PERFORMANCEDAYS
FUNCTIONAL FABRIC FAIR

Trends in functional fabrics

kick off Winter 2019/20

Presented by Performance Days/Ulrike Arlt

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Keywords at a glance

FUNCTION: Sustainability is a must

FASHION: Natural fibers with lots of function

JURYS PICK/FOCUS TOPIC: Thermal Technologies

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Sustainability

- Recycled fibers: PES, PA, wool
- Bio based man made fibers: from coffee grounds, castor beans etc
- Natural fibers: Tencel, (merino) wool, working as functional fibers as well
- Recyclable fabrics, biodegradable fabrics
- Saving water by dope dying methods

Jurys Pick: Thermal Technologies

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This seasons Jury's Pick is called "Thermal Technologies From Fibre to Smart Textiles"

Heat performance of fabrics is defined by measured values:

In order to compare the heat output of fabrics, there are various value measurement systems. Common parametres: CLO, Rct and Rc value.

Ideal temperature comes via passive heat retention or active heat production:

Sports clothing must provide good thermal comfort in any situation.

It has to keep the athlete warm but not too hot (temperature management) because the human body likes a comfortable and stable temperature. Passive heat comes through heat retention in the textile, active heat can be supplied via heating elements.

Jurys Pick:
Thermal Technologies

Five solutions to provide passive heat via heat retention:

- By air traps in fleece or pile, i.e. brushed surfaces
- By air traps in spacer and three-layer insulation constructions
- By additives in yarns and fibers, or as prints – mostly active carbon
- By using PCM
- By reflective materials as metallic foils

Active heat can be supplied via heating elements.

Jurys Pick:
Passive Warmth

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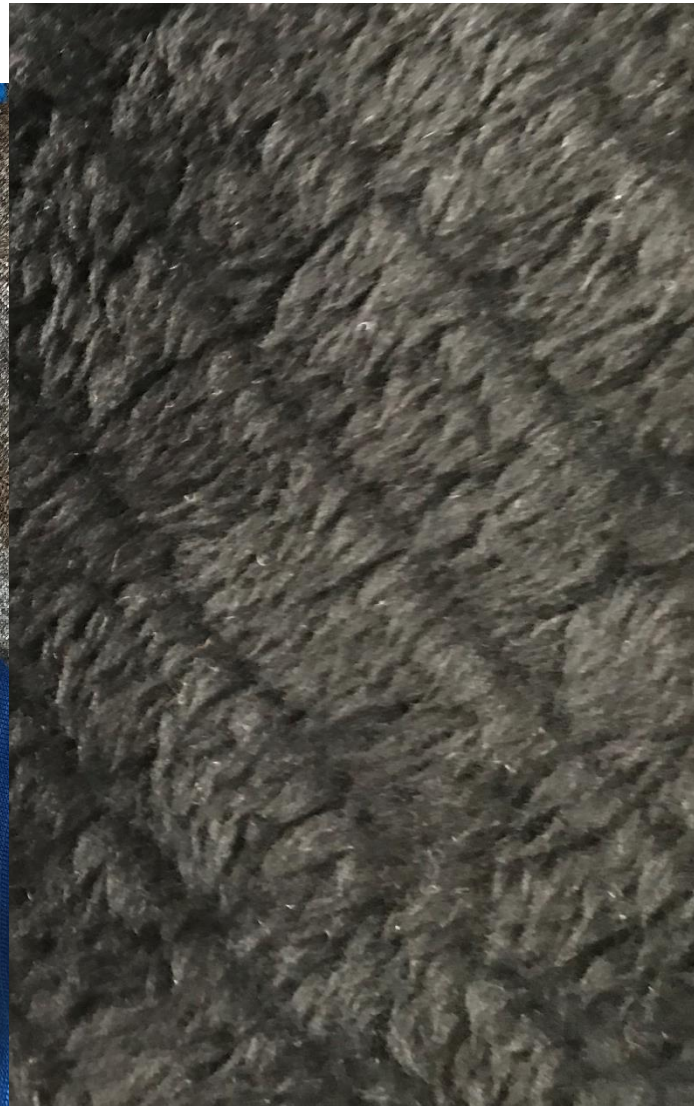

Jurys Pick:
Passive Warmth

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Passive Warmth

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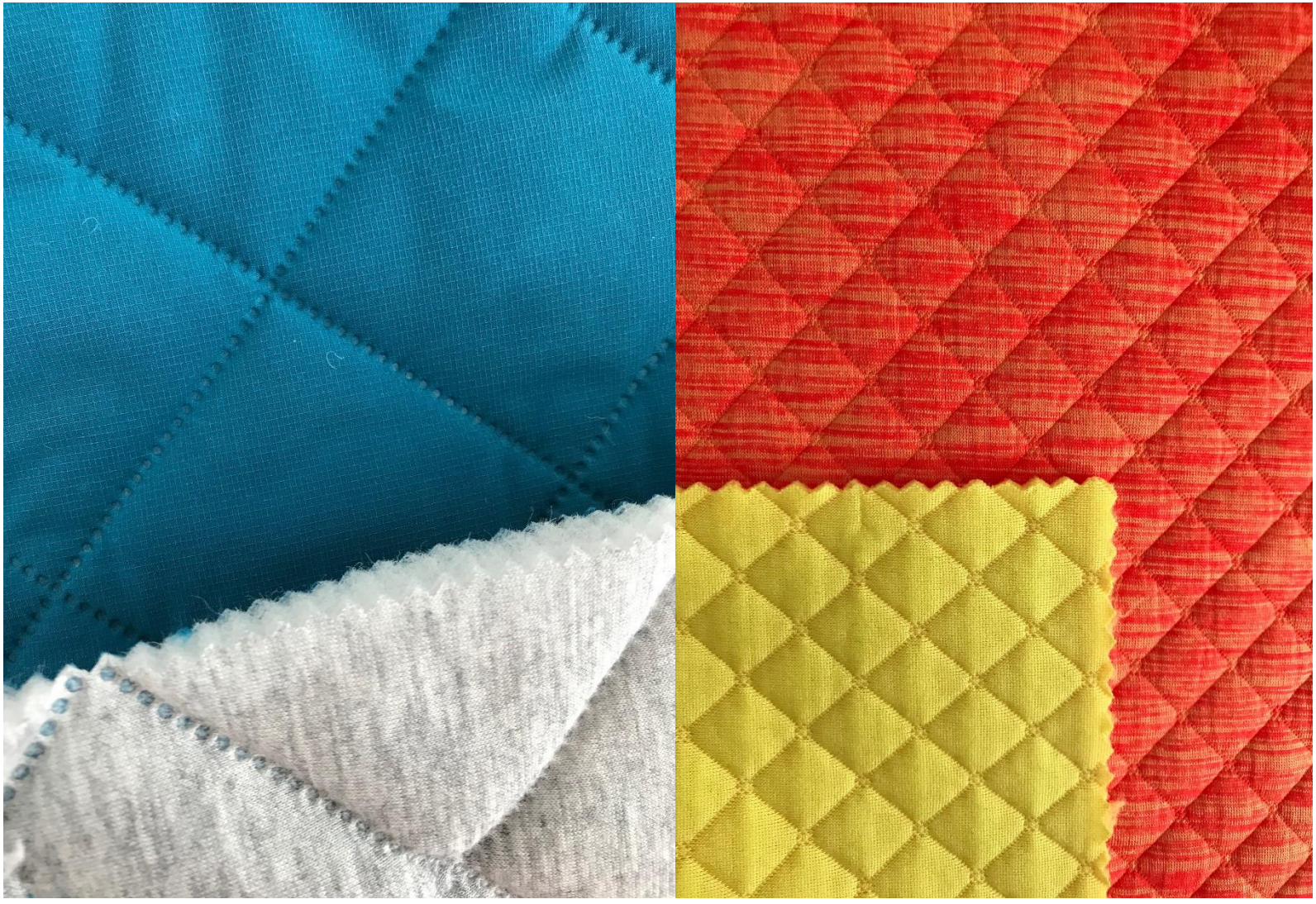

