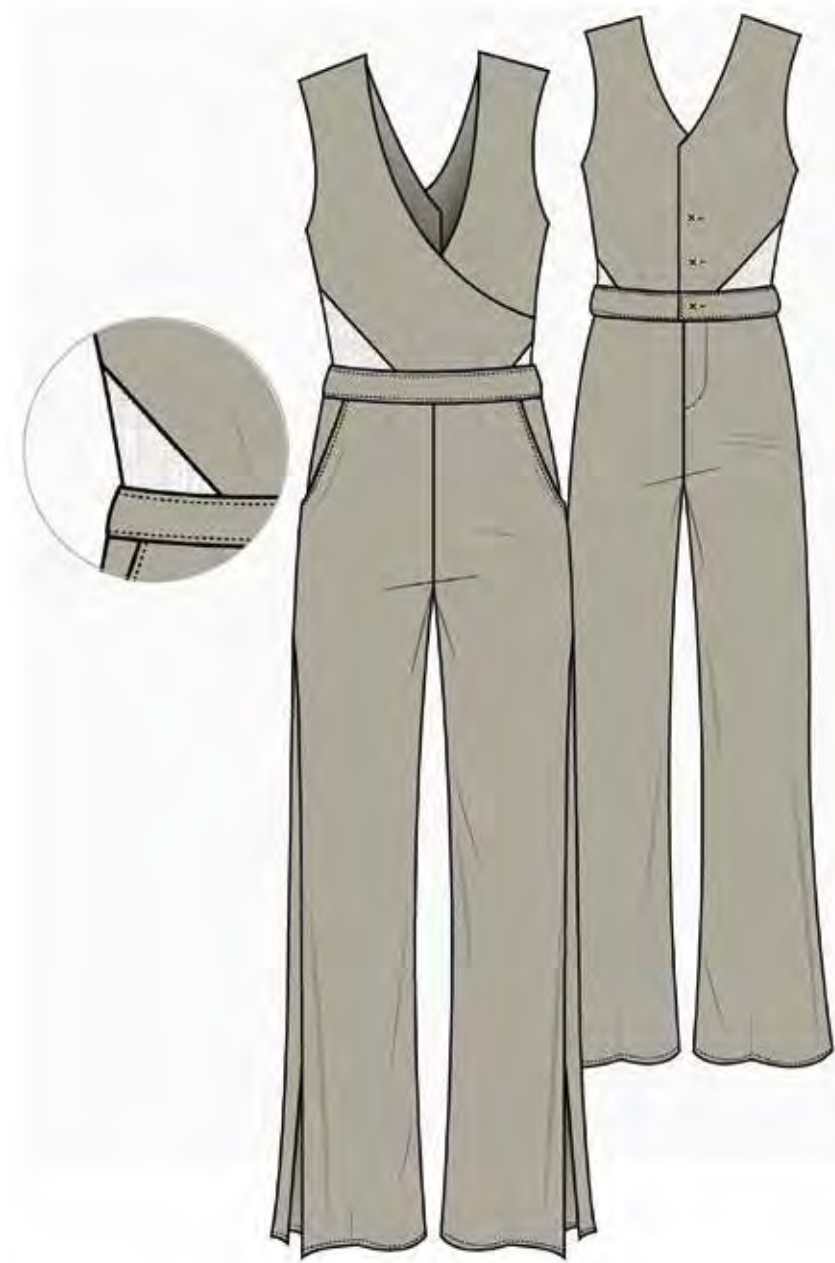
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LA GARÇONNE MODERNE

DESIGNING THE NEW GENTLEWOMAN 2020 BY ANALYSING
MINIMALISM, GENDER AND THE CULTURAL HERITAGE OF
THE 1920TH

The source of inspiration for the postmodern Gentlewoman lies in the phenomenon of the New Woman in the 1920s, as well as the vanguard Bauhaus-architecture at that time. Minimalism, function and innovation are the key notes of both trends in modern age.

As an interpretation of the cultural heritage of these two parts, the image of the Gentlewoman in the 21st century is analyzed, especially how it is drafted by the Garçonne and Bauhaus-architecture. In this connection the gender question in the fashion design of a Garçonne-look comes to the fore: How is the gender influenced by the dressing practice? What are typical masculine and feminine aspects in fashion? While adapting masculine elements, minimalist design strategies of the Bauhaus-architecture and the New Woman-look of the Golden Twenties in fashion, the contemporary Garçonne arises. With a view to innovation and sustainability, a very new image of an emancipated, strong Gentlewoman 2020 will be created.



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FASHION - SNOW WHITE

SCULPTURAL ILLUSTRATION OF THE FAIRY TALES PSYCHOANALYTIC INTERPRETATION

Fashion means more to me than just being pretty and adorable. The way women act and present themselves in social networks is regrettable. It's like social media is their "mirror on the wall".

If you start researching about narcissism, you'll get to the fairy tale of snow white very soon. A children's tale turns into a story full of seriously meanings. A tale about a narcissistic mother who puts her daughter under pressure. Snow white is not allowed to get independent and when starts to show her own will she gets punished with drawal of love. She is conditioned to be lovely and polite. The Tale is full of metaphors and provides space for interpretations.

The aim of my work was to design and realize sculptural illustrations. The Illustrations where built out of wire, plaster und textile. The heads did fly ahead the bodies to show the separation of body and soul. Some looked like they were not finished. These "unfinished" details showed the fragility of their souls. I want to encourage to reflect yourself and to work on your self-confidence. It's important to find your own way and your own will. If we can trust the world-famous trend scout, women will change their thoughts about Beauty and no longer get told what's beauty.



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ONCE UPON A TIME ...

DEVELOPMENT OF A DESIGN CONCEPT INSPIRED BY CLASSICAL FAIRYTALES, BETWEEN SOCIO-CULTURAL TRADITIONS, GENDER SPECIFIC STEREOTYPES AND FUTURE ORIENTED IMAGE OF WOMEN

This Master thesis is inspired by the 21st fairy tale of the Brothers Grimm, the story of Cinderella. Based on a detailed research on the history of folktales and fairy tales, the typical role models and stereotypes of their key protagonists and how they changed during they have been given on from generation to generation for more than 200 years, a design concept was developed telling it's own story of new interpretation.

The main focus of this concept is on the gender stereotype of Cinderella, her female role, as well as the classical features of the fairytale. Cinderella overcomes social boundaries and the life of an oppressed woman, but despite all the grievances, she never loses her good-hearted nature and hope for a life worth living. The development of the fairytale figure of Cinderella over the centuries is directly related to the social change and the image of women in society. Her figure in the fairytale is an everlasting symbol for optimism, hope, emancipation and trust in future.

This spirit of independence, transformation and freedom has been transferred by Irene Parisi in a design and collection concept by using stylistic means of deconstruction and construction. In this process, stereotypical elements are connected in new ways, fairy tale-typical contrasts are implemented in material, color and silhouette and traditional aspects are combined with current trends.



