

Semiconductor Review

EUROPE SPECIAL

PHOTONICS
EDITION



Alpes Lasers



The annual listing of 10 companies in Europe that are at the forefront of providing Photonics solutions and transforming businesses in the region

ALPES LASERS

Pioneering Advanced Light Sources

Transformative developments in semiconductor lasers continue to find their place in a slew of industrial applications, promising to boost performance and make way for a broader array of next-gen products.

A leader in the development of optoelectronic devices, Alpes Lasers pioneers advanced light sources.

Alpes Lasers is a Swiss engineering company founded in 1998. The first company to offer quantum cascade laser (QCL) on the market, Alpes Lasers is built on a strong foundation of research that enables it to develop and commercialise them. It is rooted in the work of Jérôme Faist, the inventor of QCLs and a professor at ETH Zurich, who is the company's co-founder.

Keeping pace with the advancements in photonics, the company has strategically diversified its product portfolio with room temperature continuous wave QCL, high-power and housing lasers, all in in the mid-infrared (MIR) and near-infrared (NIR) range.

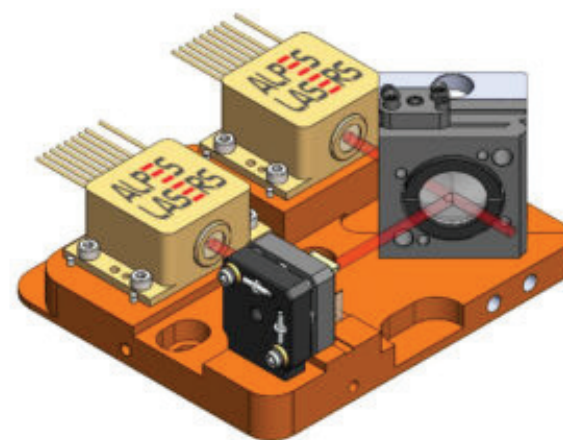
While QCLs remain its main product line, Alpes Lasers offers interband cascade lasers (ICL), short-wave IR laser diodes and external cavity systems. Its products serve system integrators in the academic and industrial world for various applications, such as optical spectroscopy and energy deposition.

"We constantly innovate and invent futuristic QCLs and other semiconductor lasers," says Antoine Muller, CEO of Alpes Lasers.

An R&D company at the frontier of technology, Alpes Lasers has ignited



ANTOINE MULLER,
CEO



a revolution in the industry. Before its inception, QCLs with low output power were available only for cryogenic use. It has advanced the technology to add new production capabilities and make QCLs available for large-scale and broader use.

Alpes Lasers equips spectroscopy companies with a vivid array of light sources with a multitude of capabilities needed to detect various chemical species. They can select the light sources based on their needs and integrate them with detectors, analysis systems and software.

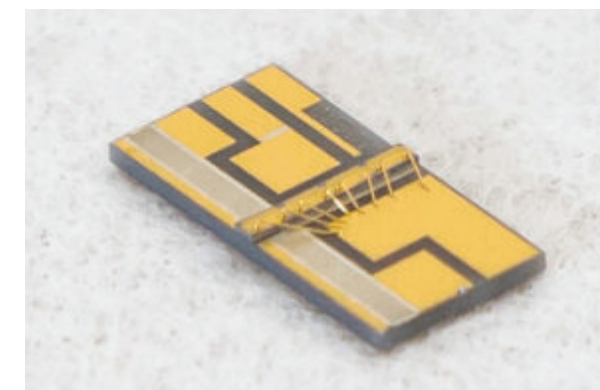
For example, broad-tuning light sources are useful for understanding spectroscopic data in the discovery phase, where clients do not know exactly what they will find as they're studying a new chemical or a known chemical in a new environment.

Distinguishing Alpes Lasers is its vast spectrum of single or multi-mode lasers, also used as blocks in external systems to address the infrared spectrum. Depending on the kind of metrics in which the substance of interest is diluted, clients can choose the ideal product to solve the problem. To meet clients' distinct specifications at an optimum price, it strategically maintains a vast inventory to ensure uninterrupted service to clients.

A semiconductor industry client initially purchased a few expensive devices from Alpes Lasers to measure specific gases. After successful prototype testing, they wanted to scale up production to 300 units at a lower price point. Alpes Lasers identified the key parameters essential for their application and designed products that ensured high performance while reducing costs by disregarding non-essential features. This enabled the client to order in high volume.

In another instance, a client operating in the process control industry wanted to demonstrate their gas detection capabilities using customized laser devices. They approached Alpes Lasers to obtain a tailored laser solution that had good integration

“
We constantly innovate
and invent futuristic QCLs
and other semiconductor
lasers
”



capabilities and met environmental and industrial specifications. The team promptly designed, fabricated and standardised a specific distributed-feedback (DFB) laser, which was seamlessly integrated into the client's product line.

"We deliver our products with quick turnaround times, drawing upon our development capabilities that facilitate ultra-fast introduction to the market," says Olivier Landry, head of sales at Alpes Lasers.

Underpinning Alpes Lasers' high-quality offerings, short lead times and elite customer service is a team of professionals with deep-rooted industry experience. Leveraging their expertise, the company is producing a series of lasers for industrial applications while executing a number of projects and adapting new products to evolving client needs.

Always keeping its finger on the pulse of the market, Alpes brings new products to the table. It is poised to illuminate the future of photonics innovation with its cutting-edge semiconductor laser technology. ^{SR}