Jurys Pick:
Passive Warmth

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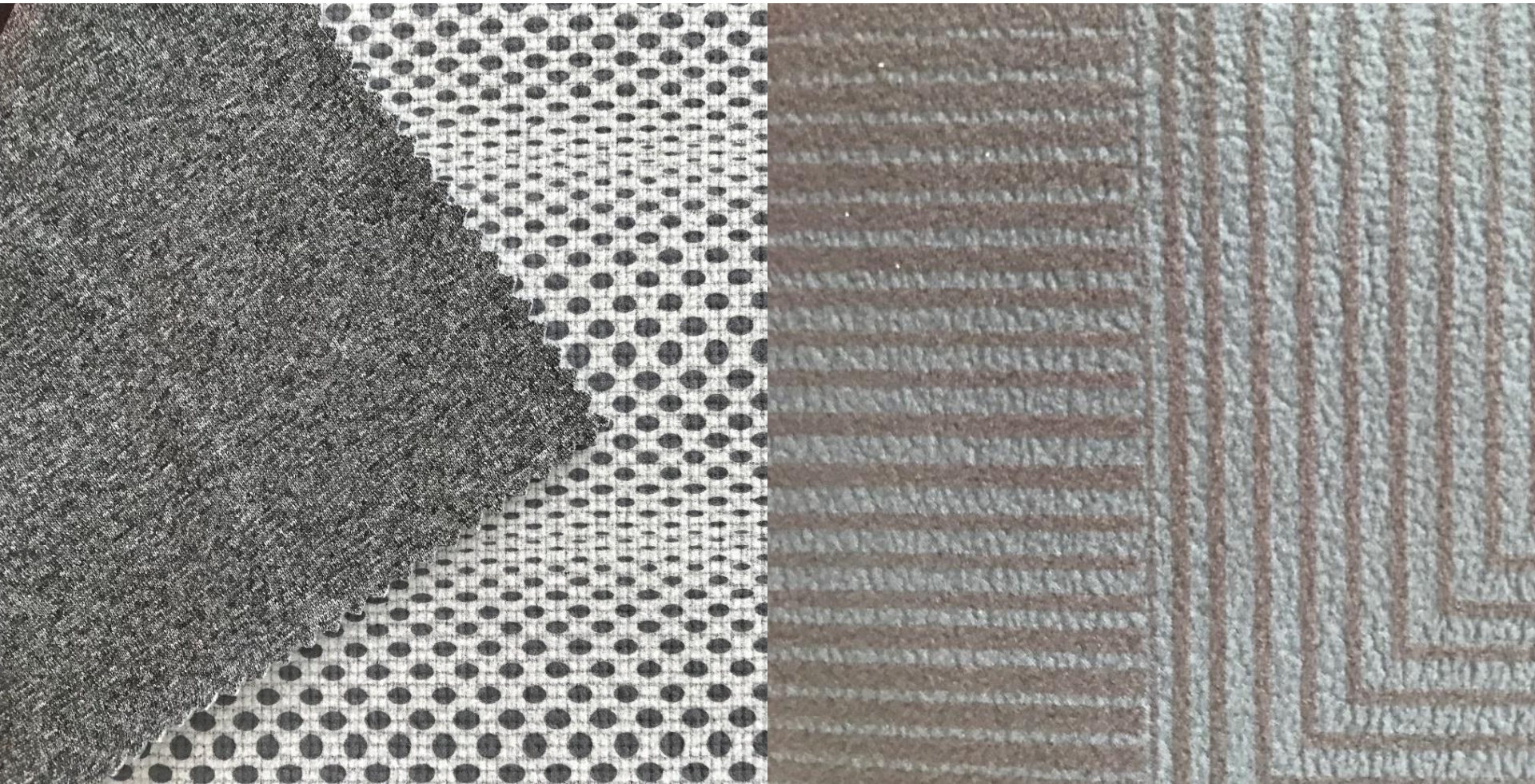

Jurys Pick:
Passive Warmth

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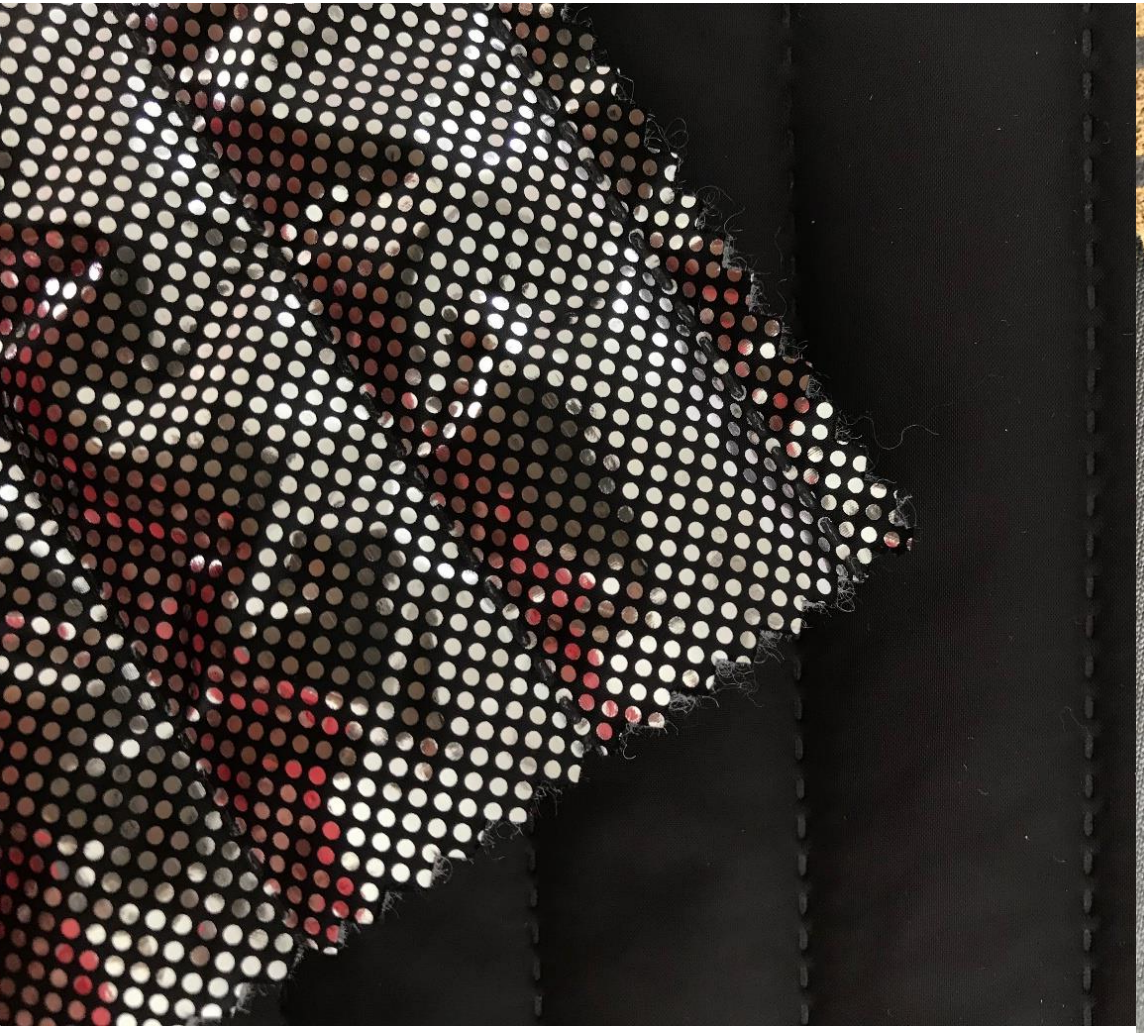