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UNDER THE SPELL OF THE ROLE

FEMALE SUBJECTS BETWEEN CONSTRAINTS AND LIBERATION

„Bann der Rolle“ displays a critical examination of the paradoxes of a female role model. The focus is set on the dualism of pressure and release as well as on the one of appearance and reality.

Cultural discourses on female ideals evoke processes of subjection, especially with respect to the body and its decoration by e.g. cosmetic or material practice. As a significant trigger of appearance and (illusiv) identity the activity of dressing can be subsumed under the latter. However, besides these socio-culturally communicated expectations and restrictions (female) subjects can refer to a decent agency. Hence, they can cut their constricting bonds, e.g. ideals of beauty, by uncovering and unraveling their true self. The “pappcouture” „Bann der Rolle“ captures this moment of agency – whilst trying to show what lays under the clothing, the woman probably helps herself using scissors.



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PEARL OF ENGLAND

IN REMEMBRANCE OF THE 90S AND TO THE HERITAGE OF BRITISH TEXTILE PATTERNS: AN HOMAGE TO PRINCESS DIANA

The outfit 'Pearl of England' refers to life aspects of Princess Diana. From a shy girl, to suddenly the most popular member of the royal family, evolving into an influential and strong public figure.

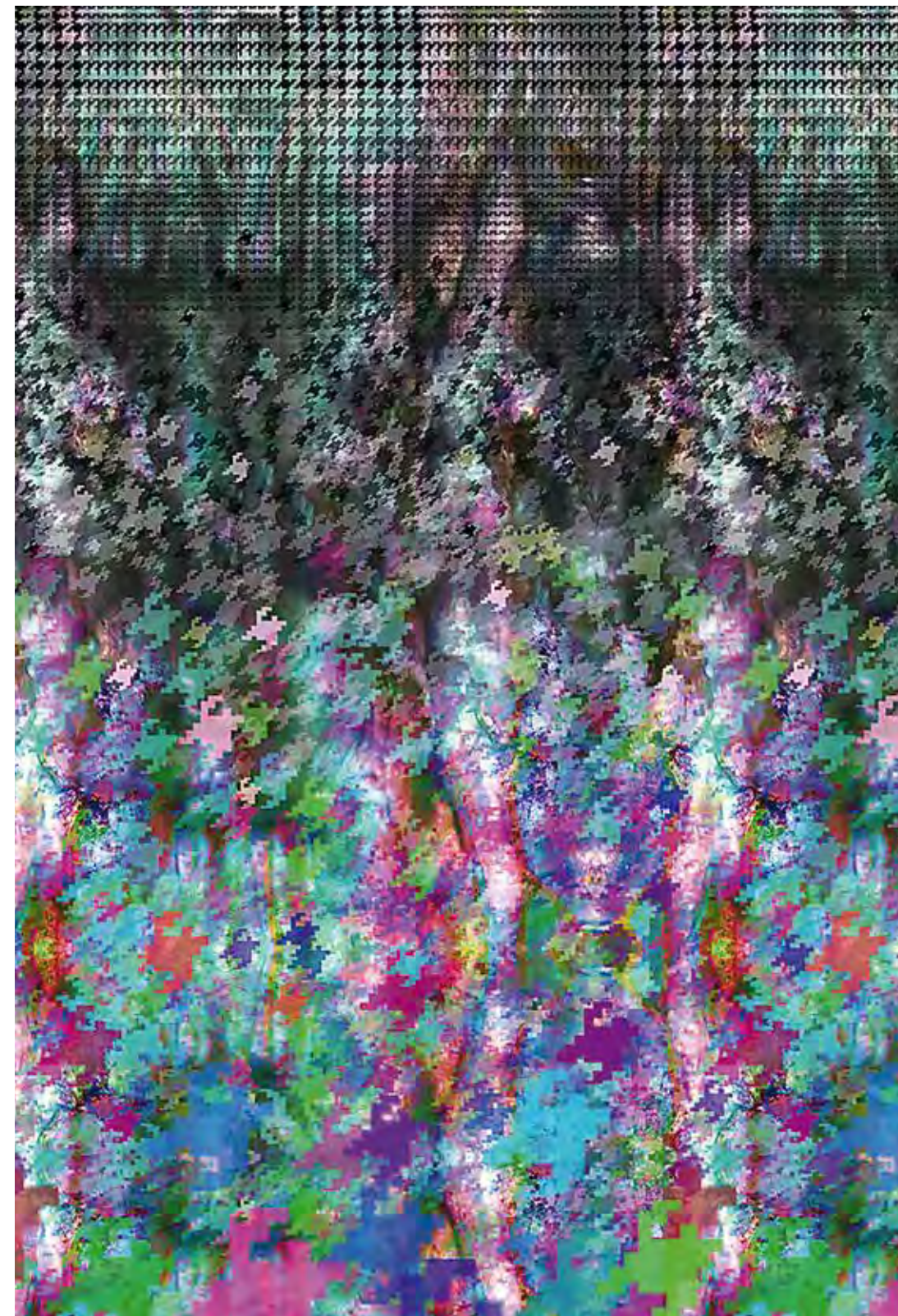
The bodysuit 'Drops' with Diana's dearest pearl jewellery depicts her sporty, almost too feminine and seductive side in opposition to her breakout from the Queen's strict rules.

The blazer 'Delute & Pearlescent' symbolizes Dianas formal look for political appearances. The patterning combines tradition and etiquette as well as Dianas multicoloured, mostly bright, engaging temper. She renewed the dusty heritage with brilliance and gave the British more national pride again.

The skirt 'Sea of Tears' shows the princess' last station. Her death left millions in shock, illustrated by the huge amount of flowers laid down at Buckingham Palace.

To complete a visionary design, the textiles might have smart parts: Filtration - inspired by shells - that coats noxious micro particles and thereby keeps the wearer from harm. Moreover, care-providing microcapsules enhancing comfort and the feeling of beauty.

The Design 'Pearl of England' by Corinna Marmetschke keeps Lady Di's heritage and illustrates its influence on the British Empire and the whole world by an innovative idea in textile technology and textile & fashion patterns.



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KNITWEAR FOR RIOT GRRRLS!

KNITTED PROTEST AGAINST STEREOTYPES AND GENDER ROLES

The collection Knitwear for Riot Grrrls! is a knitwear collection for women inspired by the feminist punk movement of the Riot Grrrls. It contains ten knitted pieces.

The subcultural movement of the Riot Grrrls arose in the 90ies from the American city Olympia, Washington. These young Americans expressed their feminist issues in a musical manner. They protested against the conservative stereotypes that existed for girls and reclaimed negative feminine insults such as "bitch" or "slut".

The collection expresses the protest against stereotypes and restrictive gender roles by contrasting materials, colors and constructions. Cute and typical female aspects are deconstructed and reversed in an ironical way to arouse consciousness for outdated views. Aspects of the American High School Look and the Cheerleader Style clash with punk elements and destroyed appearances. Pink and light blue as typical "girls colors" encounter hard, dark black, which is a strong contrast and brings a punky style to the collection.

