

# Salgenx Introduces Pioneering Laser Technology for Precision Heat-Treating of Sand in Controlled CO<sub>2</sub> Environments

*New Process Enables Custom Silicon and Advanced Composite Materials for Electronics and High-Performance Applications*

DAVOS, GRAUBÜNDEN, SWITZERLAND, August 17, 2024 /EINPresswire.com/ -- [Salgenx](#), a trailblazer in advanced materials and energy storage technology, is excited to announce a revolutionary new approach to material processing using CO<sub>2</sub> laser technology. This cutting-edge method involves the precision heat-treating and etching of sand in a controlled CO<sub>2</sub> gas environment, allowing for the creation of custom silicon and advanced composite materials with unprecedented control over their properties.

## Transforming Sand into High-Performance Materials

At the heart of this breakthrough is the use of a CO<sub>2</sub> laser, a powerful tool that can achieve extremely high temperatures with precision. By adjusting the laser's power output, Salgenx can fine-tune the heat-treating process, making it possible to transform ordinary sand into high-purity silicon or other sophisticated materials. The process is further enhanced by conducting the laser treatment in a CO<sub>2</sub> gas environment, which provides additional control over the thermal conditions and prevents unwanted oxidation during the material's transformation.

## Precision and Control in Material Processing

The unique combination of CO<sub>2</sub> laser technology and a controlled CO<sub>2</sub> atmosphere allows for unprecedented precision in material processing. The laser can be used to selectively heat and treat sand at the micro level, enabling the creation of custom materials with specific properties tailored to various advanced applications. This method offers several key advantages:

- **Custom Silicon Production:** Salgenx's new process could revolutionize silicon manufacturing by enabling the direct conversion of silicon dioxide (SiO<sub>2</sub>) in sand to high-purity silicon, potentially simplifying and reducing the costs of traditional silicon production methods.
- **Advanced Composite Materials:** By integrating carbon-rich materials during the laser treatment process, Salgenx can produce graphene or hard carbon-coated sand, creating composite materials with enhanced electrical conductivity and mechanical strength.
- **Microstructuring and Sintering:** The CO<sub>2</sub> laser's precision allows for detailed microstructuring

and sintering of sand particles, making it possible to create complex structures with tailored properties for use in electronics, photonics, and other high-tech fields.

## Innovative Applications Across Industries

The potential applications of this technology are vast, spanning multiple industries:

- **Electronics and Semiconductors:** The ability to produce custom silicon and doped materials with controlled properties could be a game-changer for the semiconductor industry, enabling more efficient and cost-effective manufacturing processes.
- **Smart Materials and Infrastructure:** The advanced composite materials produced through this process could be used in smart infrastructure projects, such as self-sensing concrete, conductive surfaces, and other smart building materials.
- **Nanotechnology and Photonics:** The precision of the laser etching process opens up new possibilities in nanotechnology and photonics, where detailed microstructuring is essential for creating next-generation devices and components.

## Addressing the Challenges of Advanced Manufacturing

While the potential of this technology is immense, Salgenx is actively addressing the challenges related to energy efficiency, scalability, and material purity. The company is committed to refining the process to ensure that it meets the highest standards of quality and sustainability, making it viable for large-scale production.

## About Salgenx (a division of [Infinity Turbine LLC](#))

Salgenx is at the forefront of developing innovative, sustainable energy storage solutions. Saltwater batteries provide a safe, non-toxic, and cost-effective alternative to traditional lithium-based energy storage systems. Committed to advancing green technology, Salgenx continues to explore and develop cutting-edge renewable materials and methods to meet the growing global demand for renewable energy storage.

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