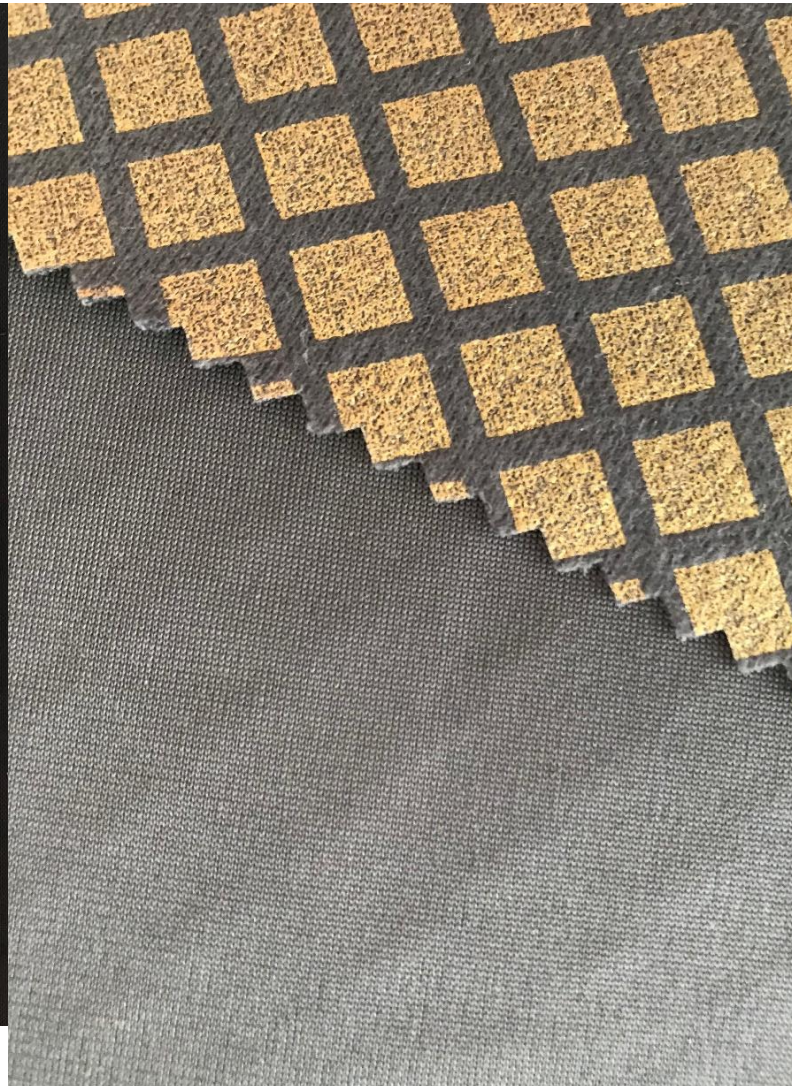

Jurys Pick:
Active Warmth

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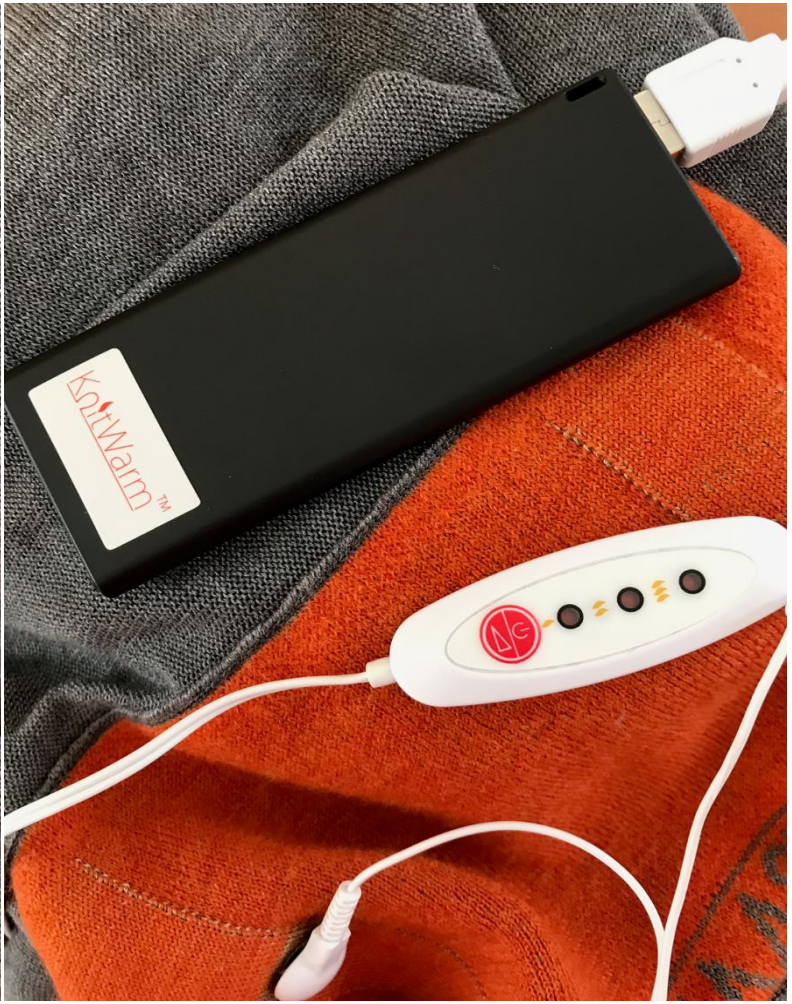

KnitWarm by Lenzing

Jurys Pick: Active Warmth

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E Soft Shell by Schoeller

- can be cut to size as required
- can be produced for sale by the meter
- with corkshell technology
- The heatable backing is manufactured by Eschler
- incorporated conductive yarns enable uniform heat
- the material can also be dyed and washed

Jurys Pick: Active Warmth

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Flying Textile Co. - iWarm 3.0

- carbon nanotube soft heating membrane
- 38-53°C intelligent warming
- soft FPC panel with a high precision sensor
- app with smart software to monitor and control temperature
- data can be sent to the user's smartphone
- personalized settings and adjustments
- soft and washable
- compatible with standard mobile power packs
- the controller is removable, washable panel