The collection is designed for different sizes and bodytypes. Therefore, one bodytype and size from 36 to 44 were related to five leadsingers of famous riot grrrl bands. An according knit piece was designed for each riot grrrl.



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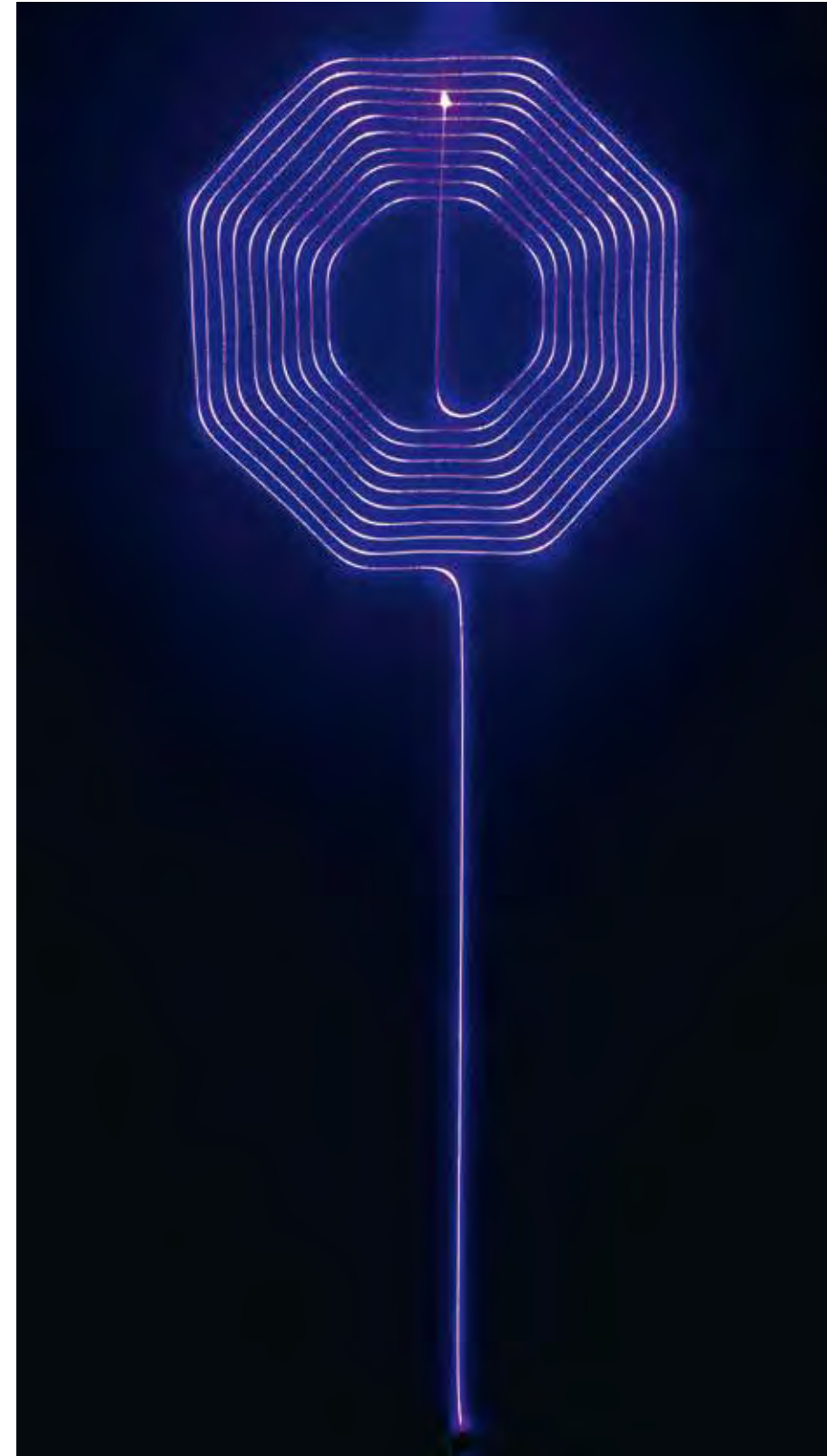
LIGHTIWEAR

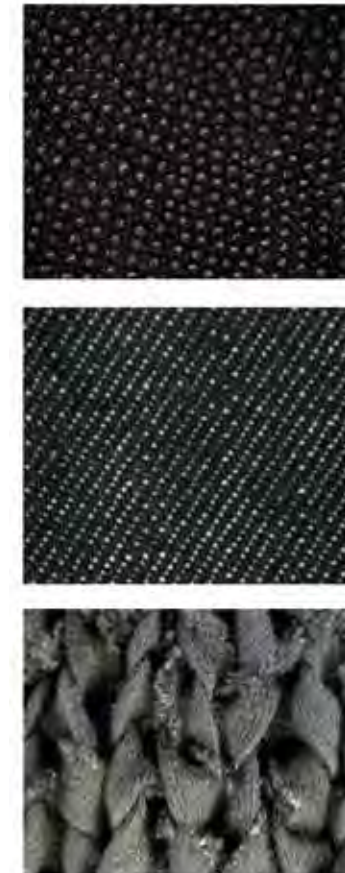
ANALYSIS AND IMPLEMENTATION OF LIGHT EMITTING TEXTILES WITH REGARD TO THE FASHION INDUSTRY

LIGHTIWEAR describes a limited light emitting fashion collection constructed by Farbod Daneshian as part of his Bachelor thesis. The conceptual idea behind LIGHTIWEAR is to construct ready-to-wear clothing pieces with light emitting features. Too often this kind of textile technology is used for high-end and artistic fashion design, signalling that light emitting technologies are not suitable for everyday clothing. This statement is to be disproved by LIGHTIWEAR.

With smart designs, minimalistic cuts, strong lines and exciting patterns LIGHTIWEAR will not only increase the awareness for light emitting fashion but also deliver fully functioning pieces using a unique light emitting technology. Within the production of the light emitting fabric, high quality optical fibers are embroidered onto the fabric, using a special embroidery technique that allows almost every kind of desired pattern. The optical fiber is then connected to a small wearable laser which functions as light source. Upcoming new pieces can even be controlled via app with different settings for the light emitted feature. Due to the smart construction of the LIGHTIWEAR pieces, lasers can be exchanged and thus the same clothing piece can emit different colours within the visible spectrum of light and even infrared light.

LIGHTIWEAR pieces display their full potential in barely illuminated environment. When surroundings get darker, it only takes the push of a button to defy the gloomy void of night-time.





