*Home Page Summary Copy*

**Innovation at Datwyler: Shaping the Future of Sealing Solutions**

At Datwyler, we are dedicated to empowering you with innovative solutions that open new doors of opportunity. Our commitment extends beyond just enriching our product range; it's about aligning with your evolving needs, today and in the future. By focusing on four critical areas of innovation, we ensure that our offerings are not only advanced but also tailor-made to suit your specific requirements.

In every step, from the initial design to the final product, our core competencies in solution design, material expertise, and operational excellence are leveraged to your advantage. This means we're not just providing products; we're offering comprehensive, innovative solutions that integrate seamlessly into your operations. Our dedication to innovation is a testament to our commitment to you, ensuring that every idea, no matter how ground-breaking, is transformed from a concept into a tangible, market-ready solution that propels your business forward.

Sensing and Actuation Smart Materials

Hydrogen, Energy Storage, and Batteries

Material Innovation

Wearable Sensors

Each innovation area is intrinsically linked to our overarching capabilities, ensuring that we can cater to the entire lifecycle of a product - from raw material sourcing and adhering to stringent regulations, to process optimization and potential for large-scale manufacturing. Our partnerships with leading technical institutions and partners – a sample noted below -- further augment our ability to stay at the forefront of technological advancements.

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*Main page copy*

**Innovating the Future: Datwyler's Four Pillars of Technological Excellence**

At Datwyler, we're focused on transforming your experience with sealing and high-performance polymer solutions through our dedication to four innovative domains. Our expertise in engineering and development is just the start. What truly sets us apart is our commitment to you, our customer. We collaborate closely with you to understand and meet your specific needs, blending our efforts with the fresh perspectives of specialist start-ups and the advanced knowledge of leading technical institutions. This approach ensures that our innovations in sealing solutions are not just technically advanced, but also are perfectly aligned with the unique challenges and opportunities of your business.

**1. Smart Materials, Sensors, and Actuators**

Our in-house development of smart materials, sensors, and actuators, in partnership with specialist start-ups and top research and technical institutes, is a beacon of innovation across multiple industry sectors, including Heating, Ventilation and Air Conditioning (HVAC), energy, and oil & gas sectors. These solutions embody the cutting edge of digitalization, IoT, energy harvesting, and human-machine interfaces, resonating deeply with our core competencies in solution design and material expertise. This arena is not just about creating advanced materials; it's about forging a path in the realm of intelligent, responsive solutions.

Discover Smart Materials Solutions

**2. Hydrogen, Energy Storage, and Batteries**

In the energy sector, our work in hydrogen, energy storage, and batteries is crucial to the global shift toward electrification and sustainable energy use. Our expertise in creating materials that can handle exceptionally demanding requirements can support you in this sector. We endeavor showcase our ability to scale up production swiftly and efficiently.

As the world moves towards decarbonization, our operational expertise ensures that you’re well-equipped to lead this transformation.

Explore Energy Solutions

**3. Innovative Materials**

Leveraging over a century of expertise in high-performance polymer and elastomer formulation and manufacturing, Datwyler continues to pioneer innovations that meet your burgeoning demands of sustainability, across a broad range of industries. Our rich history in material science positions us at the forefront of delivering revolutionary material solutions across diverse fields, from energy completion and drilling to HVAC, agriculture, and aerospace.

At Datwyler, our innovative materials are not just reshaping industry norms but are also driving sustainable practices, particularly evident in our efforts towards the cooling of data centers. Our commitment extends beyond material innovation, encompassing operational excellence and solution design. This powerful combination enables us to quickly turn cutting-edge materials into complex, functionally enhanced components, adeptly responding to the dynamic needs of today's industries. Our ongoing pursuit of innovation ensures that we stay aligned with both your current and future requirements.

Unveil Material Innovations

**4. Wearable Technology**

At Datwyler, we're reshaping the wearables landscape, infusing unique materials into innovative solutions like headsets, wristbands, and smart glasses. Our dedication to superior signal quality, stability, and customization is evident in every product.