Baselayer

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Natural fibers:

- Winter feeling with wool blends – mostly merino qualities, new Tencel stories
- Other natural fibers as cotton, silk and kapok
- Two tones, knitted denim looks

Baselayer

Constructions (yarns/fabrics)

- lots of recycled yarns
- hollow fibers
- special cross-sections
- mesh
- eyelets
- jacquards

Functions (by construction or finishing)

- odor management
- quick-drying properties
- high thermal insulation
- FIR yarns (ceramic particles)

Midlayer

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- Brushed surfaces, shearling and high pile are coming back slowly
- Lots of structures on the backsides
- Natural & casual look
- Good handfeel

Midlayer

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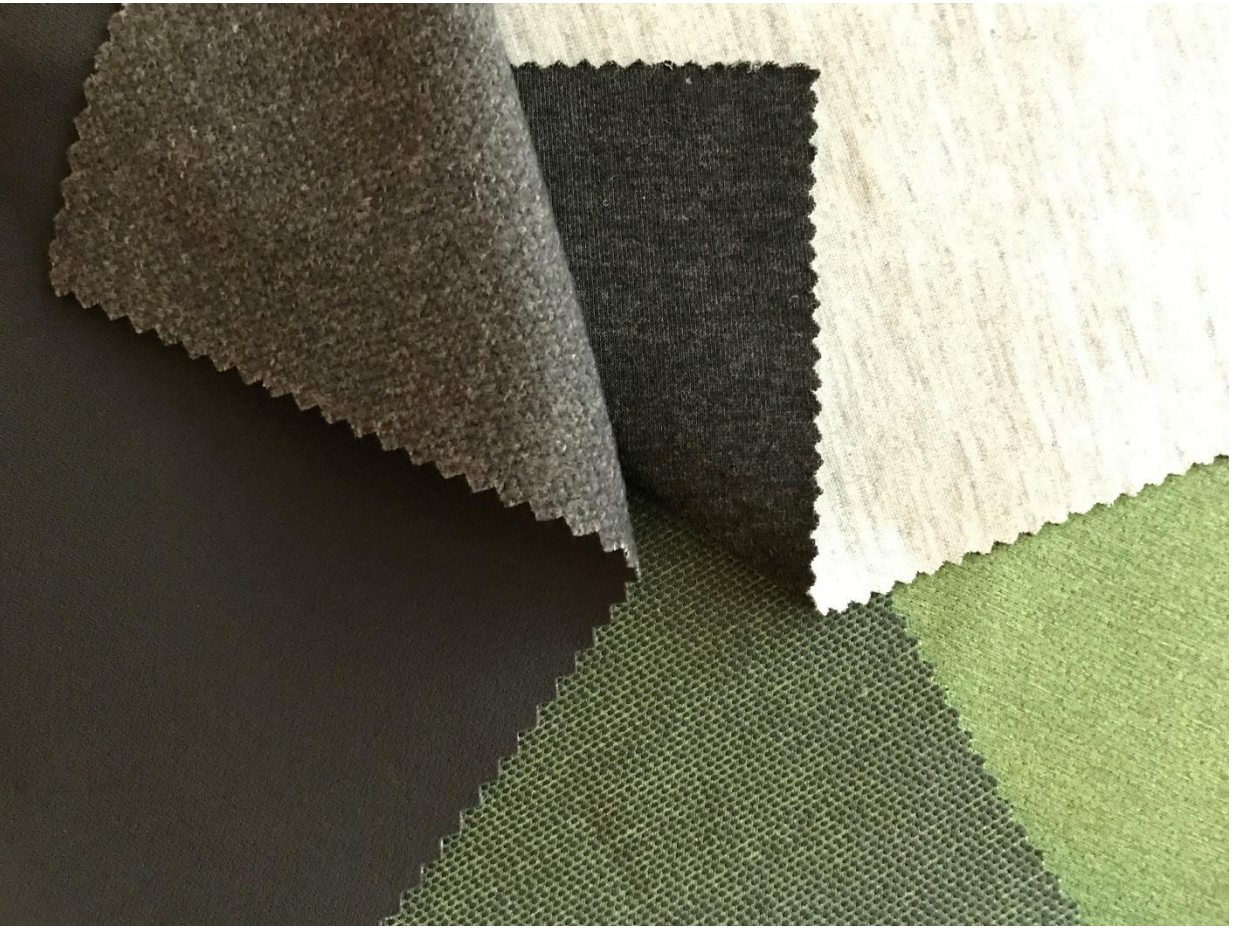
New technical stories:

- very dense fabrics – low weight & good warmth retention
- heat retention via 3-D patterns, quiltings, 3-layer constructions
- lots of recycled materials, even biodegradable fabrics

Softshell



- light
- soft
- very elastic
- highly breathable & windproof
- good water resistance
- one option: flat designs without pile or structures
- blends of merino and synthetic fibers
- casual feeling, even if the fabric is very functional
- new engineered double weaves

Softshell

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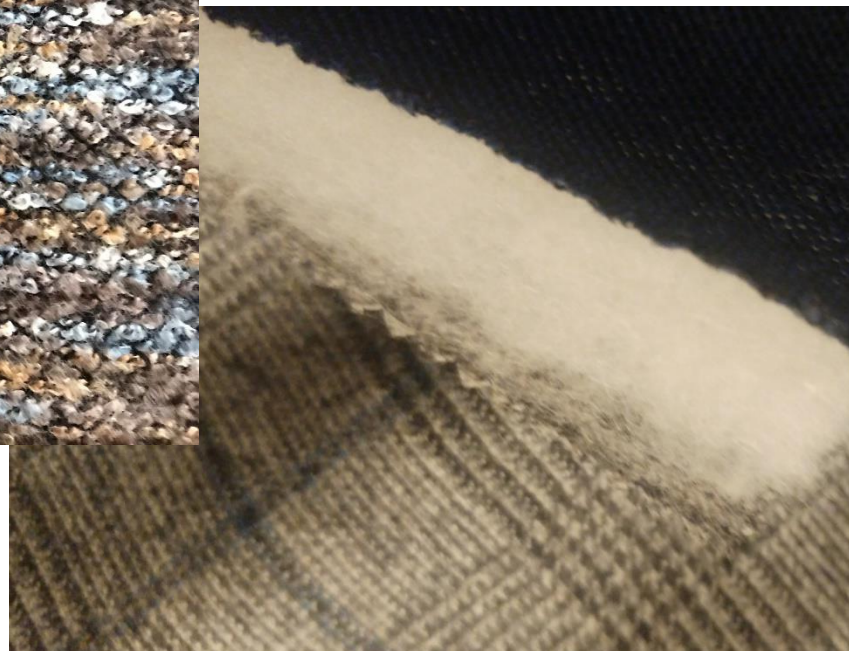
- new 3-layer constructions
- one more option: very urban and rustique looking, hand-knitted optics but highly functional



