



Coffee Lectures 2021

Datwyler - Advanced Technologies

March 30th, 2021, Matthias Rüegg, Advanced Technology Development Manager





NEW DATWYLER

**We materialize ideas for a
safer, smarter, and more
sustainable world.**



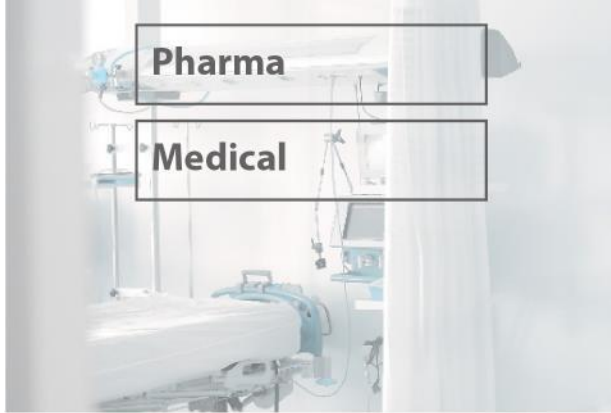
**We focus on
innovative and
system-critical
elastomer
components.**

Strategic supplier of elastomer components for global brands and innovation leaders

Focusing on system-critical components for advanced applications

Operating in a network of excellence spanning across the world

Clear structure to increase market focus and strengthen our core competencies



