



POLYSCOPE  
fresh thinking, great products

SMA INNOVATIONS

**DISCOVERING SYNERGIES IN MATERIAL DEVELOPMENTS**

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## **Our intend**

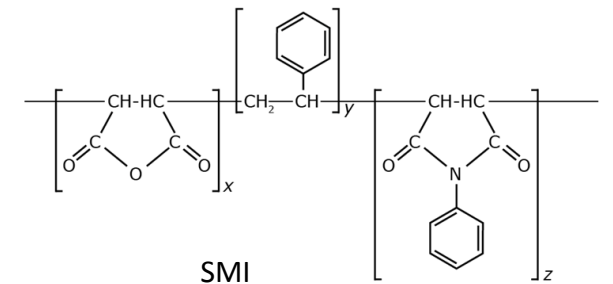
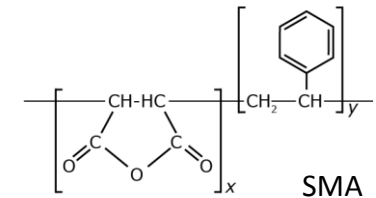
**CONVERT OUR PASSION FOR SMA  
INTO MEANINGFUL INNOVATIONS  
TOGETHER WITH OUR CUSTOMERS**

## Who we are

Polyscope is the global leader for styrene-maleic anhydride (SMA) copolymers and derivatives. We are a technology-driven company active in the polymer- and specialty chemical industry with application leadership positions in automotive and electronics.

### Engineering plastics:

- XIRAN<sup>®</sup> SMA/ABS-GF
- XIRAN<sup>®</sup> SMA/HIPS
- XILOY<sup>™</sup> SMA/PP-GF
- XILOY<sup>™</sup> SMA/PMMA
- XILOY<sup>™</sup> SMI/PA-GF



### Other SMA products:

- XIRAN<sup>®</sup> SMA & SMI performance enhancers
- XIBOND<sup>™</sup> blend optimizers
- SMA specialty polymers