Softshell

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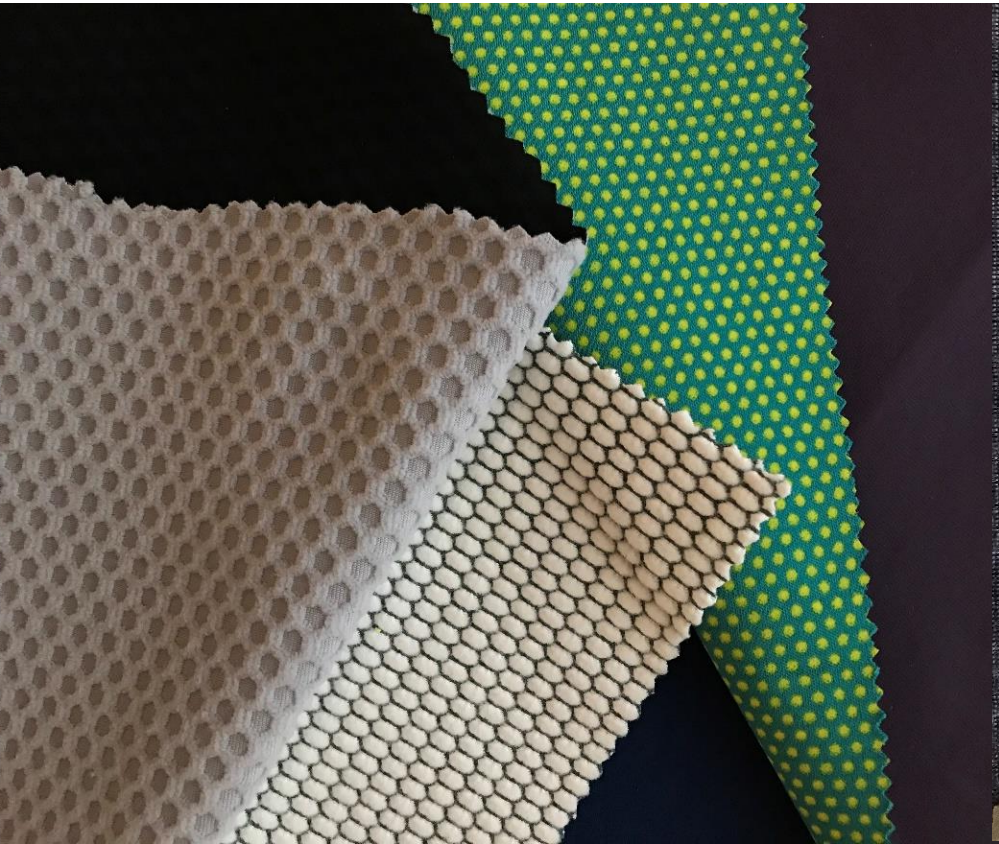
- ultrasonic quilting
- variety of backsides, different structures to store heat



2-Layer Hardshell

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- engineered, with technical structures
- 3D constructions by weaving
- high water column (hydrostatic head) up to 40K, average performance 10K/10K
- good breathability
- top function, even with recycled fabrics
- bio-based chemical fibers (coffee grounds, castor bean)

2-Layer Hardshell

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- casual, urban looks
- cotton feel & cotton inside
- Lots of bluesign certified fabrics
- solvent free laminations
- fluocarbon free DWR
- Cradle-to-cradle solutions

2-Layer Hardshell

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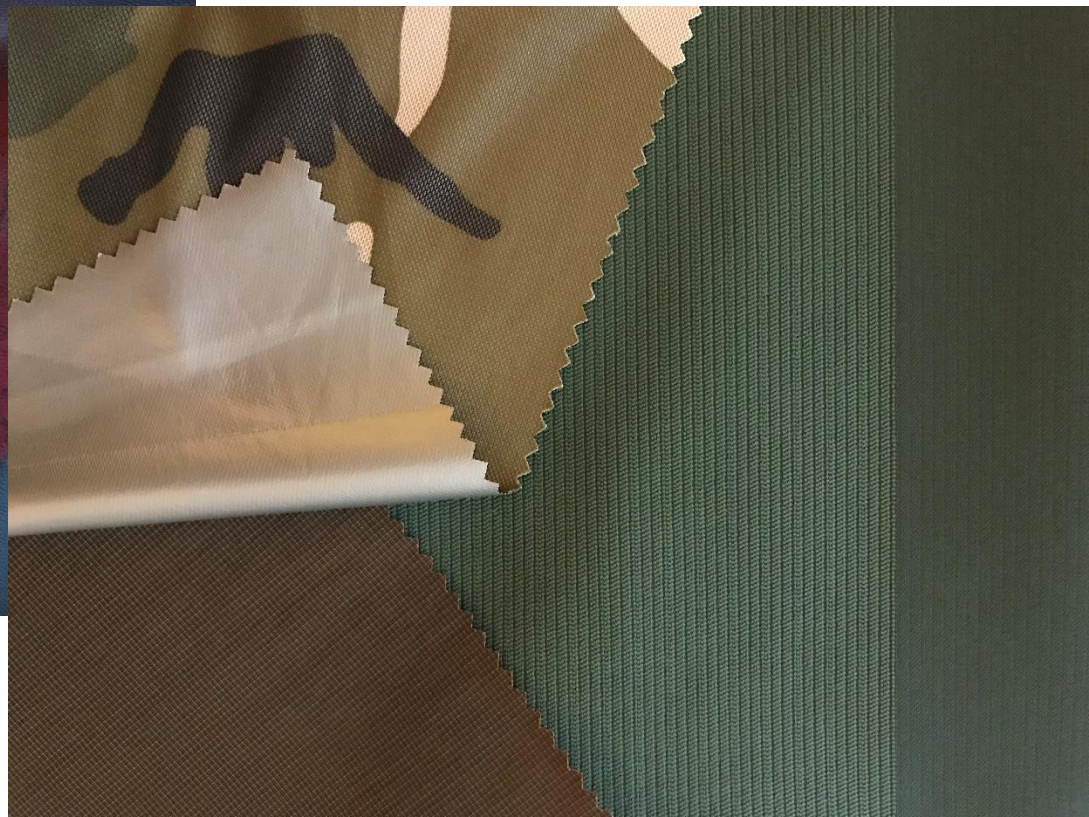
- casual, urban looks
- fashionable structures, digital prints, but good functional properties



