

## **World Bio Markets**

10-11 MAY 2023, FOKKER TERMINAL, THE HAGUE

Successfully Scaling-up
Biofabrication of Silk Proteins



## AMSilk at a glance: a leader in biofabricated silk protein materials



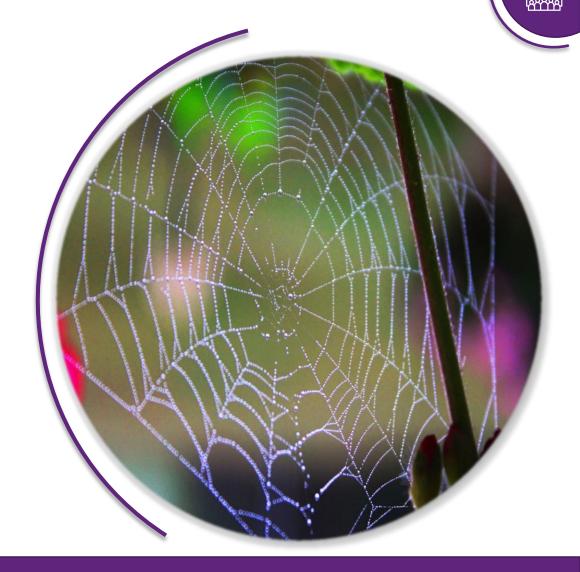






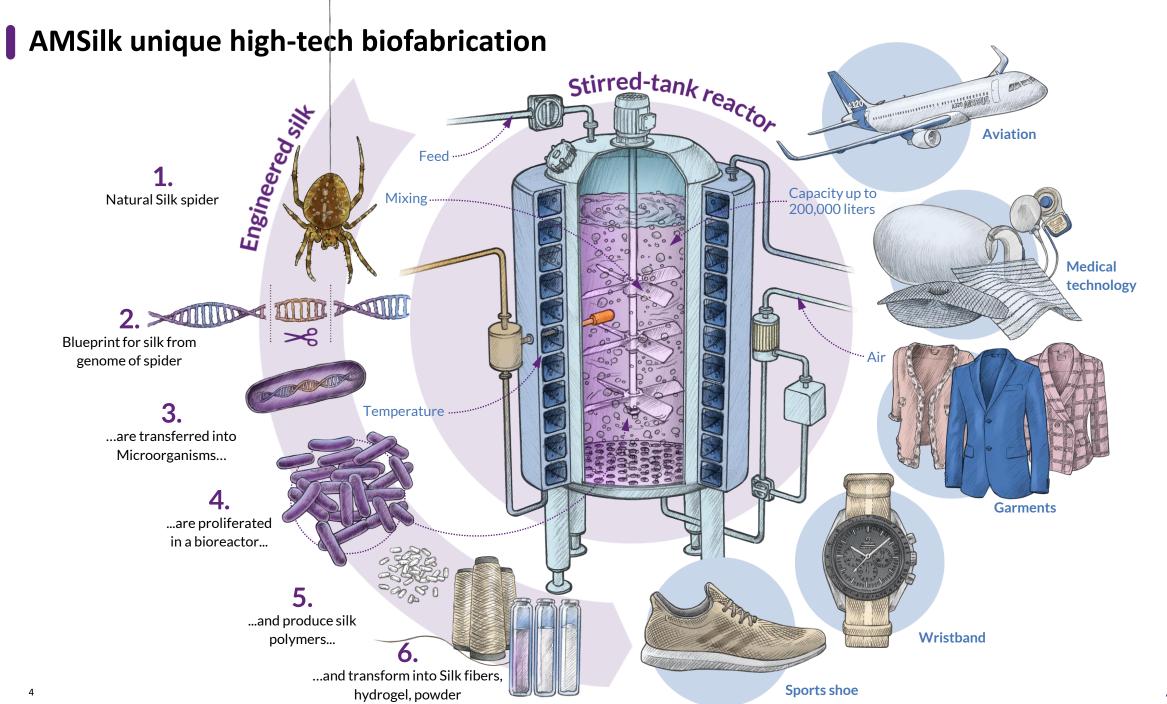
### AMSilk believes that nature has all the answers

- The founders of AMSilk started with the idea to make the spider thread available in industrial quantities
- Spider silk is one of the most fascinating materials on earth:
  - ✓ Incredibly light and thin
  - ✓ Durable two and a half times stronger than steel
  - √ Highly elastic
  - ✓ Heat-resistant
  - ✓ Biocompatible- always used for medical purpose
  - ✓ Moisture management: absorbs up to 35% humidity



Complex molecular structure and unique properties make spider silk a holy grail material sciences