Sinne
Kulturgut
Erinnerungen
Praktisch
Funktionalität



Nostalgia



NOSTALGIA

CLOTHING COLLECTION FOR MARS MISSION
"MARS ONE"

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AWARD:
"SPACETEX 2030" DESIGN CONTEST: FIRST PLACE

For the research project "Spacetex 2030" by the Hohenstein Institute using high-tech materials, a clothing collection for astronautics and the mars mission "Mars One" should be developed in the subject "Innovatives Produktdesign". Therefore, technical requirements for clothing had been analysed considering aspects like human physiology in space, the transportation of liquid sweat, muscle wasting and bone loss in zero gravity as well as cleaning of clothes with limited water resources.

The certainty of not returning to the "blue planet" will evoke a new kind of Nostalgia. Therefore, the resulting outfits for the stay on mars have the possibility of using a mobile fragrance-library (gadget), which can be easily integrated in the jacket and controlled via Bluetooth. Besides memory supportive fragrances the gadget also emits fragrant essences to strengthen the immune system. The design of the outfits is inspired by the features and the aesthetics of the architecture of major cities.

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AWARD:
“SPACETEX 2030” DESIGN CONTEST: FOURTH PLACE

ADAM AND EVE 2.0

WHO'S GONE BE THE FIRST ON MARS?

According to the Bible, Adam and Eve were the first inhabitants on our planet, the earth. After Eve had eaten the forbidden fruit, which was contrary to the rules of the living space, they were both excluded from paradise. In future, people want to populate the planet Mars and dare a new beginning, outside our home planet. Apart from the question of who is chosen as Adam and Eve, the space travellers expect an uncertain future. They must try to make the planet usable for future generations who need to see that planet as their new homeland. Unity in the Space-Outfits is used as a positive-acting element for a heterogenous team with individual competencies and characters in order to signal cohesion and strengthening of cohesion.

Both of them wear a tight body suit, which can be individually designed by prints. The result is a uniform unisex clothing which is less uniformly, more sporty and allows for individual accents. A clear line is necessary in contrast to a restlessly active interior equipment of the space ship. Due to the mistakes we are doing on planet earth, we need to create a sustainably managed life with limit to the existential. It is not only desirable, it is necessary.



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WITH ALL SENSES

DEVELOPMENT OF A FICTIONAL TEXTILE LICENSED COLLECTION FOR THE GERMAN BRAND THYSSENKRUPP, SUPPORTED BY A SYNAESTHETIC CONCEPT

Inspired by the industrial company thyssenkrupp the women's sports line was developed by design student Anna Droemont in relation to dynamics and progress.

Next to the goal of an aesthetically appealing design and the promotion of a positive physical feeling, the focus of the collection is its functional practicability. For that purpose, the clothing items were equipped with a special mint scent, which creates a cooling sensation of the material when it gets wet and also causes the fabric to exude a refreshing minty smell. Another positive quality of the mint is its antibacterial and invigorating effect.

All items of the collection can be combined with each other arbitrarily in order to facilitate the customer's process of putting together her exercise wardrobe. Additionally, each clothing item has a different practical function for athletes, for example headphone holders, removable parts, ventilation openings or reversible wearing options.

Particular attention was paid to the choice of materials regarding different areas of the body. Body parts that tend to produce more sweat are getting cooled down by a coordinated pattern and specifically selected fabrics. Consequently, due to the usage of functional materials, moisture can be transported away from the body.



- CHANGEABLE SWEATER -

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I-KIDS

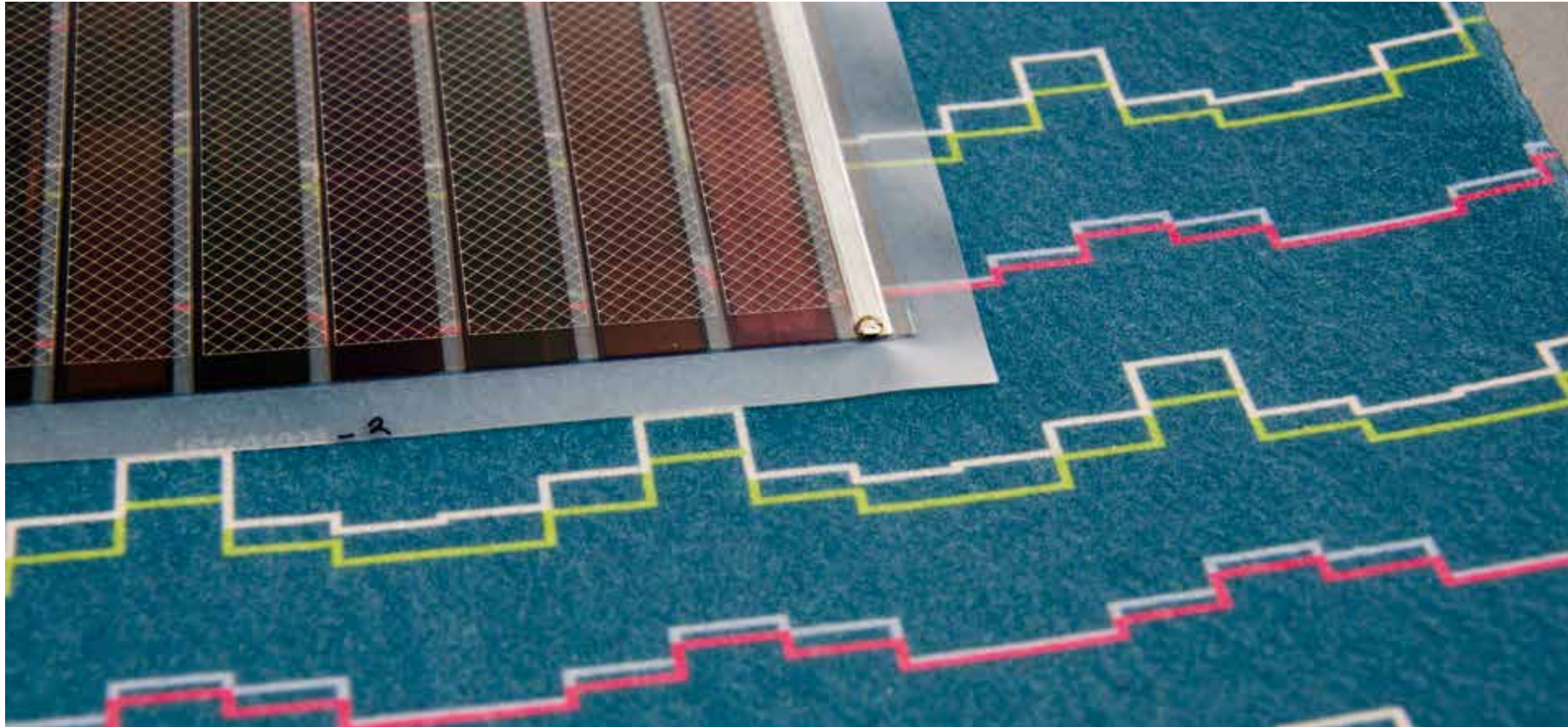
CONCEPT AND DESIGN OF A FASHIONABLE DISABILITY CLOTHING LINE FOR KIDS WEAR, INVOLVING INTERACTIVE ELEMENTS

Inclusion is now an important issue in schools. If physically or mentally handicapped children want to integrate into everyday school life, they must have appropriate clothing.

