FREY
ZEIN

15. JAHRESTAGUNG · FV TBSL · INNOVATION

TEXTILE ZUKUNFT NEU GEDACHT:

VON NACHHALTIGER INNOVATION ZU SKALIERBAREN NEXT GEN MATERIALS

Jan Karlsson · CEO & Founder
FreyZein Next Gen Textiles FlexCo

6. OKTOBER 2026 ASIA RESORT LINSBERG · BAD ERLACH

FACHVERBAND TEXTIL-, BEKLEIDUNGS-, SCHUH- UND LEDERINDUSTRIE

FREY
ZEIN

FOUNDED: 2020

HEADQUARTER: GRAZ; STYRIA

FROM LABRATORY TO SCALE UP

WHAT I WILL TALK ABOUT.

Fourexamplesofhowwemovenatural performancetextilesfromresearchtoward application.

01 **FreyZein’s Innovation**

Our approach to natural, high-performance textiles.

02 **BioFibreLoop Research Project**

Bio-based,recyclable functional textiles for outdoor, active and workwear.

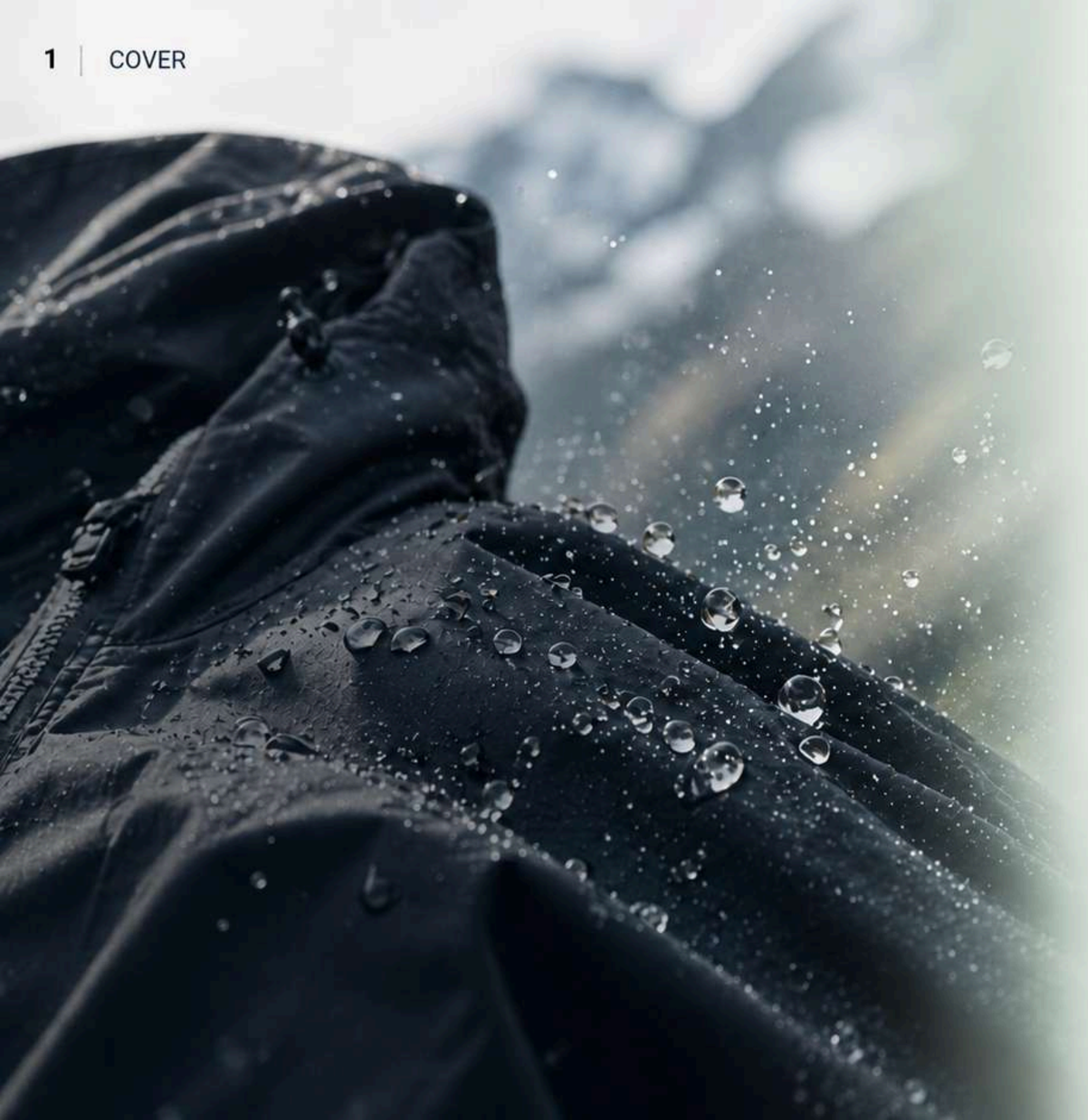
03 **MicroTex · JOANNEUM RESEARCH**

Biomimetic coatings for eco-friendly functional textiles-without petrochemicals and PFAS.