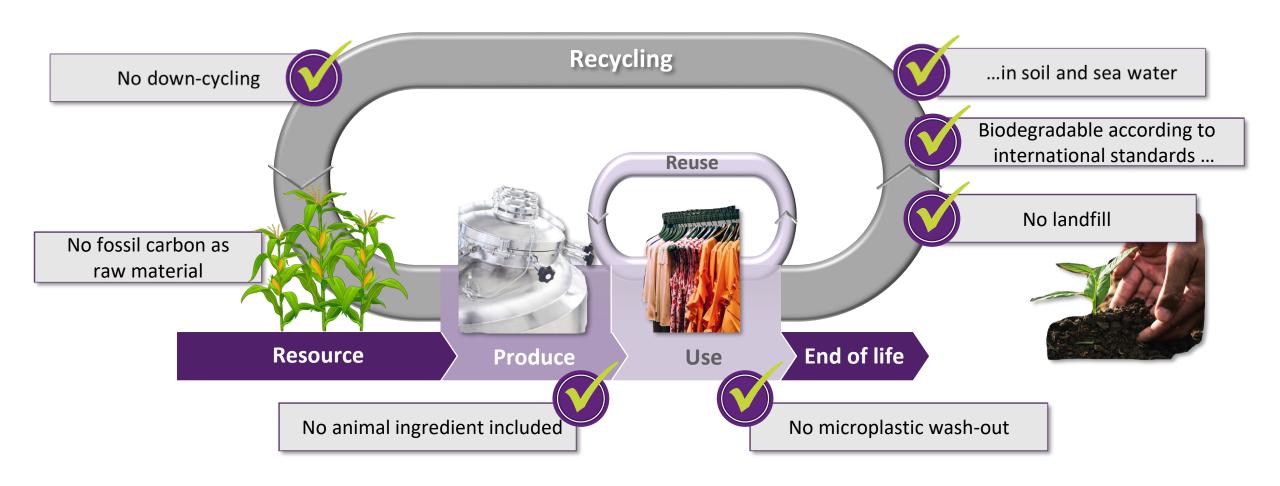






## AMSilk's proteins are the only material known that can tick all boxes





Our bio-fabricated silk proteins solve the world's challenges



### AMSilk successful trajectory towards growth









Series C funding



2017

shoe made with Biosteel®

fiber together with adidas



Collaboration with world's leading premium brands



80+ **Employees** 



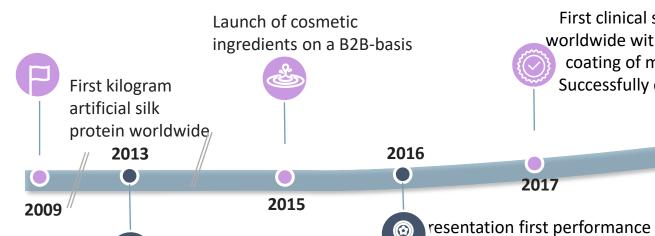
**Industrial scale** partners











First Biosteel®technical

fiber prototype

First clinical study in humans worldwide with a proteinaceous coating of medical devices. Successfully completed 2021 2021