Healthcare Solutions



Industrial Solutions

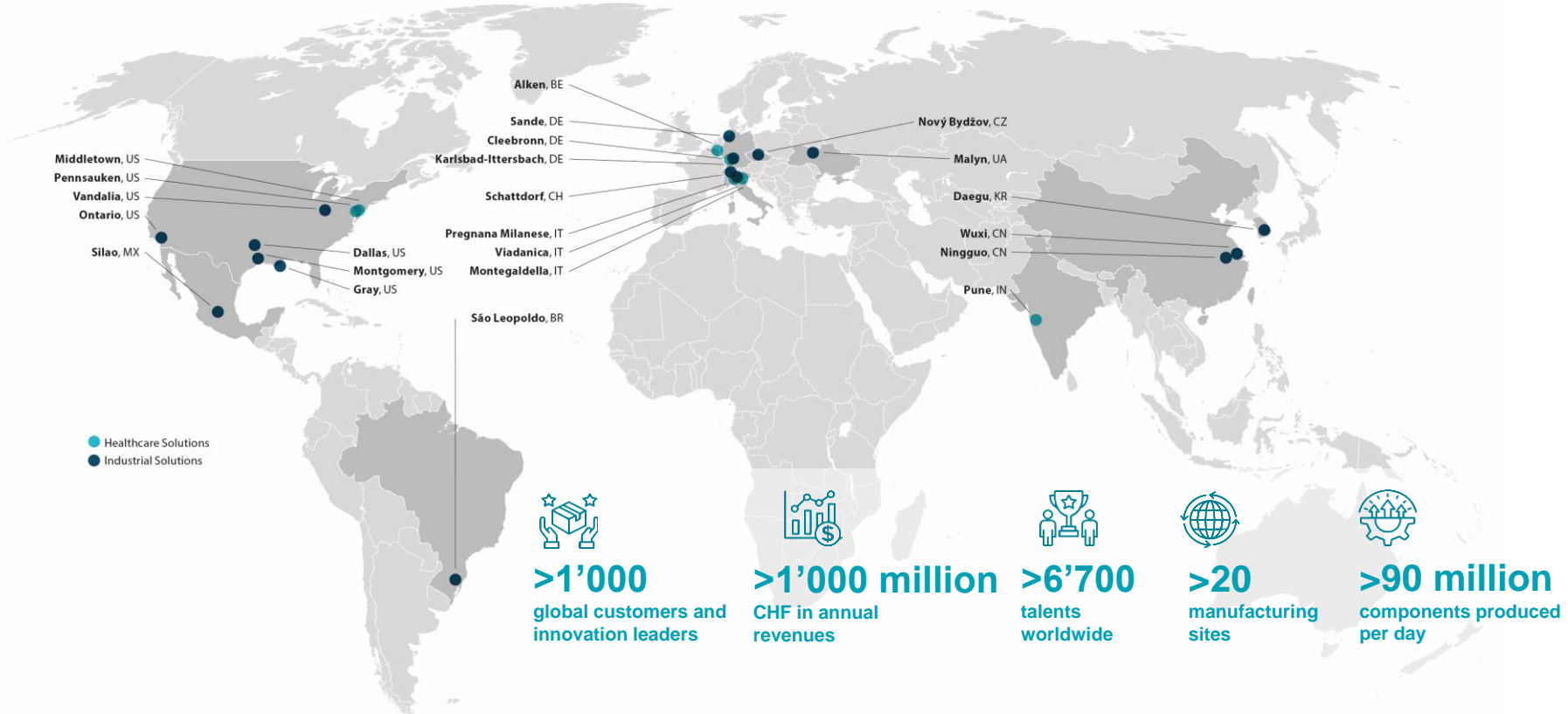


Online Distribution

Technology & Innovation

Finance & Shared Services

Global Presence and Manufacturing Footprint



ADVANCED TECHNOLOGIES MISSION

“ Boosting innovation
in advanced and
emerging technologies
creating added value
for our customers ”

AGILE



A small team of engineers globally cooperating with internal and external experts

INTERDISCIPLINARY



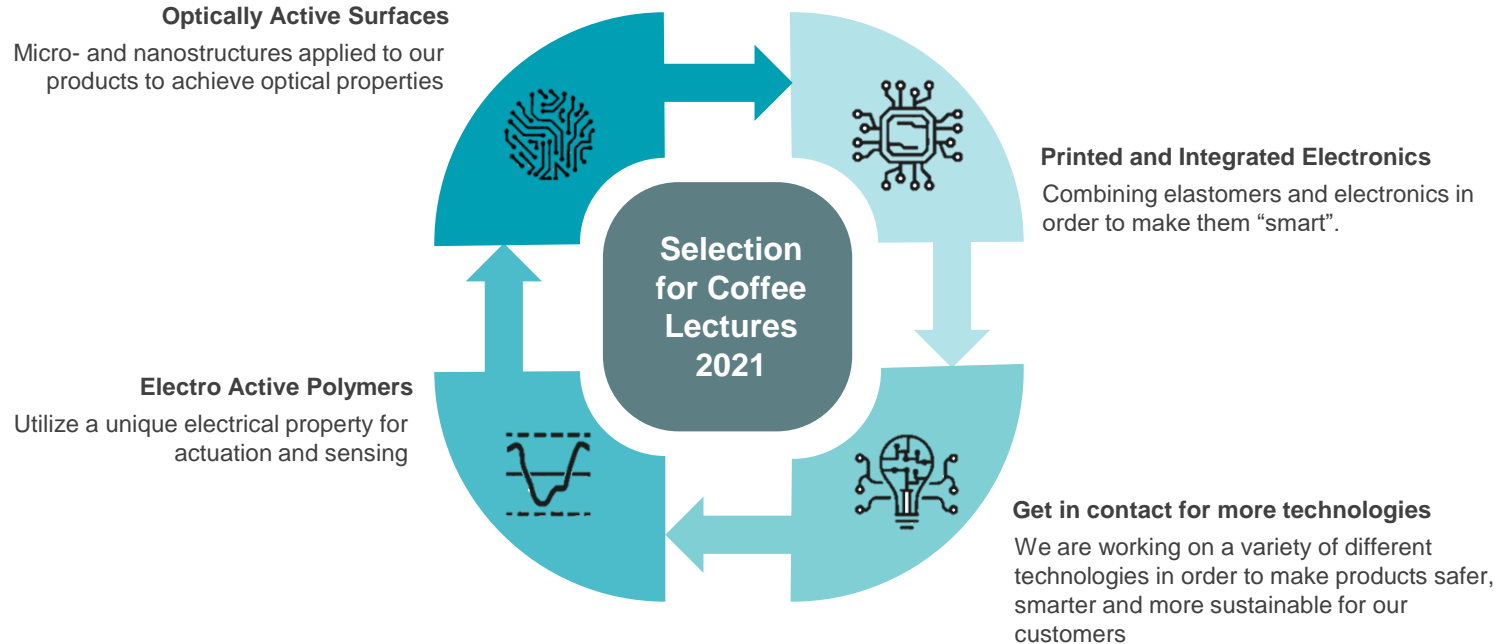
Across different industries and technologies focusing on added value for the customer