3-Layer

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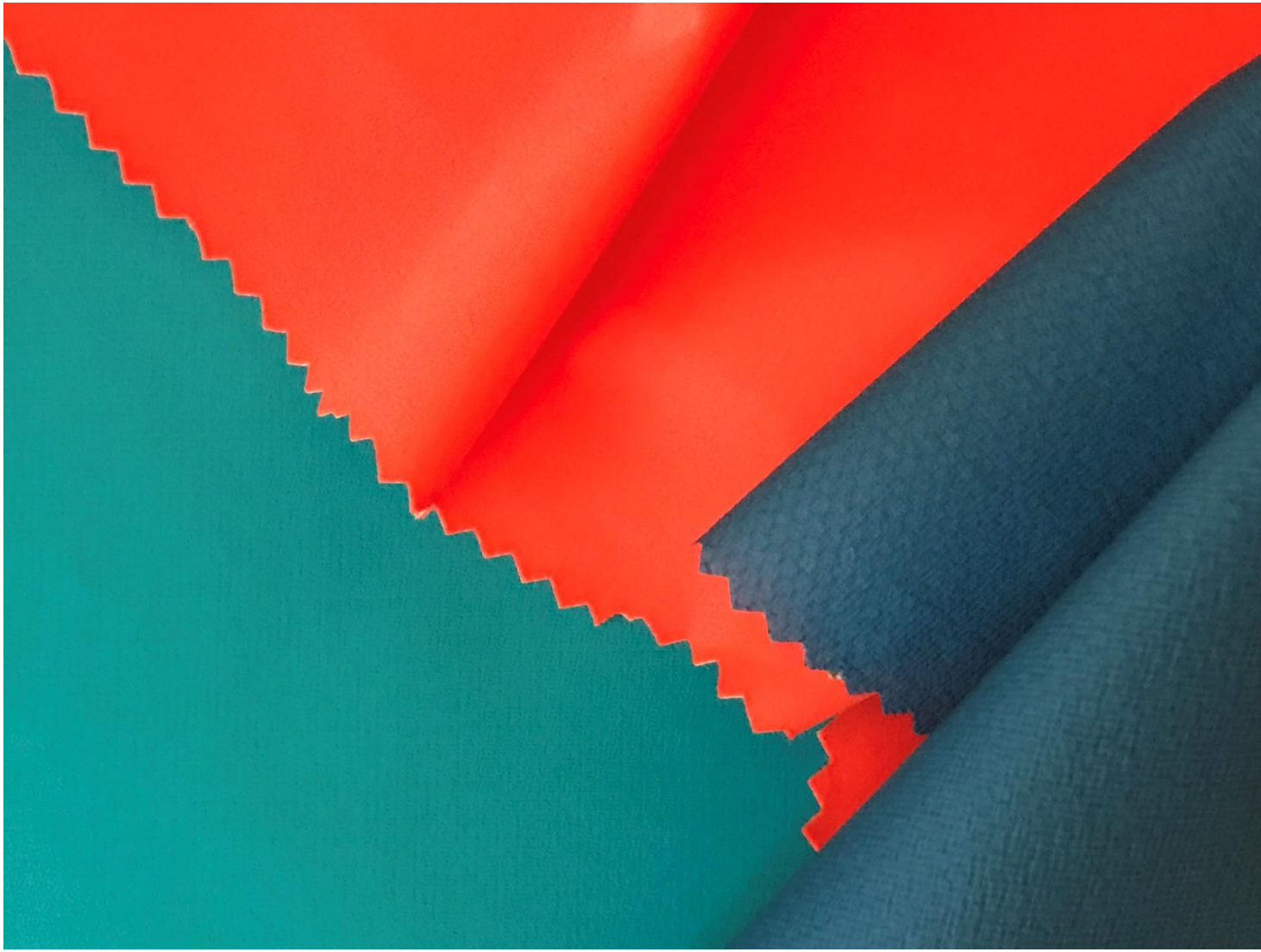
- soft and as elastic as softshell fabrics, but tapeable
- highly functional with cosy handfeel
- watercolumn and breathability up to 50K/60K



3-Layer

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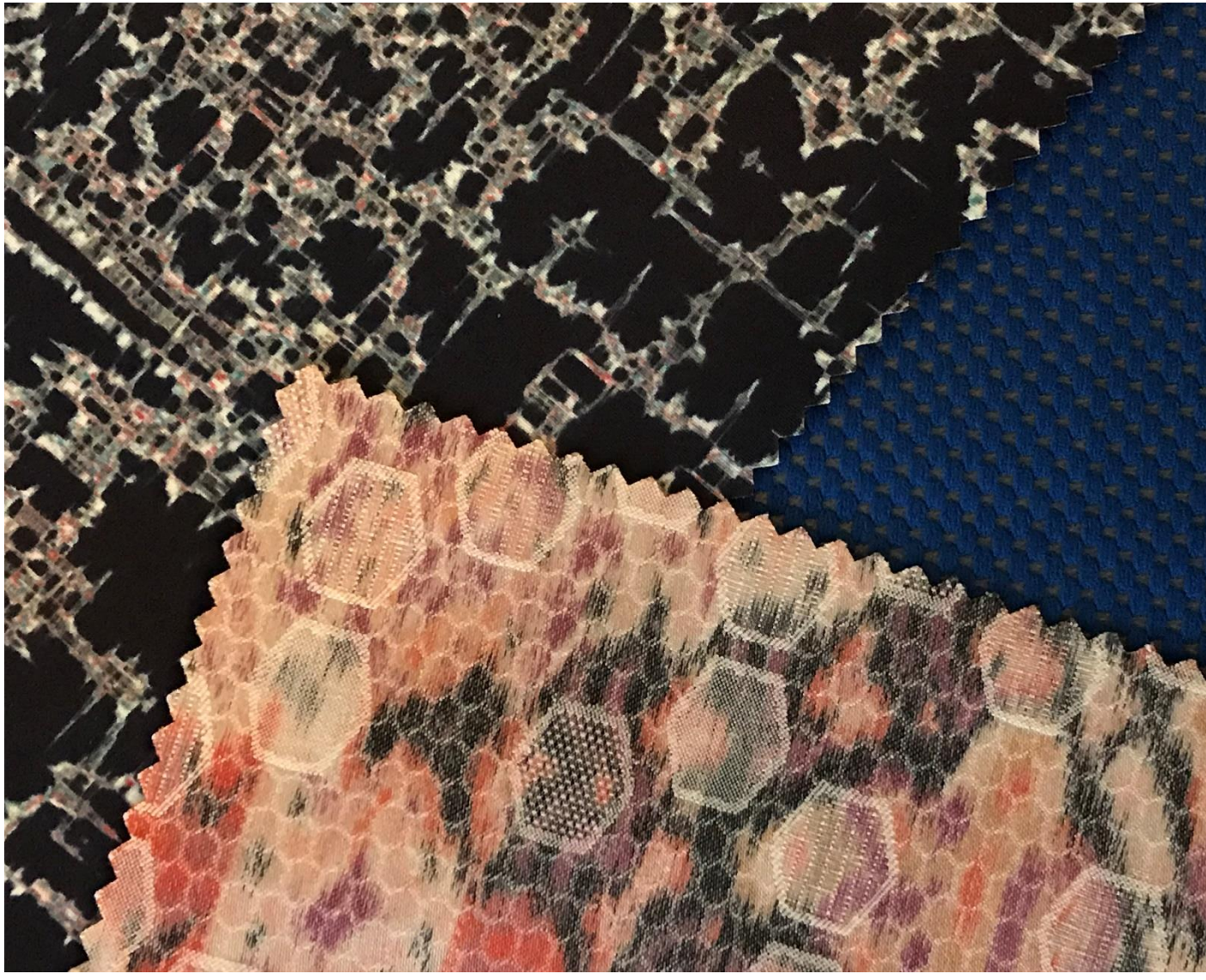
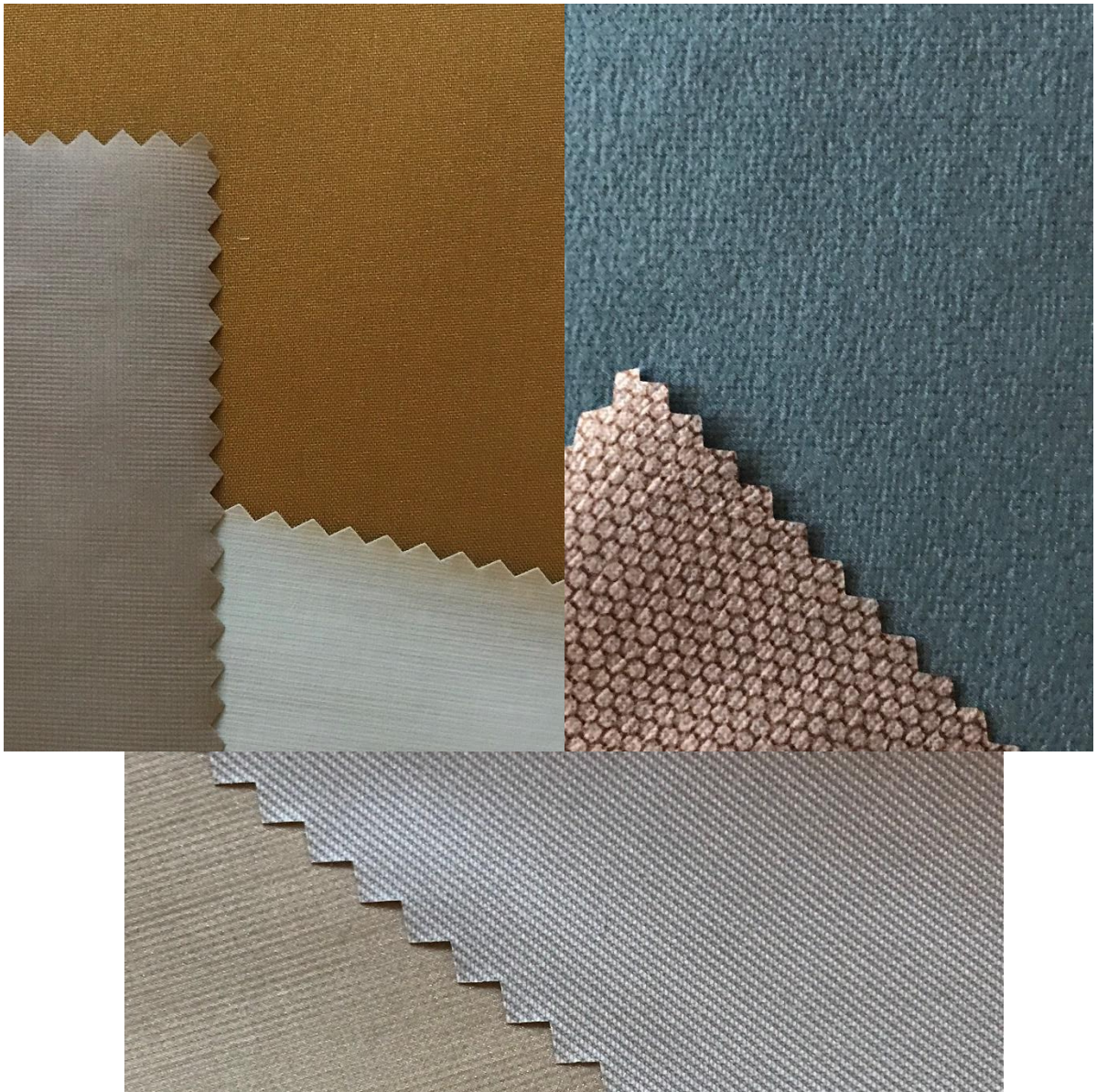
- good handfeel, soft like non bonded fabrics, but fully tapeable
- 2.5 layers with printed 3D backing
- structures and embossings
- fancy digital prints