SoftPulse™, our leading wearable technology, is just one example, offering a breakthrough in comfort and functionality. This gel-free, skin-friendly electrode, crafted from flexible conductive polymer, revolutionizes continuous monitoring, ensuring effortless, irritation-free use.

Each innovation area is a testament to Datwyler’s dedication to pushing the boundaries of what's possible. By integrating and co-developing these advanced technologies into your operations, you benefit from our comprehensive competencies, ranging from idea generation to market entry. This includes efficient raw materials sourcing, adherence to regulations, and the potential for large-scale manufacturing. Our close collaboration with renowned technical institutions across the globe further amplifies our capabilities, ensuring that we can continue to support you needs by remaining at the forefront of technological advancements.

Partnering with Datwyler: Your Gateway to Innovation

Embrace the future with Datwyler's innovative solutions. Whether you are exploring smart materials, venturing into sustainable energy, seeking advanced material solutions, or delving into wearable technology, we are here to co-develop and bring your ideas to fruition.

Get in Touch with Our Experts

Detail page: Smart Materials, Sensors, and Actuators

**Revolutionizing Industries with Datwyler’s Smart Materials, Sensors, and Actuators**

Datwyler is at the forefront of smart materials, sensors and actuators across multiple industries, including HVAC, Energy and Oil and Gas.

Our in-house development of smart materials, sensors, and actuators, achieved through collaborations with cutting-edge start-ups and top research and technical institutions, represents a significant leap in digitalization, IoT, energy harvesting, and human-machine interfaces. Our commitment goes beyond just creating advanced materials; we are forging a new path in intelligent, responsive solution design.

**Smart Integration for Enhanced Performance with Datwyler's Integrated Sensors**

Experience the future of smart technology with Datwyler's integrated sensors, innovatively embedded in conformal elastomer components. By transforming ordinary rubber components into intelligent, responsive elements, we can bring cutting-edge efficiency and functionality to both your supply chain and final product, helping you increase production optimization, product differentiation and customer satisfaction. The possibilities are endless – these are just a few examples:

* Optimize Your Industrial Equipment:

Stay ahead with predictive maintenance capabilities for your industrial equipment. Our integrated sensors help you foresee maintenance needs, ensuring uninterrupted operations and longevity of your machinery.

* Streamline Your Production:

Our integrated sensor technology simplifies your supply chain, consolidating components and reducing assembly steps. This innovation not only streamlines manufacturing processes but also potentially cuts costs, delivering value directly to you.

* Elevate Your Product - Home Appliances:

Enhance user-friendliness with touch-sensitive panels – whether for large household appliances, or everyday household items.

* Elevate Your Product - Consumer Electronics:

Our smart rubber components contribute to ergonomic designs in consumer electronics, making them lighter and easier to use with improved functionality and aesthetics.

**Revolutionizing Actuation with Datwyler's Electroactive Polymers**

At Datwyler, we're leading the way in the realm of actuator technologies with our cutting-edge Electroactive Polymers (EAPs). These soft, elastic polymers are engineered to exhibit mechanical motion in response to electric stimulation, embodying a seamless blend of material science and electrical engineering.

EAPs: A Leap Forward in Actuation Technology

Our EAPs are poised to replace conventional actuators, offering unmatched performance across a wide range of applications. Imagine the possibilities in robotics, medical devices, and consumer electronics, where the need for innovative and efficient actuation solutions is ever-growing – and the advantages of using Datwyler EAPs are extensive:

* Energy Efficient: EAPs operate with minimal energy consumption, making them ideal for sustainable and eco-friendly applications.
* Simplified Design: The absence of complex mechanical parts in EAPs streamlines design processes, ensuring a sleek and efficient final product.
* Robust and Resilient: Designed for durability, EAPs withstand the rigors of various applications without compromising on performance.
* Silent Operation: Enjoy noise-free functionality, perfect for applications where quiet operation is crucial.
* Multi-functional: Beyond actuation, EAPs offer potential for energy harvesting, sensing capabilities, and haptic feedback, opening up new avenues for innovation and user experience enhancement.