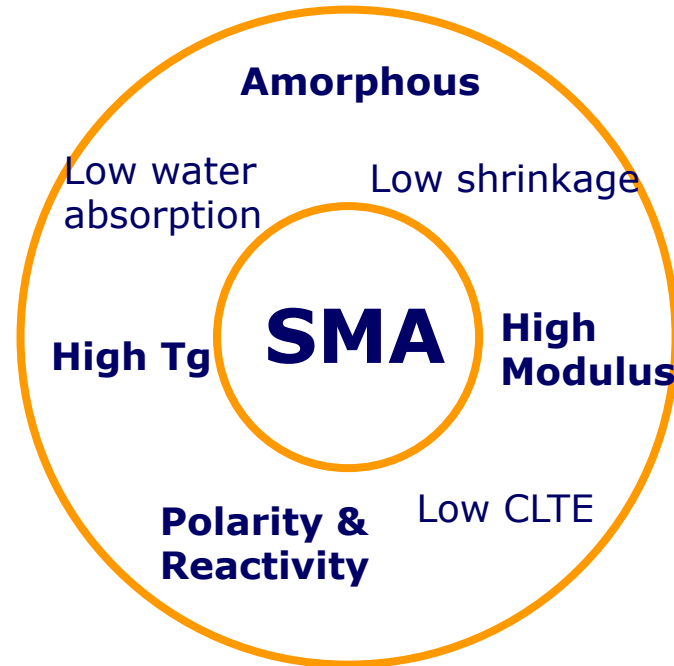
SMA = styrene/maleic anhydride

SMI = styrene/maleic anhydride/N-phenylmaleimide

# Styrene Maleic Anhydride

## Properties

**Dimensional stability**



**Functionality**

# Styrene Maleic Anhydride

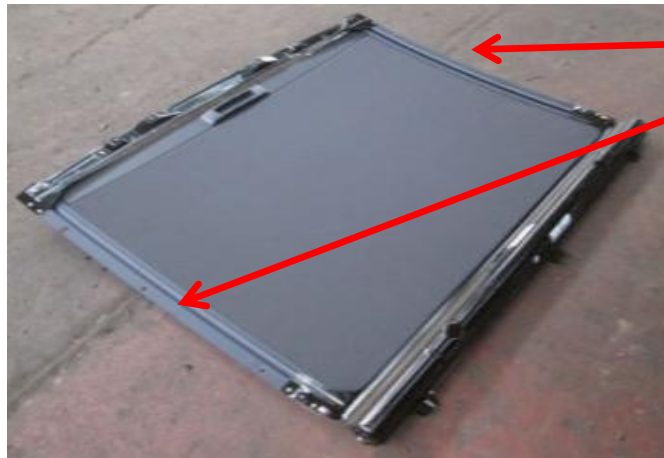
## Properties



*Pictures for discussion purposes only*

# Replacing aluminium by XIRAN® SGH30 EB in guide rails

Automotive | Transportation



Substitution of aluminium in roller blind rails by XIRAN® SGH30 EB



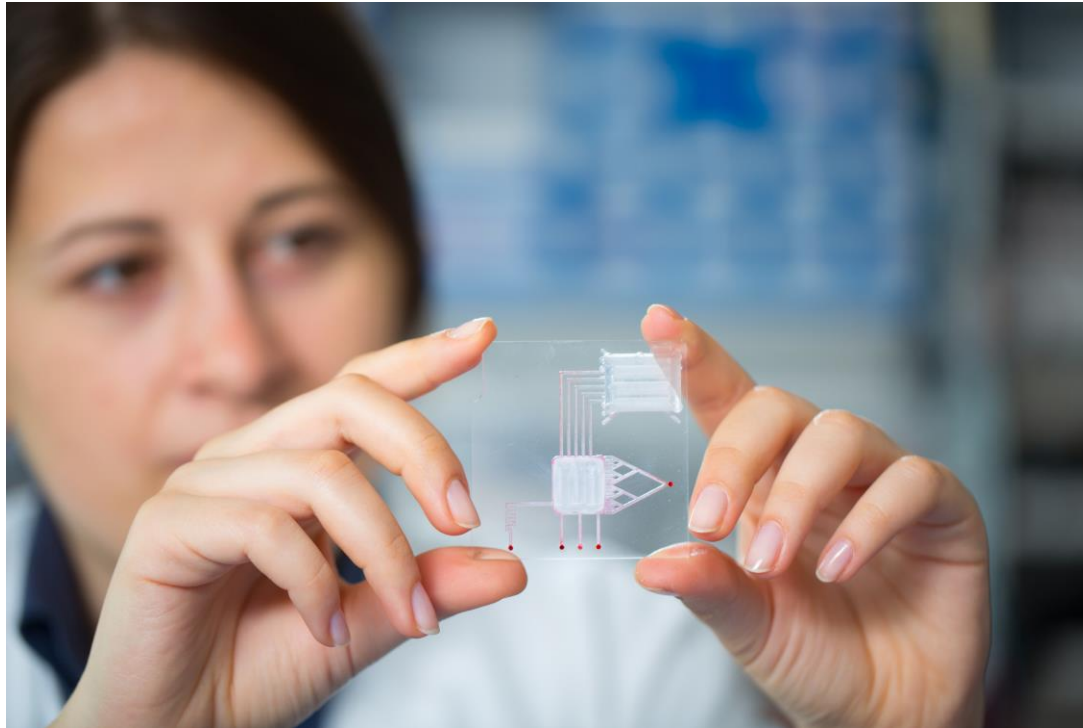
## Benefits:

- Increased head-space for passengers
- Lower assembly cost
- Perfect dimensions, rails function integration
- Noise reduction