In her Bachelor thesis, Ms. Breuer has developed a clothing collection for children with inclusion that addresses the special needs of children with intellectual disabilities. A market analysis shows that the supply of disabled children's clothing is low, and in particular the fashion aspect is missing. For this reason, not only functional but also modern garments should be designed which meet the needs of children, nurse and parents equally.

In addition, interactive elements are integrated to improve children's motor skills. Cutouts are further cut and marked in color to help the affected children to get dressed. The playful elements include the use of reversing sequins and removable patches, which depict children's heroes. A special feature of the collection is an outer layer of outdoor jackets which show a print motif when wet. With this kids wear collection, Ms. Breuer has succeeded in giving the I-Kids more self-assurance to the motto "help me do it myself".





DIGITAL textile WORLDS

TEXTILE CONCEPTS FOR TOMORROW'S OFFICE ECONOMY

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DIGITAL textile WORLDS deals with the development of textile concepts for Tomorrow's office. Starting point of this research work was the change in the office world and the required implementation of new working scenarios focusing on textile materials.

Digitalisation and global networking through internet are the central aspects of the changing behaviour of worker today. This leads to new working processes, characterized by knowledge work and communication and creates the need for innovative office spaces that are just as flexible as the work itself. Novel textile concepts offer the potential to create these spaces. Intelligent textiles are capable of having additional functions up to the integration of electronic components.

The concept is created following to terms 'analogue' and 'digital' in design, which are characterized in a special way by Otl Aicher.

Based on this definition, ideas for innovative textile designs are explored in different studies: the design 'Flexible' focuses on textiles with a special function - a textile material was equipped with magnetism in a number of ways. The design 'Innovative' focuses on a nonwoven material that can be shaped in three-dimensional forms and has potential to contain intelligent technologies. This innovative design concept allows shaping tomorrow's working space in an appealing as well as functional manner and took the textile material lab in a special way into consideration – also in a 3-dimensional one: analogue + digital.



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PIXEL VS. BRUSHSTROKE

ANALOG & DIGITAL MEDIA OF ART FOR A TEXTILE INTERIOR
& EXTERIOR DESIGN: CASE STUDY "AUTOMOTIVE DESIGN"

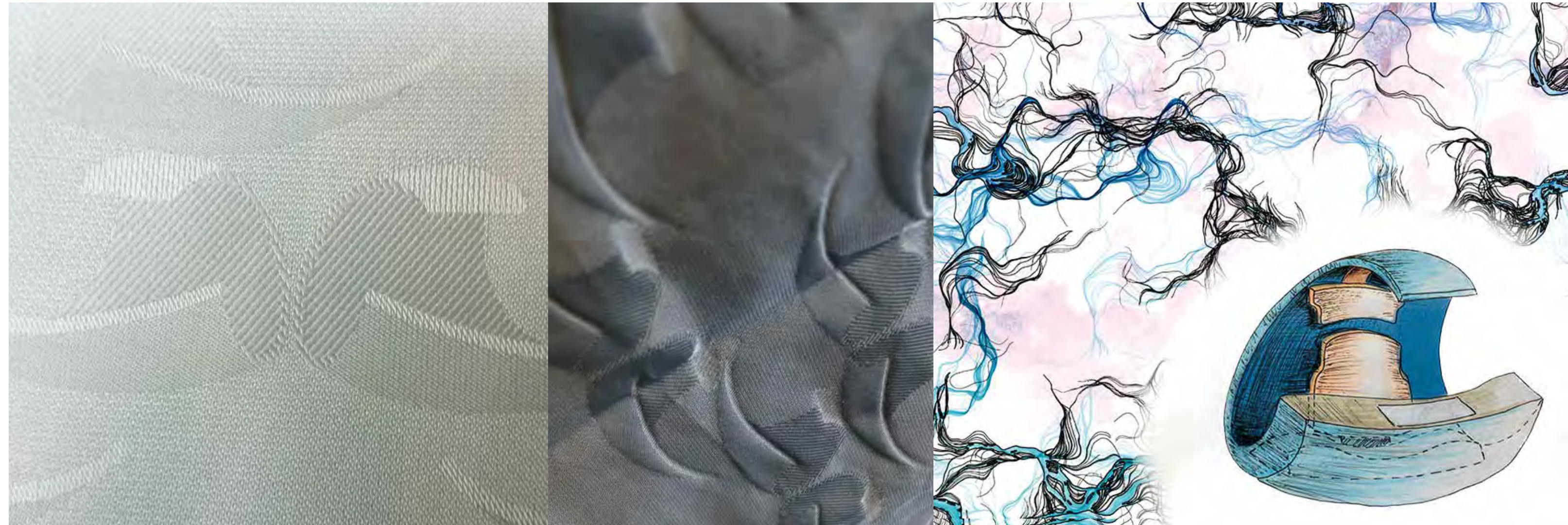
Today, where the digitalization infiltrates all the areas of the human being, the significance of the human brushstroke has to sustain its position again. Why do we need designers if everybody can generate their designs by themselves? And why are the definition of beauty and the criteria of aesthetics in the 21st century so important at this point?

The digitalization also changes the way we move in the future. An estate car, driven by only one person, doesn't fit in this future thought anymore.

The aim of this thesis is to preserve the tradition of craftsmanship and the appreciation of the own brushstroke and combine it with the technical advances of the digital revolution to lift the quality of design to a higher level. This newly formed design will be applied to an innovative design concept of mobility. The use of textiles coming from interdisciplinary fields completes the function of the concept car by rethinking the textile interface.

The inspiration came from Hokusai "the big wave", especially the deep Prussian blue and the opposites presented in the image. This goes along with generative design method, which reflects the form of waves and the structure of the water surface area in the design.

With the creation of this thesis "pixel vs. brushstroke" and the concept car, the idea of movement will be rethought and changed in a way that allows us to preserve the natural resources. A not too spacious vehicle where the human takes center stage to leave his own ecological footprint.