Collaboration agreements signed with leading premium brands

2023

2022



Series C: Expansion of shareholder base with world leading investors

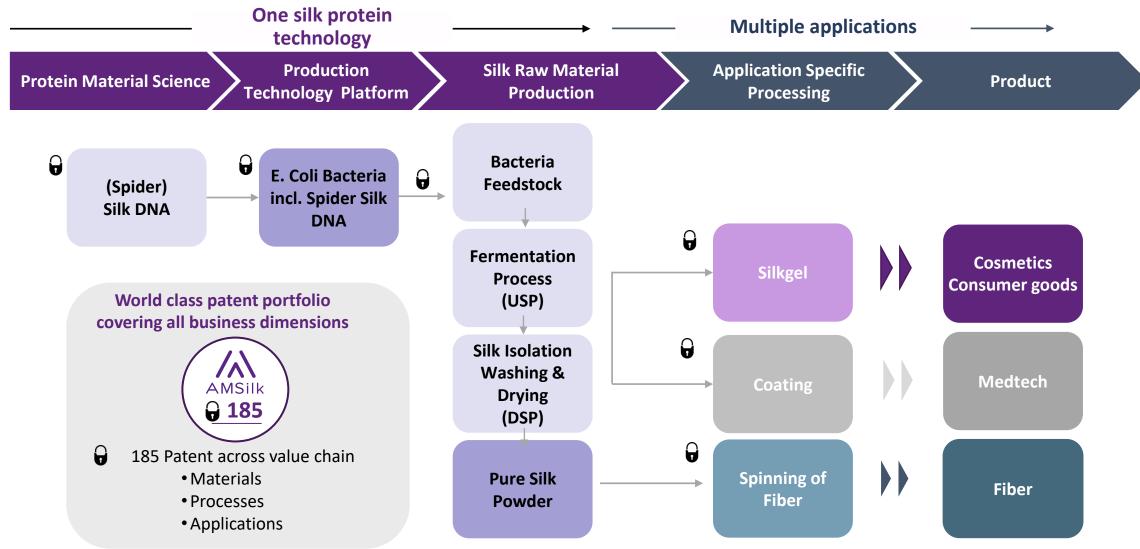


First multi ton protein fermentation campaign completed



## AMSilk's silk protein technology is delivering a broad range of end applications







## **AMSilk turns man-made proteins into silk formulations**

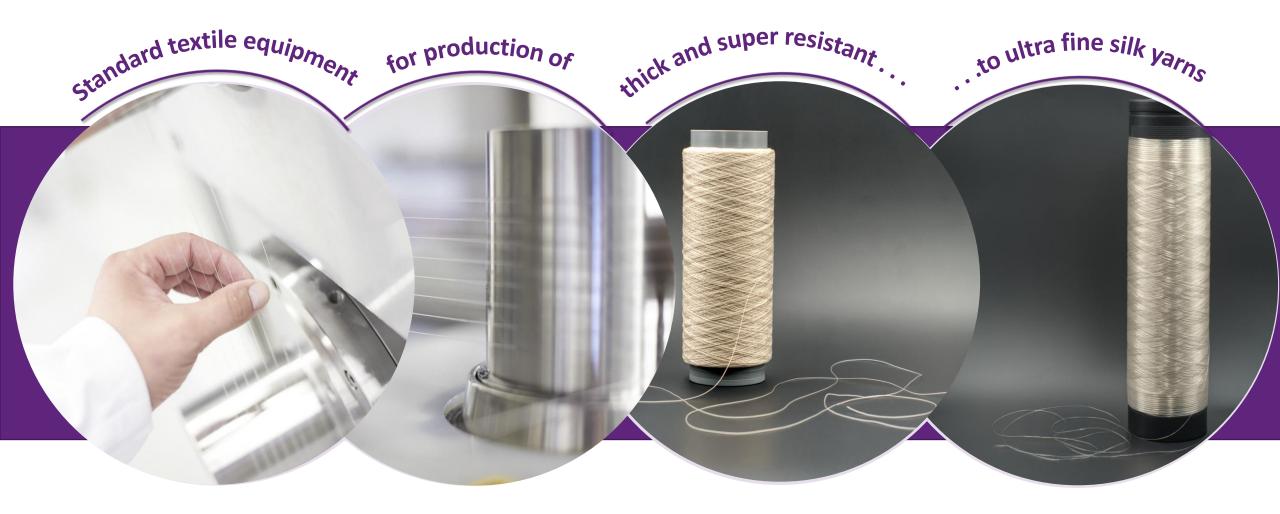






## Silk formulations are converted into industrial fibers and yarns







# Cosmetics – Givaudan since 2020 brought more than 100 consumer products based on AMSilk's spider silk technology to the market

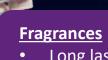




#### **Hair care**

- Silky shine & touch
- Volume effect
- Anti-splitting
- Repair





- Long lasting effect
- Fixation effect
- Encapsulation

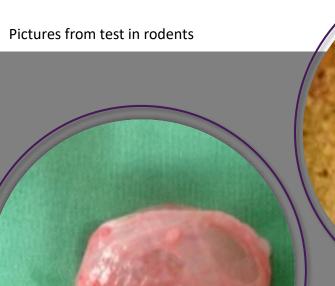
#### **Skin care**

- Breathable protection
- Second skin effect
- Prevent bacterial adhesion



Medtech – silk coating can reduce post surgery complications. Safety of the medical device is proven in lab tests, animal tests and successfully clinical study in





Left: Uncoated implant with

tissue adherence

Above: thick capsule formation significant around implant site





Preventing biofilm



Reduced capsula fibrosis



Reduced inflamation



AMSilk offers unbelievable broad fiber performance characteristics from Biosteel to Ultrafine to deliver benefit to our customers in numerous products





#### **Accessories**

- Biosteel long life
- Silky hand feeling
- Skin friendly
- Plastic free
- Hightech fascination



#### **Luxury Textiles**

- Finer than mulberry silkConsistent quality
- Exclusive
- Care Washable
- Cruelty free vegan
- Supply safety