# **XILOY™ SO2315 SMA/PMMA for diagnostics**

## Healthcare



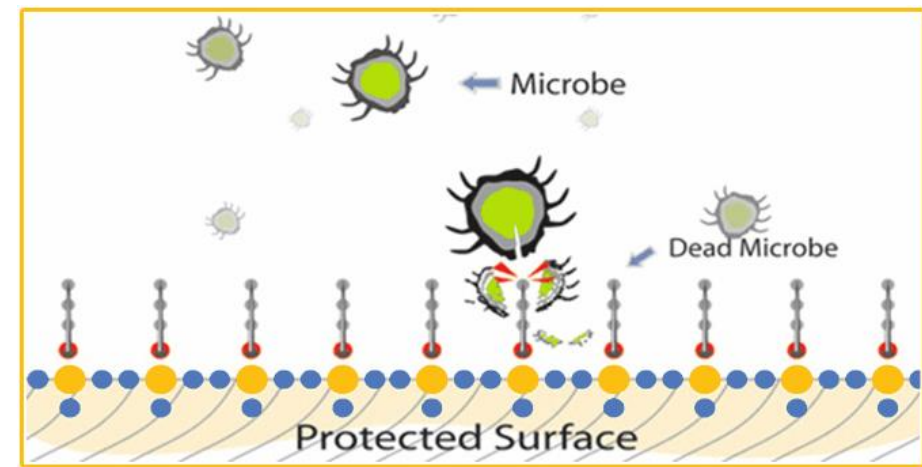
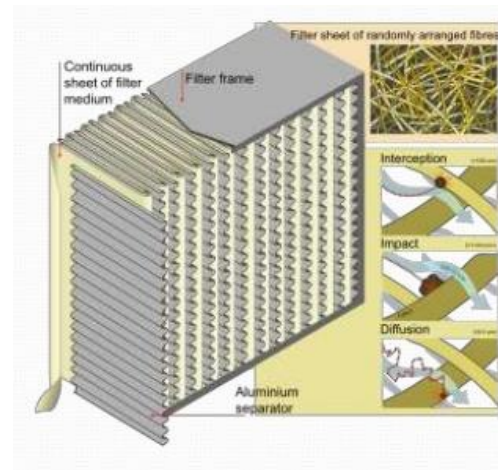
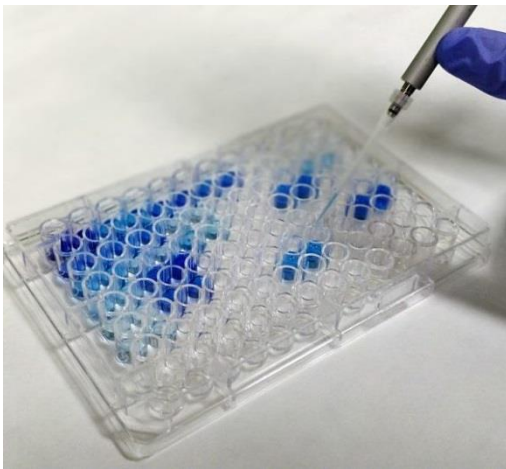
**XILOY™ SO2315** is an injection molding resin designed for use as a **functional substrate**, for instance for Point-Of-Care diagnostics.

The built-in anhydride functionality of XILOY™ SO2315 enables a quick and reproducible attachment of “bio-anchors” (e.g. amino acids, peptides, proteins) employed in diagnostic tests.

Its **good flow** properties and **excellent dimensional stability** up to 112°C makes XILOY™ SO2315 a good choice for **microfluidic devices**.

## Potential spin-off applications

- 96 wells diagnostic kits
- HEPA (high-efficiency particulate air) filters with increased efficiency
- Anti-microbial surfaces
- ...



*Pictures for discussion purposes only*



# SMA/PMMA opportunities

Displays | Lighting

**XIRAN® SO** shows excellent miscibility with PMMA offering:

- Higher thermal stability
- Refractive index tuning
- Reduced moisture uptake
- Improved surface crack resistance