*Understanding how EAPs work – a summary:*

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**Spotlight on Magnetically Active Polymers and Force Sensing**

A prime example of our innovative direction is our work with Magnetically Active Polymers in Force Sensing Materials. This venture into smart elastomer materials aims to deliver scalable and reliable tactile force sensing solutions.

Empowering Digital Transformation with Advanced Sensing Solutions

In an era of rapid digital transformation, there is an escalating demand for compact, high-performing sensing solutions that are not only relevant but also resilient across various sectors. Magnetic Active Polymers (MAPs), with their unique ability to change shape in response to magnetic fields, are at the forefront of this evolution. These elastomer-based MAPs offer unparalleled versatility, revolutionizing design and functionality.

MAPs exhibit remarkable responsiveness to magnetic fields, enabling precise control over their movements and deformations. This precise manipulation paves the way for intricate applications, making them ideal for a spectrum of uses ranging from robotics and Human-Machine Interfaces (HMIs) to innovative sensors and actuators – and with a host of benefits:

* High-Resistance Material: Constructed to thrive in diverse environments, MAPs promise durability and a longer life span, making them a robust choice for various applications.
* Elastic Properties for Interactive Use: Perfect for applications that require direct physical contact, MAPs provide the necessary flexibility and resilience, enhancing user experience and interaction.
* Versatile Manufacturing Adaptability: MAPs' compatibility with diverse manufacturing processes makes them suitable for a wide range of industrial applications, broadening their utility and scope.
* Customization Opportunities: Tailored with unique fillers, MAPs can possess distinct properties such as electrical and thermal conductivity, alongside their magnetic characteristics. This adaptability amplifies their functionality, making them a transformative element in numerous applications.

The Potential of Customizable, Scalable Force Sensing Solutions

Scalable Force Sensing Materials aren’t just innovative. They’re also practical, offering a customizable, straightforward, and mass-producible material solution with immense potential in tactile force sensing applications. Smart, practical and scalable – that’s all part of Datwyler’s vision of delivering new technology solutions to help you succeed further.

**Tailored Solutions for an Evolving World**

Imagine integrating the power of digitalization, IoT, energy harvesting, and intuitive human-machine interfaces into your workflows seamlessly. Our expertise in solution design and material science translates into smarter, more efficient operations for your business, pushing the boundaries of what's possible in your industry.

Embrace the future with Datwyler’s smart materials, sensors, and actuators – a convergence of innovation, practicality, and efficiency.

Contact us to explore how Datwyler’s innovations can revolutionize your industry.

Detail page: Hydrogen, Energy Storage, and Batteries

**Leading the Charge in Hydrogen, Energy Storage, and Batteries with Datwyler**

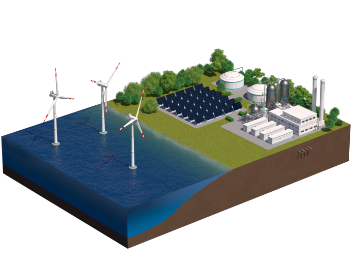
**Powering the Shift to Sustainable Energy**

At Datwyler, we understand that needs evolve in the fast-paced energy sector. We’re committed to empowering your transition towards electrification and sustainable energy practices. Our expertise in hydrogen, energy storage, and batteries positions us as your ideal partner in this global shift. We are dedicated to operational excellence, ensuring that we can rapidly scale production to meet your demands efficiently. As we navigate the path to decarbonization, you can rely on Datwyler to not only lead but also provide steadfast support and innovative solutions tailored to your journey in the transforming energy landscape.

Your Partner for Secure and Reliable Hydrogen Operation

As the demand for sustainable energy solutions grows, hydrogen is emerging as a transformative solution across many industries. At Datwyler, we understand the crucial role of hydrogen in powering the world of tomorrow. From energy production to transportation and industrial applications, hydrogen offers immense potential.

