

DAS Environmental Experts Introduces ALCEA for Integrated NOx Treatment in Semiconductor Fabs

New plasma-enhanced catalytic secondary abatement solution integrates into exhaust ducts to minimize subfab floor space and energy demand

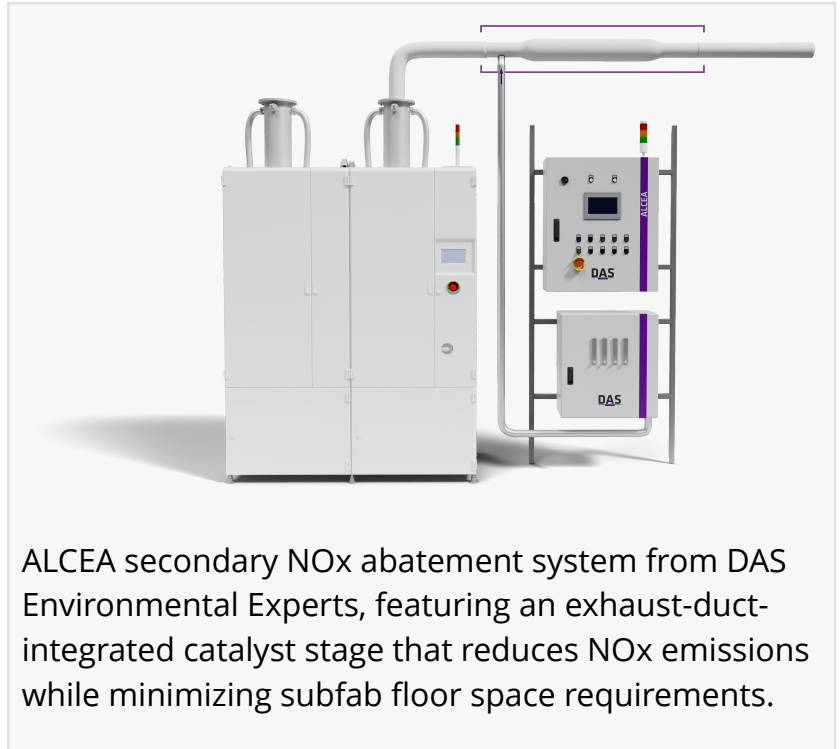
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/EINPresswire.com/ -- DAS

Environmental Expert GmbH today announced the launch of ALCEA, a new secondary abatement solution for nitrogen oxide (NOx) emissions in semiconductor manufacturing.

Installed downstream of NOx-generating waste gas treatment units, ALCEA can reduce NOx by up to 95 percent while its catalyst stage is integrated directly into the exhaust duct, minimizing additional floor space

in the subfab. DAS Environmental Experts will present the new system at SEMICON Taiwan 2026 from September 2 to 4 at TaiNEX 1 and 2 in Taipei (Booth J2 | 346).



ALCEA secondary NOx abatement system from DAS Environmental Experts, featuring an exhaust-duct-integrated catalyst stage that reduces NOx emissions while minimizing subfab floor space requirements.

In semiconductor fabs, additional emission-control capacity competes for limited and costly subfab space. At the same time, manufacturers are seeking to reduce utility demand, maintenance requirements, and operational interruptions. ALCEA addresses these constraints through a highly integrated architecture: the catalyst unit is fitted into the exhaust duct rather than installed as a separate floor-standing treatment stage. The solution is designed for retrofitting into existing exhaust systems and for use downstream of different NOx-generating abatement technologies.

"Fabs cannot treat emissions, energy use and space as separate challenges. With ALCEA, we place a high-performance secondary DeNOx stage where it creates the most value - directly in the existing exhaust path. The result is a retrofit-ready solution that reduces NOx by up to 95 percent while keeping the demand for floor space and utilities low. That is exactly the kind of

practical innovation needed on the road to an emission-free subfab”, says Guy Davies, Chief Business Development Officer, DAS Environmental Experts.□□

Plasma-enhanced catalysis without special gas injection

ALCEA is based on DAS Environmental Experts’ proven [plasma-enhanced Catalytic Technology](#). Reactive oxygen species are formed (ROS), which drive reactions on the catalyst surface. The process converts NO_x into more highly oxidized, water-soluble nitrogen compounds that can subsequently be removed in a downstream central wet abatement system. The dry-oxidation process requires no injection of special gases and the catalysts are reusable.

Depending on NO_x concentration, prior treatment and plasma power, ALCEA handles volume flows of up to 5,000 standard liters per minute and achieves NO_x reduction of up to 95 percent. Specified power consumption is up to 3.2 kW, depending on the NO_x concentration. The system supports up to two catalyst ducts for dual systems or two individual local scrubbers. Process cooling water, reusable catalysts and a design geared toward low maintenance requirements and downtime support integration into ongoing fab operations.

Developed in one of the world’s leading semiconductor ecosystems, ALCEA was created in collaboration with Industrial Technology Research Institute (ITRI), Taiwan’s premier applied-technology research institute. The DAS Environmental Experts engineering team in Taiwan played a central role in the development.

The project combines applied research, local engineering expertise and proximity to semiconductor customers. It also represents a significant expansion of the company’s waste gas treatment portfolio, adding a compact post-combustion DeNO_x option for new and existing fab installations. The market launch at SEMICON Taiwan underscores the role of DAS Environmental Experts’ regional teams in customer-oriented innovation and local value creation. Visitors can learn more about ALCEA and the company’s wider portfolio for waste gas and wastewater treatment during SEMICON Taiwan 2026.

About DAS Environmental Experts

DAS Environmental Experts, founded in Dresden, Germany, in 1991, is an internationally recognized technology leader in industrial waste gas treatment and water treatment. Innovative solutions support companies in the semiconductor, solar, chemical, food and pharmaceutical industries in environmental compliance and sustainable resource management.

With over 950 employees and branches in nine countries, the DAS Group combines global expertise with local presence. The abatement concepts are always customized and manufactured according to high industrial standards in Germany. The portfolio is complemented by comprehensive services for waste gas and wastewater treatment as well as innovation and support centres in Dresden, Taiwan and the USA. DAS Environmental Experts continuously

invests in sustainable research at its own innovation campus in Dresden and shares technological advances with customers, employees and society.

Daniela Georgi

DAS Environmental Expert GmbH

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