DEVELOPMENT



Activities from scouting and research (TRL 3) over dedicated prototypes and products to transition in industrial scale processes (TRL 6)

Selected Focus Areas





Optically Active Surfaces

Technology Scope

Applying nanostructures on substrates using different shapes and properties

Materials such as aluminum, elastomers, thermoplastics

Using compression and injection molding as a process

Business Drivers

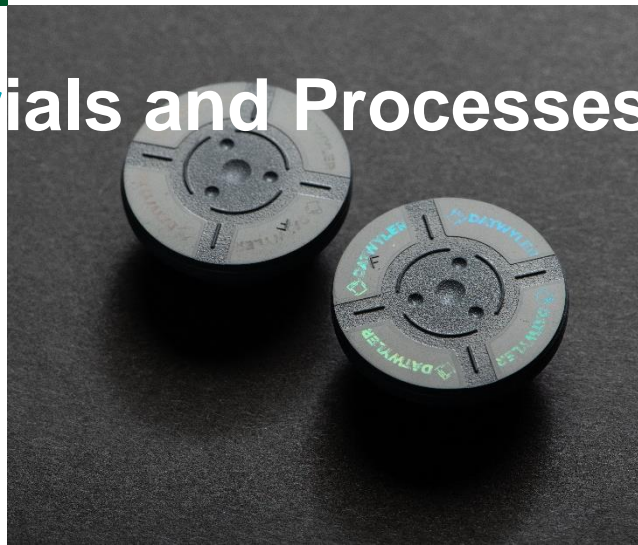
Decoration and artwork, luxurious appearance, branding

Tamper proofing

Anti-counterfeiting, invisible information

Tailoring of physical properties

Variety of Materials and Processes

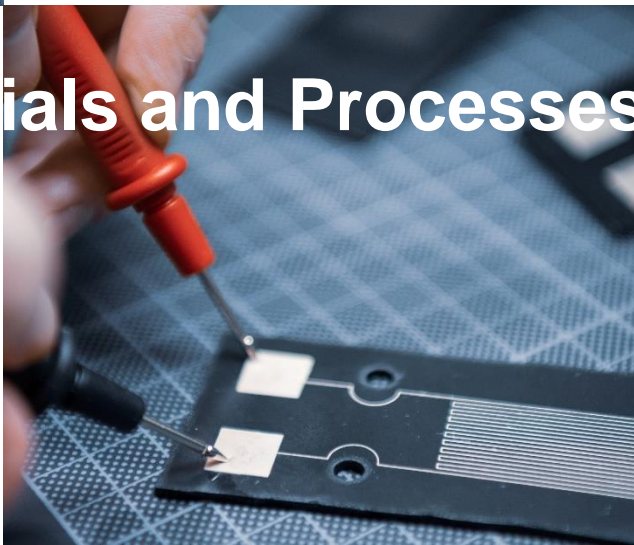




Printed Electronics



Variety of Materials and Processes



Technology Scope

Printing of electronics on elastomer material in order to create smart/intelligent rubber components

Development of lamination process to apply pre-printed sensors on the substrates

Printing of battery technologies on elastomer material to enable advanced sensors

Business Drivers

Real-life monitoring of component/system condition

Smart rubber components

Extended life cycle knowledge

- Predictive Maintenance
- Industry 4.0 / IoT
- Digitalization
- Advanced sensors
- Predictive maintenance



Integrated Electronics

Technology Scope

Integration of an RFID tags in our elastomer components to guarantee a 100% traceability through the whole supply chain