Whether you're building a fuel cell portfolio or managing a hydrogen production plant, Datwyler ensures the reliability and safety of your operations. We're not just a provider; we're your partner in creating a sustainable energy future.

A 3d model of a gas station

Description automatically generatedA 3d model of a city

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**Hydrogen Production Sealing Solutions Tailored for You**

At Datwyler, we understand the critical nature of your hydrogen production operations. Our specialized sealing solutions are crafted to meet your specific needs, offering outstanding chemical resistance and a low hydrogen permeation rate for efficient, reliable hydrogen production.

Hydrogen Sealing Solutions from Datwyler – key figures and benefits:

* Withstand pressures up to 50 bars
* Operate efficiently at temperatures from 60-80¬∞C (LT) and up to 170¬∞C (HT)
* Ensure high purity and cleanliness
* Resistant to hydrogen, oxygen, sulfuric acid, and water
* Designed to minimize hydrogen permeation

Hydrogen Sealing Solutions from Datwyler – our Customized Solutions:

1. Plate Seals for Electrolyzer Stacks: Our advanced plate seals are engineered to deliver superior performance, optimizing the efficiency and reliability of your electrolyzer stacks. That includes edge bonded gaskets, overmolded seals and printed seals
2. O-rings: Essential for ensuring leak-free operation in electrolyzers, our O-rings help maintain the system's optimal performance.

**Hydrogen Transportation and Storage Made Safer with Datwyler Solutions**

Transporting and storing hydrogen safely and efficiently requires overcoming its unique challenges. Our advanced sealing solutions are designed to be resilient against extreme pressures, temperature differentials, and hydrogen permeation.

Hydrogen Transportation and Storage Solutions from Datwyler – key figures and benefits:

* Manage pressures up to 700 bars
* Operate from -40¬∞C to 80¬∞C
* Minimize hydrogen permeation

Hydrogen Transpotation and Storage Solutions from Datwyler – our Customized Solutions:

* O-rings for Valves and Connectors: Critical in ensuring leak-free operation and enhancing the performance of your transportation and storage systems.

Spotlight on Hydrogen End-use Solutions:

In the era of green hydrogen, ensuring the integrity and safety of hydrogen systems is crucial. Our reliable seals are vital in preventing leaks and optimizing the performance of your systems, whether for fuel cells, refueling, or boilers and heater, uses.

Hydrogen Storage Solutions from Datwyler – our Customized Solutions:

Our sealing solutions are key in hydrogen end-use applications like fuel cells, domestic heaters and hydrogen injectors:

Our high-performance sealing components ensure the safety and efficiency of your hydrogen applications:

- Overmolded plate seals for fuel cell stacks

- Static seals in various shapes

- O-rings for connectors and valves

Partner with Datwyler for innovative, reliable, and tailored sealing solutions, driving your hydrogen applications towards a sustainable future.

**Advancing Sealing & Thermal Interface Materials Technology for Battery Systems**

Datwyler’s work in Sealing & Thermal Interface Materials Technology represents the latest advancement in sustainable energy use. We are dedicated to developing technologies that contribute significantly to energy efficiency and sustainability. From critical seals for battery packs, modules, and cells to thermal conductive components for battery thermal management, we design, develop, and produce high quality products customized to your specific requirements.

Datwyler is not just innovating; we are revolutionizing the way industries approach energy solutions. Our commitment to sustainable energy is a promise of a cleaner, more efficient future.

Contact us to explore how Datwyler’s innovations can revolutionize your industry.

Detail page: Innovative Materials

**Innovative Sustainable Materials at Datwyler: Tailoring Solutions for a Greener Future**

Welcome to Datwyler's world of sustainable materials, where we're dedicated to reducing our environmental impact and helping you do the same. Our approach to sustainability goes beyond traditional practices, intertwining with our commitment to innovation and quality.