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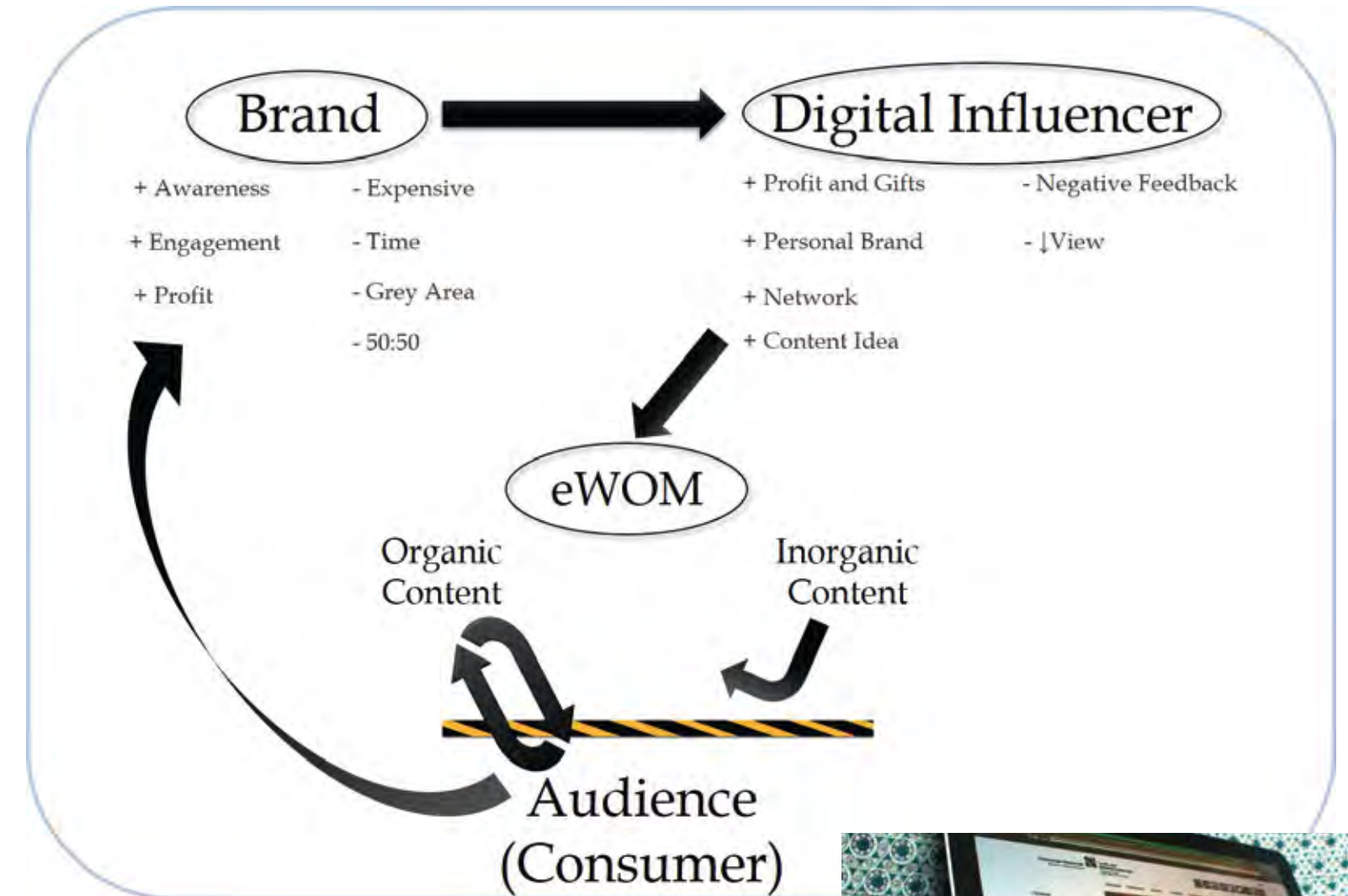
DEFINING THE DIGITAL NATIVE INFLUENCERS

ANALYSIS OF ONLINE TASTEMAKERS AND FASHION INDUSTRY COOPERATION FROM MARKETING PROSPECTIVE

Digital influencers are the icons of the XXI century. They are phenomenon of social networking. Besides that, digital influencers can be considered as a medium of fashion leadership. Millennial and Generation Z strive to be like their favourite online celebrities, as they can reflect their thoughts and attitudes. They are close to them spiritually and mentally. Due to that fact, digital influencers can make followers to accept their subjective opinion on trends and brands by effecting on their mood, style and buying behaviour. Thus, partnerships and collaborations with digital influencers or with micro-influencers are a real driving force of fashion because they trigger sales and progress and help to lead the market towards the positive output.

The bachelor thesis examines development of digital influence and opportunities for brands to partner with online content creators for the marketing goals. Paper provides various examples of modern digital influence from social media platforms to define the digital native influencers, their power over consumers' opinion, and their role within fashion industry as well as in other fields.

The main output is case studies, which illustrate different ways of collaboration with different online personalities. The result is an overview of advantages and disadvantages of such a cooperation as well as suggestions regarding social influence and micro-influence. These tools are part of eWOM -model, which is explained by the info graphic beside.



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AWARD:

WILHELM – LORCH STIFTUNG 2014

MOBILE.IN.KNITWEAR.

A FUNCTIONAL KNITWEAR COLLECTION FOR AN ALL-DAY-PERFORMANCE

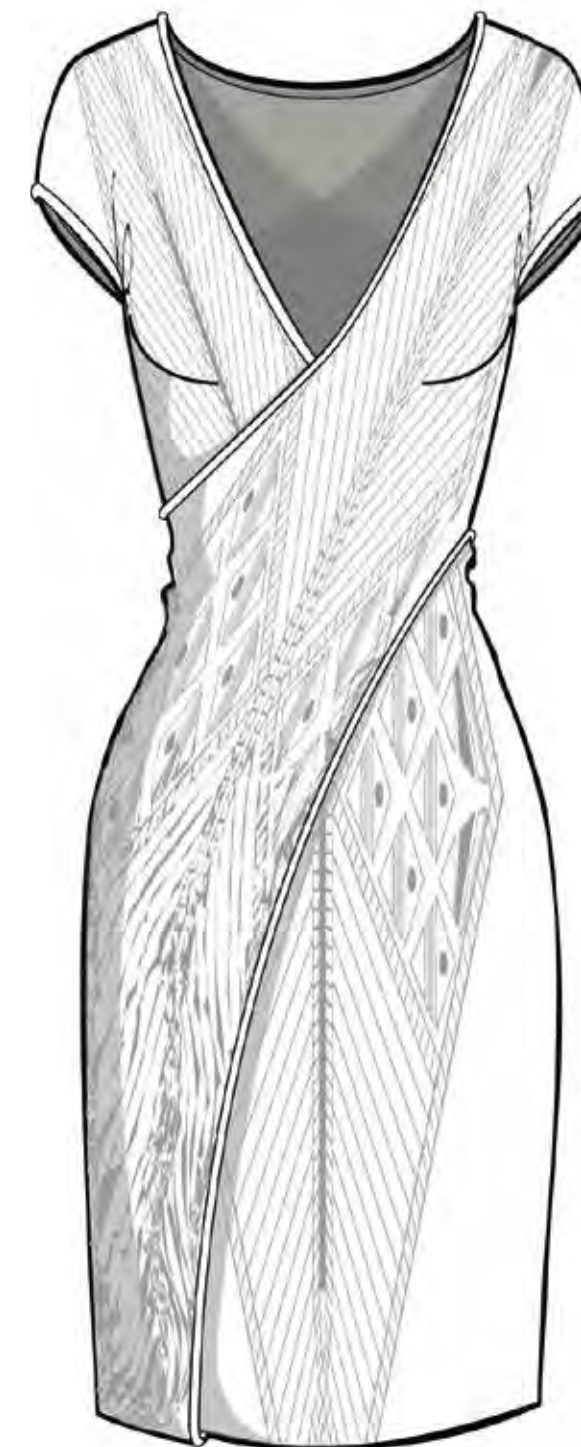
This collection has been inspired by the culture of urban mobility and daily rush, which are accompanied by the personal desire for nativeness, privacy and serenity.

