

GREEN HYDROGEN

Laser systems in the hydrogen industry



Precision

Gentle and very precise machining



Sustainability

No blasting media or chemical processes



Efficiency

Time and cost savings

The manufacture of electrolyzers places the highest demands on precision, process reliability and material quality. This is exactly where SLCR Lasertechnik's systems come in: with over 25 years of experience in laser surface processing, we develop systems that optimally support the special requirements of hydrogen technology.

Our laser-based surface pretreatment enables the targeted structuring, activation and cleaning of metal surfaces before they are further processed in complex manufacturing steps such as coating, joining or sealing. This ensures adhesive layers, durable connections and extended component life - key factors for the reliability of electrolyzers.

Compared to conventional methods such as chemical etching or blasting, laser technology offers decisive advantages:

1. **Residue-free cleaning** without the use of chemicals
2. **Reproducible quality** thanks to reliable process control
3. **Precise, partial processing** even with complex geometries
4. **Sustainability** through resource-saving processes

SLCR systems can be flexibly integrated into manual, semi-automated or fully automated production lines. This enables us to deliver future-proof solutions for manufacturers who want to establish scalable and cost-effective production of electrolyzers.

LIGHTCLEANER PRO

The all-rounder for manufacturing



GOOD REASONS FOR LASER CLEANING

Use only light to clean components and workpieces. Pulsed laser radiation cleans all metallic and many other materials, e.g. CFRP, in a gentle and environmentally friendly manner.

EASY TO USE

After a brief introduction and training session (online or on site), you can get started right away. Our systems are installed at your site using the plug-and-play method and can be easily started up for the desired application thanks to defined "recipes". Every system can be designed to be Industry 4.0 ready.

PRECISELY TAILORED

Each system is developed and implemented by our specialized engineers and programmers to meet customer-specific requirements

GREEN TECHNOLOGY



No chemicals, no other media.
Just light.

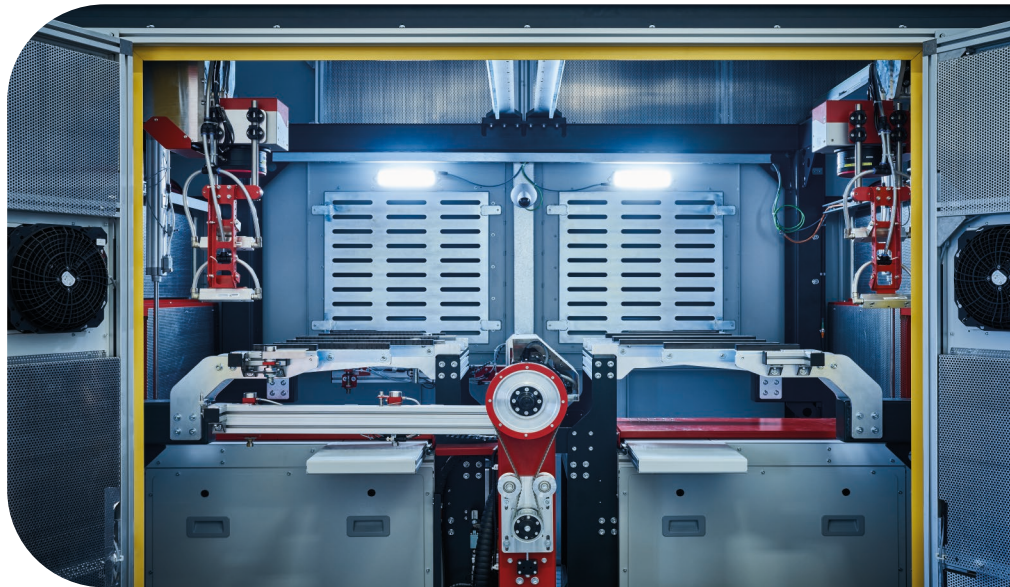
MORE INFORMATION

about our industry expertise:



QUESTIONS?

We look forward to your call!
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System for fully automated structuring and cleaning of bipolar plates

The **bipolar plate** is a key component in the manufacture of electrolyzers. It performs central functions such as current distribution, gas transport and cooling. Precise and reproducible surface treatment of these components is crucial to ensure the long service life and efficiency of electrolyzers.

SLCR Lasertechnik systems can be used to clean, activate and structure surfaces in a targeted manner - **without chemicals, abrasive materials or mechanical stress**. Our laser processes ensure that:

- **coatings** adhere reliably to stainless steel or graphite surfaces
- **contact resistance** is reduced by defined surface structures
- **corrosion protection layers** remain stable in the long term
- quality is **consistently reproducible** for large quantities

Thanks to reliable control and flexible plant concepts, our systems can be used in both pilot production and fully automated series production. This ensures scalable production - from development to large-scale industrial production of electrolyzers.



After structuring, the bipolar plates are cleaned.

SLCR Laser Technology – reliable laser processes for tomorrow's energy technologies.