Transforming Silicone Waste into New Possibilities

A significant part of our sustainability journey involves dealing with waste silicone, a primary waste material in elastomer production. Rather than disposing of this excess, we partner with third-party companies to repurpose it. The waste silicone is ground into a fine powder, which then becomes a valuable raw ingredient for creating new products. This process not only reduces waste but also contributes to a circular economy.

Carbon Black from Recycled Tires: A Step Towards Circular Economy

Our commitment to using sustainable materials extends to incorporating carbon black recovered from waste tires. By repurposing waste from other industries, we not only reduce environmental impact but also enhance the quality and durability of our products.

Renewable Cellulose Fillers: Pioneering with Research

In collaboration with a Swiss-based research institute, we've embarked on a groundbreaking project to develop microfibrillated cellulose (m-MFC). This innovative filler, a sustainable alternative to conventional materials like aramid fibers, significantly enhances the reinforcement of elastomer compounds.

Advancing Safety with Fire-Resistant Compounds

Our fire-resistant compounds are designed with your safety in mind. Exhibiting self-extinguishing properties, these materials are crucial for fire safety in critical applications. We offer a range of materials that meet the UL94 specification's horizontal burn (HB) and vertical burn (VB) tests, ensuring enhanced protection.

Immersion Cooling: Revolutionizing Thermal Management

In the realm of thermal management for electrical components, immersion cooling is an emerging technology we're excited about. It involves fully immersing electronic components in a dielectric fluid, demanding reliable and leak-free sealing solutions. While still in its early stages, immersion cooling promises reduced system complexity, weight reduction, and improved temperature stability. Selecting the right cooling fluid and sealing solution is critical, considering factors like electrical insulation, heat capacity, thermal conductivity, and safety.

At Datwyler, we’re not just manufacturing products; we’re crafting solutions that help you meet your sustainability goals while maintaining the highest standards of performance and reliability. Let us be your partner in navigating the future of sustainable materials and technologies.

Detail page: Wearable Technology

**Wearables: Revolutionizing Comfort and Functionality**

**Embrace the Future of Wearables with Datwyler**

At Datwyler, we are pioneering the future of wearables, combining our unique material properties to bring you innovative solutions in various form factors - from headsets and wristbands to hearables and smart glasses. Our commitment to excellence ensures that each product offers superior performance in terms of signal quality, equilibration time, and stability, all while being scalable and customizable to your specific needs.

Introducing SoftPulse™: The Heart of Wearable Innovation

Our flagship product, SoftPulse™, is revolutionizing the world of wearable technology. Designed for gel-free signal acquisition, SoftPulse™ electrodes eliminate the discomfort of skin irritation, offering a seamless experience. The flexible conductive polymer used in these electrodes is optimized for user comfort, making continuous monitoring feel effortless.

Applications Beyond Imagination

SoftPulse™ is versatile, suitable for a wide range of consumer and medical applications. Whether it's for EEG, ECG, EMG, or EOG monitoring, SoftPulse™ delivers reliable bio-signal monitoring with ease and comfort. Its low impedance and dry usage make it ideal for application on the head, body, or even in the ear.

Why Choose SoftPulse™?

* Soft Yet Robust: Our unique material blend makes SoftPulse™ comfortable for long-term wear without compromising durability.
* Gentle on Skin: Developed for dry, gel-free use, SoftPulse™ ensures no skin irritation.
* Ready-to-Use Designs: Our range includes several brush and flat designs, ready for immediate delivery.
* Unmatched Performance: Experience robust signal quality, quick equilibration, and exceptional stability.
* Scalable Production: Ready to meet demand, our production process allows for rapid scaling to commercial volumes.
* Tailored to You: SoftPulse™ can be customized to fit seamlessly into various devices like headsets, wristbands, glasses, and hearables.

At Datwyler, we understand the importance of merging technology with comfort and functionality. Our SoftPulse™ product is just the beginning of a journey towards smarter, more comfortable wearable technology that adapts to your lifestyle and needs.

Discover the Comfort of SoftPulse™ Today