The aspiration in our working and social life is to use the available time as intensively and efficiently as possible. Packing a bag for a business trip and commuting is part of our daily life. This kind of urban nomadism is a phenomenon of metropolitan life. During the past decades, we have not only been changing our lifestyle behavior, but also the choice of our wardrobes.

MOBILE.IN.KNITWEAR. is a functional knitwear collection, which is designed for an all-day-performance. The style is inspired by timeless classic items of clothing from the past century that still have a strong impact on today's fashion. It is designed as a capsule wardrobe collection containing 24 contemporary and elegant pieces.

Combining a range of delicate knitted structures with a variety of natural and technical fibers, this collection shows an innovative interpretation of functional garments. The materials are highly breathable, maintaining a well-tempered body climate even when cycling to work for a busy day at the office.

With this master thesis, the attempt was made to respond to contemporary phenomena and to rethink them in the context of fashion. By combining different requirements, such as functionality and modern optics, something new has emerged that can meet the requirements of the 21st century.



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SMART ARAN - SMART TEXTILE

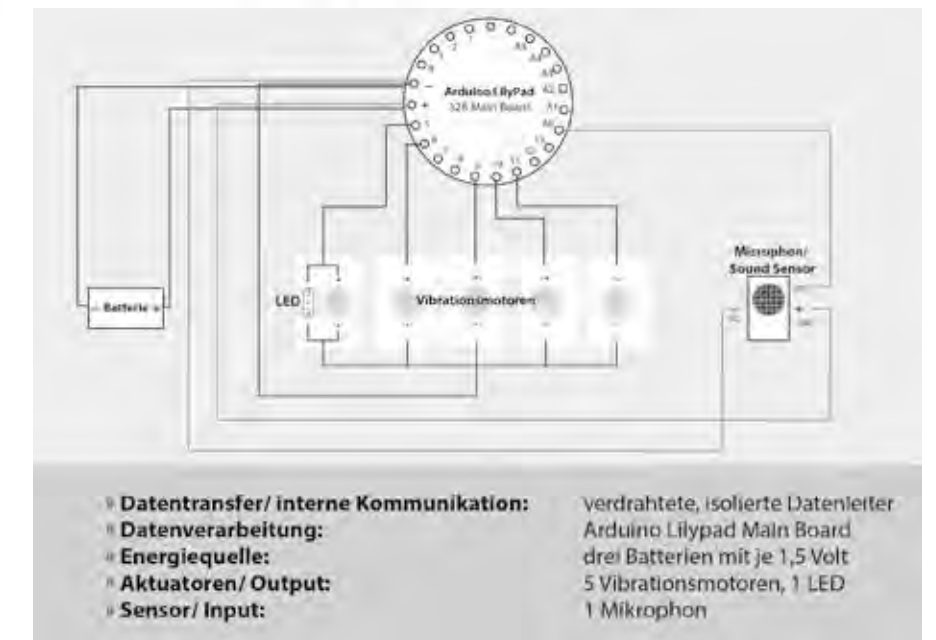
TRADITION & COMMUNICATION IN A NEW CONTEXT

This Master thesis combines tradition with innovation. As a starting position for tradition the Aran Knitting Sweater was selected. To show the innovation capability, the Aran Knitting Sweater should be turned into a smart textile. So the goal of the thesis came up to use knitted Aran styles as communication devices.

In general, today communication devices are created to target our visual and auditory senses. As a result, these senses are having an overloaded sensory input and other senses not receiving that much stimulations are not challenged enough. So the idea arose to stimulate one of these senses.

In the future, the globalisation will separate the social world and family clans more frequently. Technical components and clothes must adapt to this situation. So, the very first idea to communicate visually with the Aran sweater was dropped and changed into a strategy for a new way of tactile communication. With this concept, a family can communicate over longer distances using voice frequencies transferred into vibration codes, stimulating our sensory senses. Thus, the tactile sense is trained. The vision for the future is to understand and receive information only by vibration codes.

To show how that kind of symbiotic relationship of future communication and traditional stylistic means could look like, is the aim of this Master thesis.



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Ellen Bendt is fashion designer specialized on knitwear, innovative product development, knitting techniques, technical training and product management, with references from several international companies.

Her main research field is the development of sustainable textile design and applications. In her current research, she is involved in the reduction of microplastic fiber emissions in the sea and design solutions for textile industry 4.0.

Ellen Bendt is Professor for Fashion Design/Knitwear & Innovative Product Design (Hochschule Niederrhein - University of Applied Sciences, faculty of Textile- and Clothing Technology, Mönchengladbach) and for Fashion and Design Management (Akademie Mode Design, Faculty Design of Hochschule Fresenius - University of Applied Sciences, Hamburg).

PROF. DIPL.-DES. MARION ELLWANGER-MOHR

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Ellwanger-Mohr studied Textile Design at the Academy of Fine Arts/Hamburg. She has worked for renowned brands as a freelance textile designer. 2004-09 Professor in Smart Textile Design at the University of Borås/ Sweden. Besides the development of new master's degree programs in Textile and Fashion Design, her research focussed on smart textiles. 2008-2010 visiting professor at the Academy of Fine Arts/Hamburg.

Her work centred on artistic reorientation implying unusual techniques and materials and their implementation in Textile Design. Since 2010 professor in Textile Design at the University Niederrhein/Mönchengladbach. Her research centers on sustainable Textile Design and soft material research.

DIPL.-ING. FELIX DIENER

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In his studio in Düsseldorf, Felix Diener develops textiles that are on the cutting edge between Design and Technology. This leads to materials, curtains, carpets and accessories for producers, editors, brands and leading designers. In addition he works under his own name for various brands.

The search for innovative structures, surfaces and compositions determine his working method. Inspiring products develop out of the creative interactions of material and production technology.

With his interdisciplinary studio, he is not only active in creative textile products but as well in coordinating collections, identities, exhibitions and stand building. More over he is a permanent member of the Trendtable Messe Frankfurt with trend forecasting and consulting.

DIPL.-ING. THOMAS HILL

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Thomas Hill is founder of 3hills, a trend office based in Cologne and member of the Trendboard at DMI (German Fashion Institute). With nearly 25 years of experience in developing fashion collections, in leading positions, with references like Cinque, JOOP!, Marc O'Polo and René Lezard, he is today Creative Consultant amongst others for ColorDigital (Communication of colour information between the real and digital world) and lecturer at the AMD (Akademie Mode and Design, Düsseldorf) for Productmanagement and Fashion.