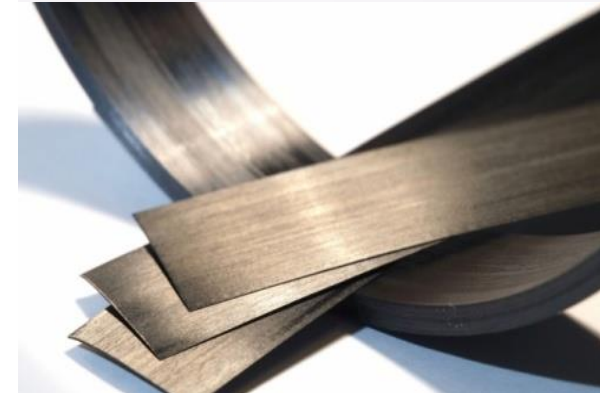
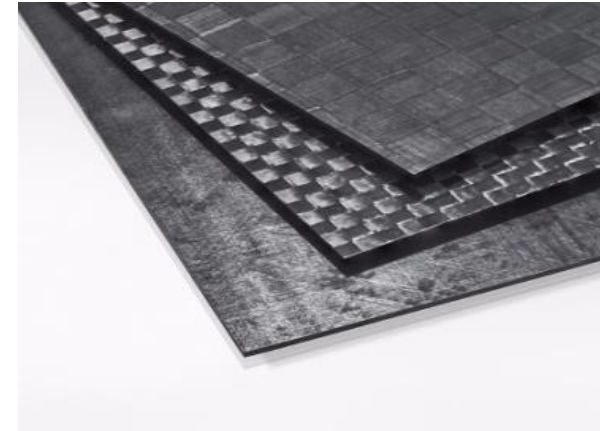


*Pictures for discussion purpose only*

# Hybrid lightweight developments

Automotive | Transportation

- Using SMA's
  - Dimensional stability
  - Surface functionality
  - High stiffness
- Excellent compatibility with all types of reinforcements
  - PA organosheets, tapes & rods
  - PP organosheets
  - SAN organosheets
  - metal



# SMA opportunities for packaging

XIRAN<sup>®</sup> | XIBOND<sup>™</sup> | XILOY<sup>™</sup>

## Using SMA's

- Thermal performance (high Tg)
- Functionality

## Offering

- High-heat
- Improved layer adhesion



**XILOY<sup>™</sup> SE735** for multilayer  
micro-warmable PS packaging

# XILOY™ 3D 100 | XILOY™ 3D 105

Additive manufacturing



**XILOY™ 3D 100** is a modified ABS designed for **warp-free** printing of complex technical, functional parts in a consistent and reproducible way with an excellent, **smooth surface** quality.

It combines excellent **adhesion** to the glass-bed and best-in-class compatibility with water-soluble **PVA** support material with a **high toughness** and good **temperature** performance.

**XILOY™ 3D 105** is designed for ESD\* parts.

# Current challenges

## Automotive | Electronics

- Housings for high-precision sensors
- Direct metal over-molding
- Cooling systems for EV batteries
- ...

**XILOY™ IG** and **XILOY™ SG** materials offer:

- Thermal performance (high Tg)
- High dimensional stability
- Very low moisture absorption
- Surface functionality



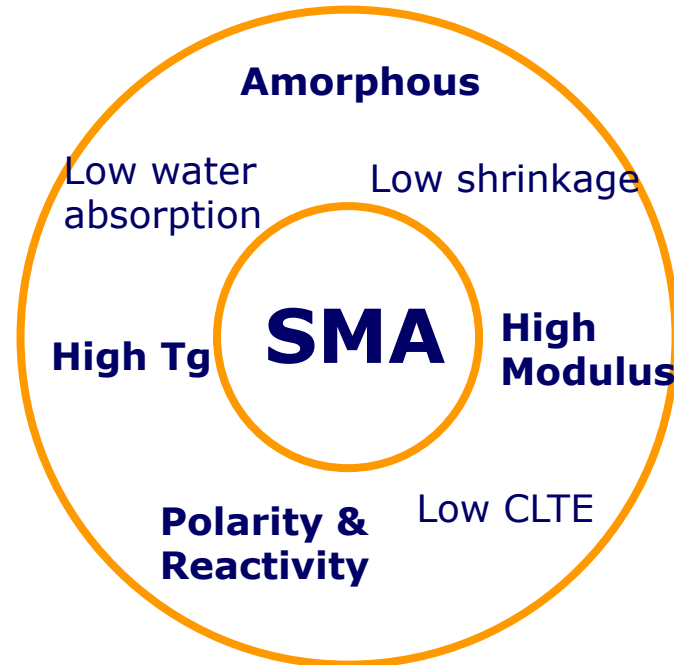
Connectors, sensors, actuators



Cooling systems

## What's next?

**Dimensional  
stability**



**Functionality**



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