04 **Non-Woven · Aerocellulose**

Application development with a large international customer, together with ESA Austria.

Confidential



FREY
ZEIN

NEXT-GEN TEXTILES

THE NATURAL EVOLUTION OF PERFORMANCE WEAR

The lightest naturals performance laminates for weather protection.

NATURAL AESTHETICS

EXCEPTIONAL LIGHTNESS

EXTREMELY BREATHABLE

Confidential

PERFORMANCE HAS ALWAYS COME WITH A TRADE-OFF.

WEIGHT.
STIFFNESS.
SYNTHETICS.



Confidential

FREYZEIN ENABLES NATURAL TEXTILES TO PERFORM.

We give lightweight natural textiles technical performance — without compromising their character.

WEATHER PROTECTION
Reliable performance in real conditions.

EXTREME BREATHABILITY
Engineered moisture regulation.

LIGHT, SOFT, NATURAL
Preserved handfeel, comfort and aesthetics.

BIOBASED. PFAS-FREE.
No fossil inputs. No compromise.



Confidential

From breakthrough today to platform leadership.

Our 100% cellulose-based technologies unlock a new generation of high-performance textiles — built for nature, designed for the future.

NOW
2026



S9
Water-repellent & breathable

High-performance, PFAS-free solution for everyday and active outerwear.

NEXT
2028



SX
Fully waterproof & breathable

Fully waterproof and breathable — expanding performance into active outdoor lifestyle and urban adventure.

FUTURE
2030+



S-Platform
A platform of 100% cellulose performance textiles

Confidential

Redefining the standard of performance materials.

The only solution that unites nature, performance and aesthetics - without compromise.

	FREYZEIN	GORE	dimpora®	amphico	ventile® SINCE 1943
MEMBRANE TECHNOLOGY	✓	✓	✓	✓	✗
EXTREMELY BREATHABLE	✓	✓	✓	✓	✓
WATERPROOF High performance	S9* ✗ | SX** ✓	✓	✓	✓	✗
NATURAL Cellulose Layers	✓	✗	✗	✗	✓
BI-CIRCULAR® Natural monomaterial designed for recycling	✓	✗	✗	✗	✗
PRICE	€€	€€€	€€	€€	€€€

Confidential

Validated by global brands.

Paid pilots. Active development programs & strategic partnerships.

30+
GLOBAL BRANDS ENGAGED

Across premium fashion, outdoor & workwear.

5
INDUSTRIAL PARTNERS

Co-developing S9 & SX at scale.

5+
RESEARCH CENTERS IN EUROPE

Running 7M € Horizon Europe project.

MATERIAL SALES, PAID PILOTS & PROTOTYPING

MAMMUT | BURBERRY | BOSS HUGO BOSS | KERING

Material Sales, Paid Pilots & Prototyping

Paid Pilots and Prototyping: Commercial Supply Contracts for next season products.

Strong pull from the market. | €65K+ PAID PILOTS

Confidential

Dual revenue model.

Built for scale. Owned by FreyZein.

Two complementary streams. One scalable platform powering the next generation of performance wear.

01 MATERIAL SALES



OPTION 1

FREYZEIN® MATERIAL LIBRARY

Use our qualified range of selected fabrics.



OPTION 2

CUSTOM DEVELOPMENT

Work with our team to create you own FreyZein® construction.

FreyZein® fabrics sold to brands.

NOW

S9 / SX (2028)

Material Sales

02 MILL LICENSING



- Base licensing fee
- Licensing based on meters

2028+

S9 + SX

Licensing Agreements

Confidential

From Pilot Production to Global Scale.

Asset-light. Partner-driven. Built for any supply chain.

NOW

2026 – 2028



Strategic Lamination Partner

2–3 qualified lamination partners
(First: Europe Then: Asia)

Europe / Asia-ready

FUTURE

2028+



Licensed Mill Network

Technology licensed to mills globally.
Partners manufacture locally for their markets.
FreyZein earns per meter –
without owning production.