DIPL.-DES. ANNA KOCH

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Anna Koch teaches design basics and textile design at the Niederrhein University of Applied Sciences, department of textile and clothing technology, Design-Engineer. The focus of her work lies in creative, experimental design and the stimulation of innovative processes and innovative methods.

She worked in various areas (textile editor, agency, weaving mill, fabric printing company) in the textile industry, gaining a broad base of skills and knowledge.

Teaching positions followed at the University of Art, Design and Popular Music, Freiburg and at the University of Education, Freiburg. Since 2016 she has been a dedicated and active member of the team of lecturers at the Niederrhein University of Applied Sciences

PROF. DIPL.-ING. ANDREA RIESCHEL

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Andrea Rieschel teaches "Dessinatur" and industrial product development focused on fabrics at Hochschule Niederrhein – University of Applied Sciences. She studied textile design at Fachbereich Textil- und Bekleidungstechnik at Hochschule and works in textile industry for women's and men's clothing and home textiles.

She is a specialist for woven cloth construction and fabric dobby design. A combination of fundamental acknowledges in weaving and design is important for the final product.

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Mirja Kreuziger is working as a research assistant at the Niederrhein University of Applied Science, Faculty of Textile and Clothing Technology in Mönchengladbach.

After her bachelor's degree in 2010 Mirja Kreuziger worked as a freelancer for several brands like FRAAS, C&A and Creative Design Industries while pursuing the master program at the Niederrhein University of Applied Science. In 2012 she started lecturing at her alma mater while working at the Research Institute for Textile and Clothing and writing her master's thesis. She graduated from the master program in 2015.

Besides her lecturing in the area of digital textile design, she is currently working on her doctoral thesis in the field of 3D-printing.

PROF. STA. DIPL.-DES. RENATE SCHMITT

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Former artist and freelance mediator. Studied visual communication and design at Hochschule Trier. In addition, studied art education and art history at the Johannes Gutenberg University, Mainz. Since 1977 International Exhibition Activity.

Focused on teaching and imperial research as well as, the creative process in combination with theory and practice. Also, the development of suitable methods to simplify the creative learning process - in teaching at the Academy for Fine Art, Trier.

In 1991 chose „Reactivating of the Creative Capability“, freelance staff member of the company „Quality Management and Technology, Wiesbaden“, further teaching at the Hochschule Trier and Mainz, as well at the Johannes Gutenberg University in Mainz.

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Anne Schwarz-Pfeiffer is a professor for clothing technologies at Niederrhein University of Applied Sciences since January 2014. Her main focus is the development of functional clothing, the production of technical textiles, intercultural management and smart textiles. In her current research, she is involved in the development of textile-based sensors, illuminated textiles and medical textiles.

After completing her studies in Moenchengladbach and at various universities in Europe, she did her PhD in the field of Smart Textiles at Ghent University (Belgium). Subsequently, she joined the Institute for Textile Technology at RWTH Aachen University before returning to Moenchengladbach. Her work has been published in over 50 scientific publications.

CARL TILLESSEN

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Carl Tillessen is a trend analyst, consultant, author, designer and teacher for fashion. He lives and works in Berlin and Cologne.

In 25 years he got to know the fashion sector from all angles: fashion and business, employed and independent, handicraft and industry, buying and sales, wholesale and retail, online and brick&mortar, front row and backstage, theory and lots and lots of practice.

University degree in history of arts and in business administration, management and creative direction of his own brand, trend analyst and business consultant... It's always about bearing in mind the creative as well as the commercial side.

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Karin Stark is Professor of Fashion Design since 1996 at the Niederrhein University of Applied Science, Faculty of Textile and Clothing Technology in Mönchengladbach. She teaches basics of fashion design up to collection development in women's fashion and children's wear. She graduated at the Art School Berlin Weißensee. Her professional experiences are based on industrial fashion design (women's fashion) and trend research (trend agency, Paris).

Karin Stark is the leader of the study direction Design-Engineer Fashion. This study direction is a hybrid study program, which includes design and engineering technology in approximately equal proportions.

PROF. DR. PHIL. DIPL.-DES. MARINA-ELENA WACHS

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Marina-Elena Wachs is Professor of Theory of Design (Hochschule Niederrhein - University of Applied Sciences), master tailor, tailor directress and Industrial-Designer. She graduate at Braunschweig University of Art ("Material Mind – New Materials in Design, Art and Architecture", 2007, Dr. Kovac, Hamburg).

Marina Wachs is an internationally working authoress with focus on fields for applied sciences in sustainable and smart design as well as sciences in design in an interdisciplinary way.

She works as consultant for companies and architects, in cooperation with museums and foundations.

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The Berlin born designer Friederike von Wedel-Parlow is the founder of the „Beneficial Design Institute“. The Institute focusses on quality, beauty and innovation for a positive cultural change in our world, with a positive effect for people, environment and business; closely collaborating with EPEA and other industry partners. As professor for “Sustainable Design Strategies“, she built and lead the Master's program "Sustainability in Fashion" at ESMOD Berlin University of Arts. She has entrepreneurial and educational experience owning her own fashion brand as well as assisting Vivienne Westwood at University of the Arts Berlin.

Friederike is a requested speaker and workshop leader, consulting expert for “Fashion for Good”, Amsterdam, mentor at "Swiss Cultural Entrepreneurship Challenge" and jury member “Bundespreis Ecodesign”.

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Kerstin Zöll is Professor for Clothing Manufacturing Technology at the Faculty of Textile and Clothing Technology at Niederrhein University of Applied Sciences in Mönchengladbach.

She studied mechanical engineering at TU Dresden and RWTH Aachen. During her work for a machine manufacturer of automated sewing solutions she worked in various projects dealing with new strategies for textile assembling along the supply chain. She applied and deepened this knowledge during her external PhD at Aachen University.

The focus of her work at Niederrhein University is on topics related to joining and manufacturing and their associated machinery.

PROF. DIPL.-DES. JUTTA WIEDEMANN

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Jutta Wiedemann studied at the Hamburg University of Applied Sciences fashion design. She completed her studies afterwards with the extended pattern course at Müller & Sohn. Several years she worked for the high-end suit supplier REGENT, and later on at the women department at HESSnatur. Subsequently she gained experience beside menswear also in Corporate Fashion while working as a freelancer for many other brands.

Since 2004 she teaches as professor for fashion design menswear. Key aspects are the application spectrum of the industrial design processes in the future. Therefore she works beside vector graphics also with 3D programs in processing fashion design and retail space planning.

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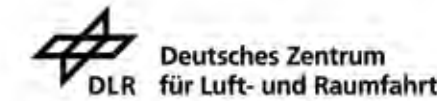


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