Integration of sensor elements in order to create smart rubber

Wireless readout

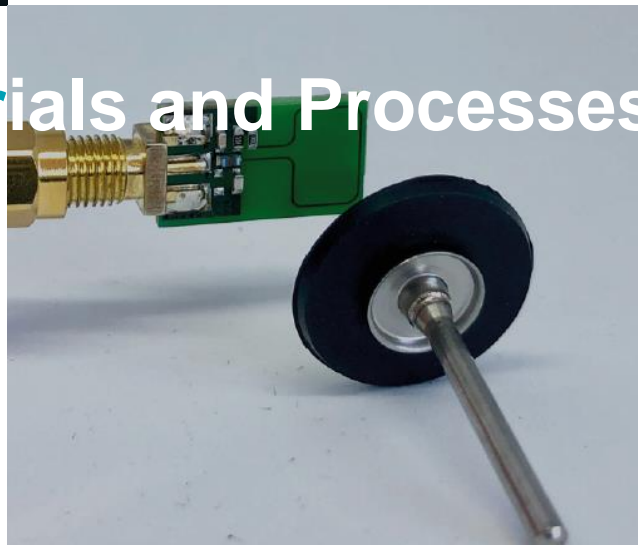
Business Drivers

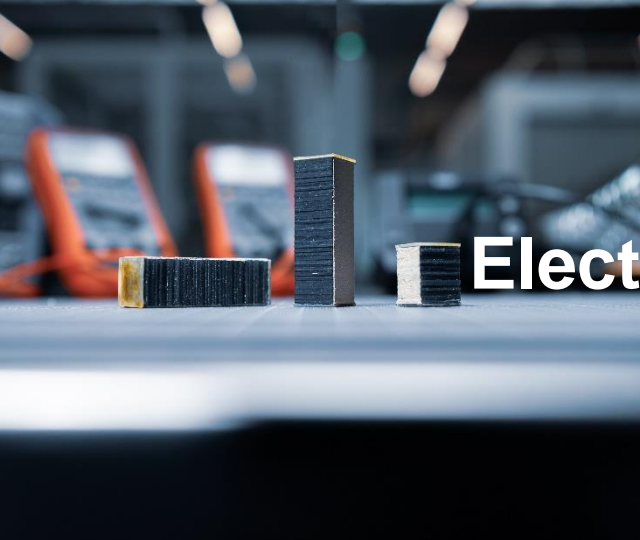
Real-life monitoring of component/system condition

Smart rubber components

- Industry 4.0 /IoT
- Digitalization
- 100% traceability
- Transparency
- Anti-counterfeiting
- Predictive maintenance
- Monitoring on component level
- Characterization of prototypes

Variety of Materials and Processes





Electro Active Polymers

EAP Stacked Actuators



Technology Scope

Electrical power turns into mechanical motion by elastic deformation utilizing electrostatic principles

- Haptic feedback / HMI
- Morphing surfaces
- Sensing functions
- Actuation functions

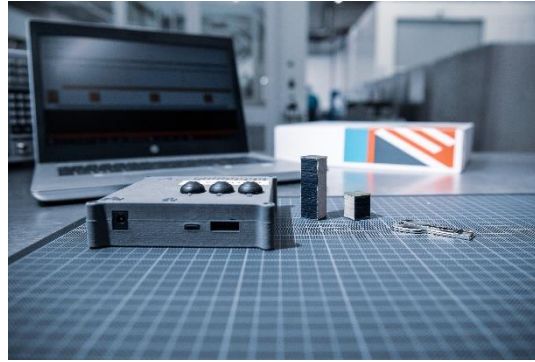
Business Drivers

Unique thin layer silicone stacks for multiple tactile and sensitive actuation

- Low energy consumption
- High energy density and driving power
- No complex mechanical parts
- Robust and resistant polymer
- Convenient operation (maintenance and noise free)

EAP Development Kit – Now Available

You may **order your own personal EAP Development Kit** that meets your specific actuator requirements.



It **includes a control unit, software** to adjust all the parameters, and **all the essential hardware**

Straight forward solution, **allowing the customer to get started with the new technology immediately**



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