3-Layer



- some membranes are only 7 microns thin
- very light, some fabrics below 100 g/m²
- Nylon yarns with special cross sections
- top functional laminates with fabrics made of recycled PES – the entire laminate is recyclable again

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High Density & Lightweight

- top function below 100 g/m², average around 50 g/m²
- up to 20K water column (hydrostatic head) and 40K breathability
- surprisingly durable and tear resistant

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High Density & Lightweight

- lots of fashionable looks for casual styles
- transfer prints
- semi-transparent downproof fabrics

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High Density & Lightweight

- highly elastic
- high density
- fluocarbon free
- lots of pocket weaves, even with knitted inner sides, new nonwoven downbag

Shirts & Pants

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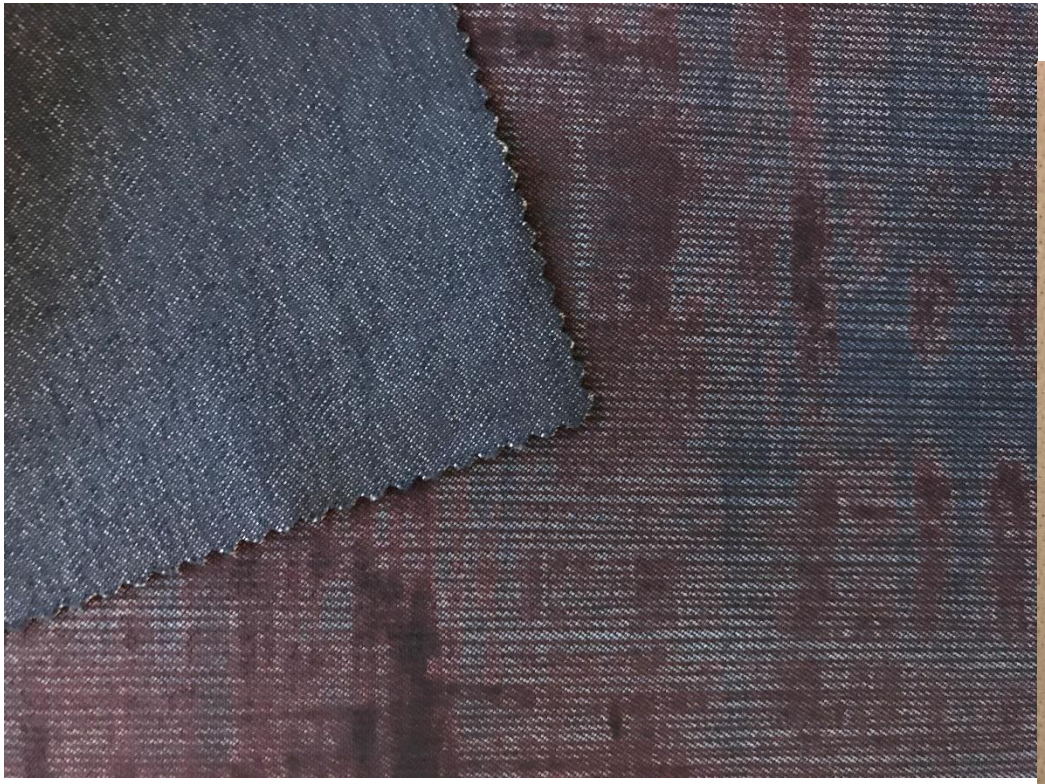

Pants fabrics:

- highly elastic, great double weaves
- Some compressive fabrics for all types of outdoor sports
- natural colors
- elastic denims, knitted or woven