Global

Confidential

Built at the molecular level. Hard to copy. Easy to prove.

FreyZein's 100% cellulose technologies combine material science, nanotechnology, and proprietary processes creating performance that **cannot be matched with conventional chemistry.**

PROPRIETARY CHEMISTRY

Unique nanocellulose formulations and surface engineering developed over years of R&D.

PROPRIETARY PROCESSES

Scalable processes that cannot be reverse engineered without our know-how.

OUR IP PORTFOLIO

1x
PATENT PENDING

3x
PATENTABLE TECHNOLOGIES
2x Material | 1x Process

3x
TRADEMARKS REGISTERED

FUNDED BY THE AUSTRIAN GOVERNMENT FOR GREENIP
Strategic support for protecting our innovations.

Confidential

A team bridging science, industry and scale.



Jan Karlsson
CEO & Co-Founder

Scaled a consumer brand with 35M+ products sold.



Sabrina Stacherl
CFO & Co-Founder

Financial strategy & sustainable scaling.



Johannes Ebert
Head of Product & Business Dev

Deep domain expertise & industry access.



Dr. Solmaz Ghanbarnezhad
Senior Scientist

Nanocellulose & advanced materials.



Clemens Wolf
Head of Industrialization

Driving scale-up & industrial execution from lab to market.



Dr. Wolfgang Zitz
Strategic Advisor

Materials innovation & scaling strategy.

From lab to global scale.

€4M+
Non-dilutive funding secured from EU & Austrian government.

€65K+
Paid pilots closed with leading brands.

20+ YEARS
Combined experience in materials, textiles and scaling ventures.

LAB → MARKET
Proven track record from research and IP creation to industrial adoption.

Manufacturing Transformation Through Advanced Nano Materials



biofibreloop

Pioneering Sustainable Clothing



biofibreloop

Circular performance. Inspired by nature.

A Horizon Europe project developing recyclable, bio-based technical textiles with bio-inspired, non-toxic functionalisation.

European Commission

Horizon Europe 2021-2027

€6.5M

13 PARTNERS

9

COUNTRIES

3.5 YRS

HORIZON EUROPE

Grant Agreement No. 101130603

From research to real-world outdoor wear.

FreyZein brings the end-use perspective into the consortium - validating how new cellulosic functionalisation performs in an actual outdoor application.

01 VALIDATE

Cellulosic material functionalisation

02 DEMONSTRATE

Outdoor-wear application

03 TRANSLATE

Example garments + capsule collection

04 EXPLOIT

Commercialisation expertise

THE PROJECT TARGET

Industrial demonstration at TRL 7 and a path to market entry by 2027.

IF YOU WANT TO TOUCH REAL SAMPLES

GET IN TOUCH WITH US AFTERWARDS

JOANNEUM RESEARCH MATERIALS

x

FREY ZEIN

FREY ZEIN

MICROTEX

Bio-inspiredfunctional textiles.

A new class of ecological performance textiles using cellulose and **biomimetic microstructured coatings - without petrochemicals and without PFAS.**







FFG AUSTRIAN RESEARCH PROMOTION AGENCY

BRIDGE PROJECT

2024 - 2027 36 MONTHS

COORDINATOR

JOANNEUM RESEARCH

PROJECT PARTNER

FREYZEIN

Fundingamount is not publishedonthe public FFG project page.

FREY ZEIN

FROM LOTUS LEAF TO PERFORMANCE TEXTILE.

Biomimetic surfaces use microstructure to increase hydrophobicity and water repellency.

THE TARGET

Superior outdoor performance.
Petrochemical-free chemistry.
Designed for circularity.

01 **CELLULOSE FIRST**

Organic cellulose textiles replace polyester / polyamide-based solutions.

02 **BIO-INSPIRED COATINGS**

Microstructured surfaces mimic lotus-leaf roughness to enhance water repellency.

03 **FREYZEIN ROLE**

Develop & characterise hydrophobic coatings based on cellulose derivatives.

04 **VALIDATE FOR USE**

Testbreathability,mechanicalstability, washability, recyclability and repair.

FUNCTIONAL CELLULOSE-BASED FIBRES WITH AEROCELLULOSE USED FOR INSULATION MATERIALS REPLACING SYNTHETIC TEXTILES AND ANIMAL BASED DOWN

FREYZEIN | MATERIAL INNOVATION

esa
space solutions
Austria













FREY® ZEIN

THANK YOU.

Let’s build the future of performance materials — together.

Invest@FreyZein.com
www.FreyZein.com

aws austria wirtschafts service

Funded by the European Union