 Biosteel light and strong

adidas

- Wear comfort
- Moisture managing
- No microplastics
- Recycable

#### **Mobility**

- Green Luxury
- Reliable and durable
- Clean (bacteriostatic)
- Petroleum free



## Proof of industrial large-scale protein production in tons/years



#### Start-up



10 kg

**Industrial feasability** 



1000 kg 10 kg

**Industrial scale** 



**Global production** 



> 50,000 tons

Breakthrough invention, best in class IP portfolio

**Scouting across industries** 

2015 - 2021

Scale-up partners





2022 - 2025



**Expansion outside of Europe** 

2026 ff

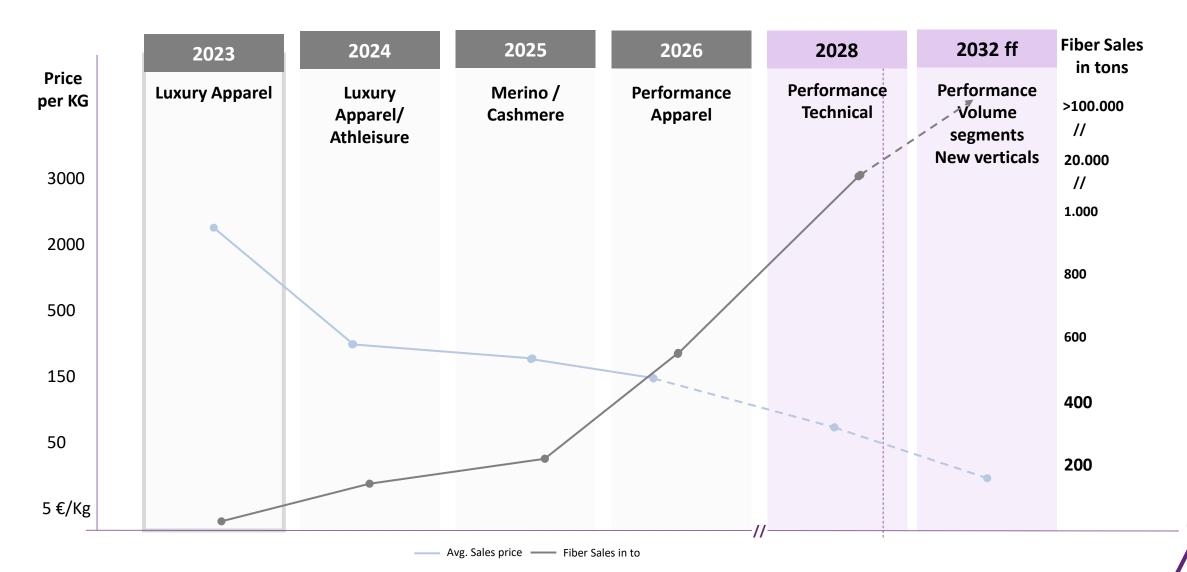


2008 - 2014

## AMSilk scale up: - initial focus on luxury market supports profitability – Win with technology creates competitiveness into volume markets

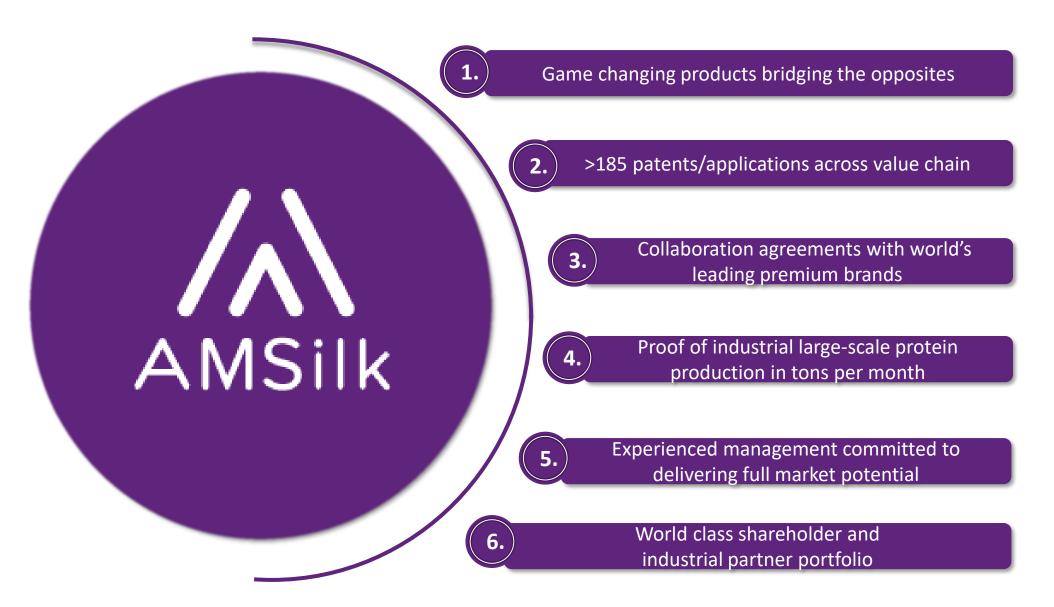


**AMSilk** 



## AMSilk story in a nutshell









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AMSilk GmbH Anna-Sigmund-Str. 1-3 82061 Neuried / Munich tel. +49 89 5795393-0 info@amsilk.com





Making smart biotech materials for everday life