Shirts & Pants

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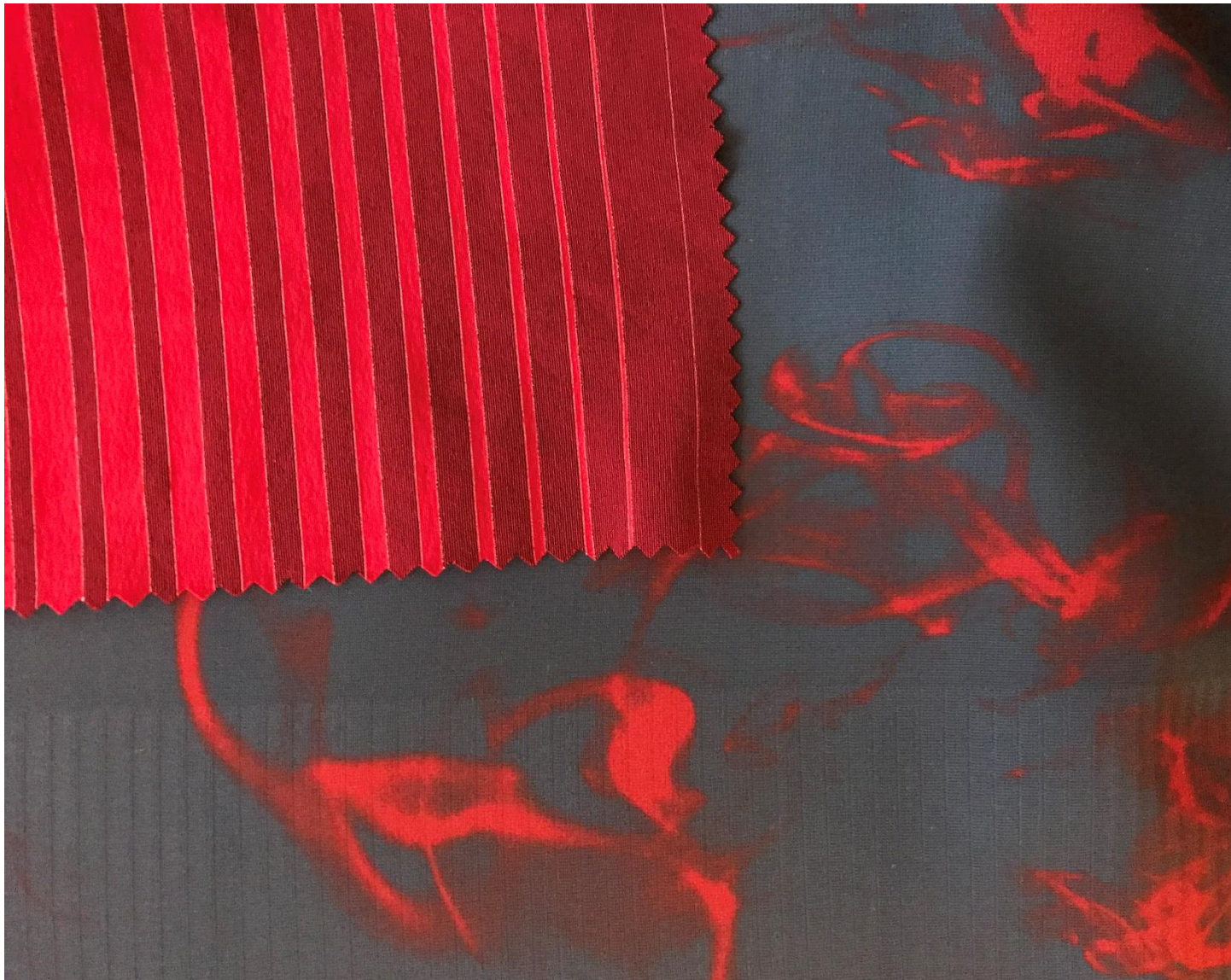
- hidden functions for the shirt fabrics
- good moisture management
- recycled PES
- natural fibers like kapok, linen, tencel
- biodegradable fabrics



Athleisure

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Urban sportswear – from office to gym:

- great diversity of looks
- natural look as well as funky and modern look
- geometrical patterns by print or jacquard
- cupro is coming back

Athleisure

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- great eco-stories
- mostly sweater and shirt qualities
- function from nature: organic CO, Tencel, wool, kapok
- natural looks & soft handfeel

Athleisure

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- not suited for high intense sports
- lots of natural colors and melanges
- soft, cozy, hand knitted optics

Workwear

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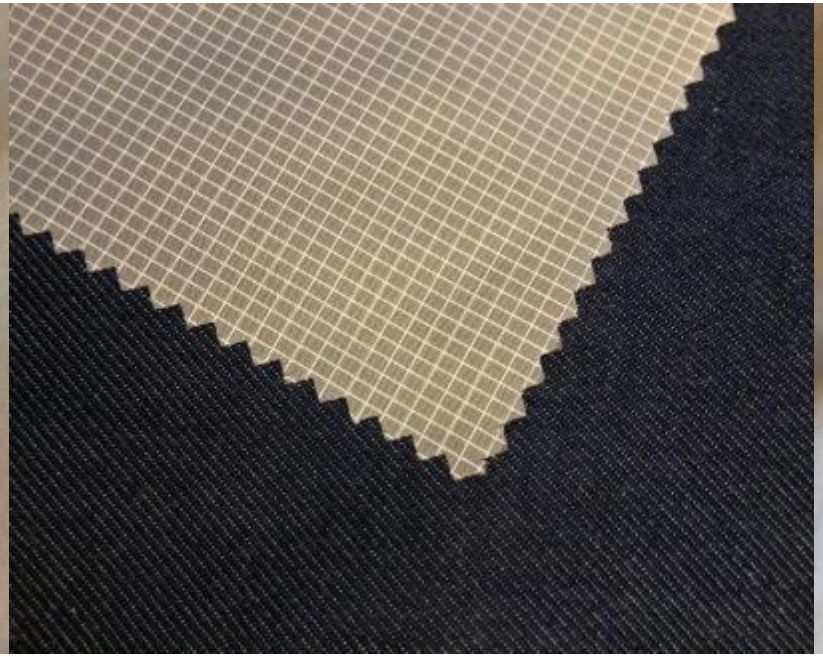
- shirts & sweaters: high vis combined with abrasion or tear resistance
- even recycled high vis fabrics
- flame retardant
- multi functional styles even for outdoor sports
- extremely rugged 3-layer fabrics with up to 1 million Martindale

Workwear



- outer fabrics and pant fabrics with Kevlar, Dyneema, or Vectran now are so light they can provide unrestricted freedom of movement
- jersey fabrics with cordura
- new reflectives (left)
- but as well soft, light and cozy qualities with special functions

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Thank you for your attention!
Please welcome Stefanie Sacherow and the ECO PERFORMANCE AWARD Winner

1050 PRODUCTS sent

PERFORMANCEDAYS
FUNCTIONAL FABRIC FAIR

+-28 items

240pcs on the TABLES

PERFORMANCEDAYS
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+0 items

133pcs on the WALL

PERFORMANCEDAYS
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-2 items

39x 100% Jury-Like

PERFORMANCEDAYS
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-11 items

ECO PERFORMANCE AWARD

„8852 M Biopile“

- probability, the very first fleece pile that does not release microplastics
- (exteriors use 100% (recycled) polyester)
- the brushed inner side of the fabric is 100% Tencel from Lenzing and is not made of polyester. Tencel is a biodegradable fibre – even in salt water!
- if the tiniest of fleece particles separate when washed, they decompose in less than a year -> more sustainable solution

VISIT the winner:

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PONTETORTO

PONTETORTO S.P.A.

booth no. **216+218**

production location:
IT

request appointment

24/7 company profile