



AP&S International is a multinational specialist in the development and construction of wet process equipment for the semiconductor industry.



AP&S International GmbH



Specialists in purity

Electric and self-driving vehicles are just two of the areas that will result in dramatic increases in demand for automotive semiconductors in the years ahead. This growth will benefit Donaueschingen-based AP&S International GmbH, which specialises in the development and construction of wet process equipment for the semiconductor industry. Many of the microchips to be found in newly registered vehicles have passed through the company's machines.

As if that were not enough, AP&S also supports technologies used in other application areas, such as the energy industry, the Internet of Things, medical technology and automation engineering. The product portfolio ranges from laboratory modules to fully automated production equipment with customised solutions for etching, cleaning, coating and drying substrates and wafers – thin slices of a semiconductor that are used to make integrated circuits.

Clean room leads to time savings

AP&S recently invested in a clean room in order to meet the exacting purity requirements of its products. Equipment built in the clean room can go into operation and be signed off soon after its installation at the customer's premises. It also achieves minimal defect rates in the wafers and chips from the outset. 'This eliminates the need for lengthy rinsing cycles, and customers gain significant time and cost savings,' explains managing director Alexandra Laufer-Müller. Two of the machines in the product range are unique in the market. The SpinLift-off, for example, is particularly gentle on the delicate surfaces of wafers

being processed. The use of dimethyl sulphoxide in combination with megasonic cleaning ensures no residue is left on the substrate after processing. Another innovation is the fully automated wet processing equipment TeraStep, which can handle wafers of different sizes and thicknesses. This equipment also enables various chemical and solvent processes to be combined and a variety of contamination classes processed.

Innovation is the driving force

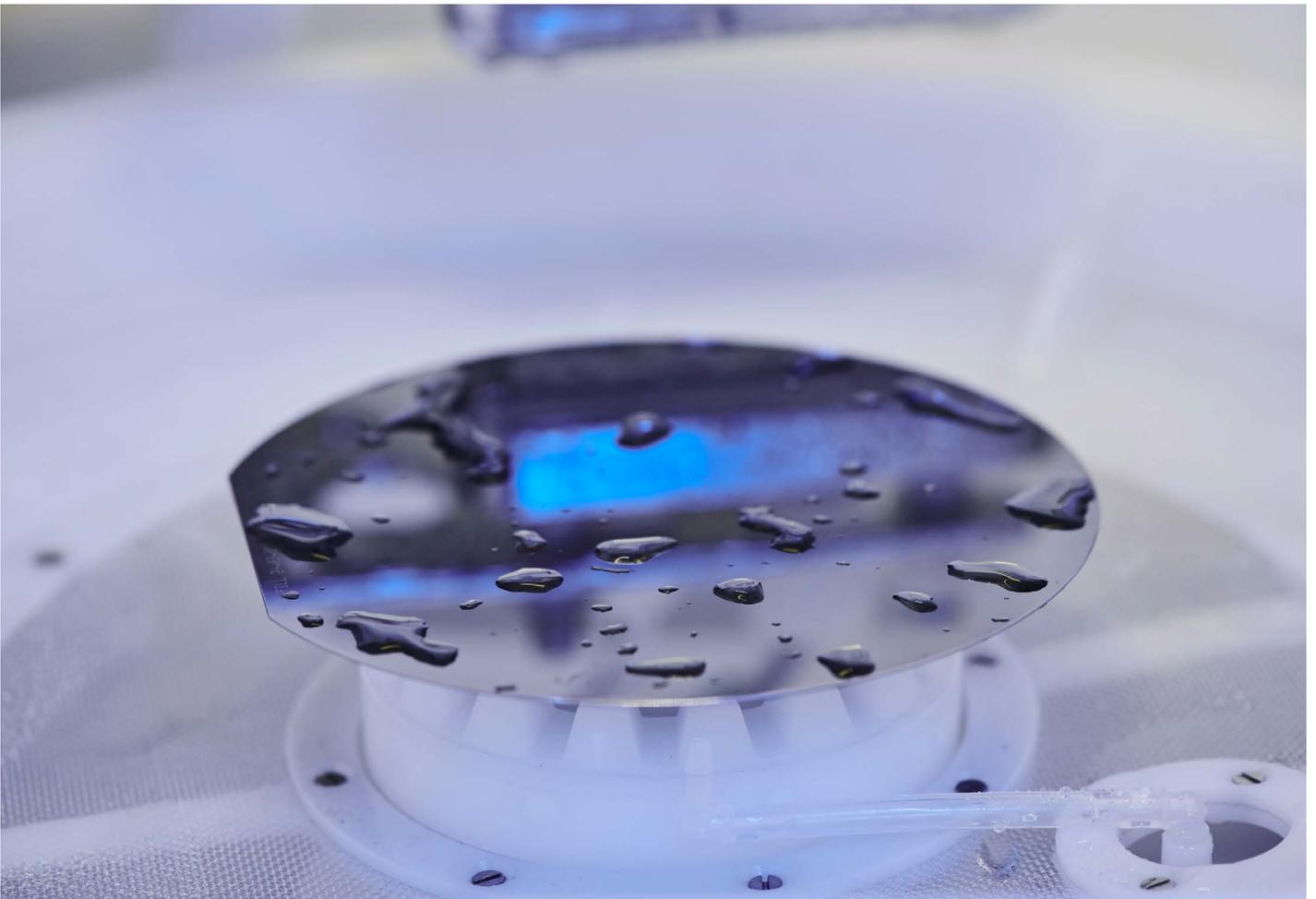
AP&S connects the real and the digital worlds, whether in equipment monitoring, the sales process or the development phase. After all, identifying emerging technological trends and helping to shape technology standards is part of AP&S's philosophy. 'Innovation is what drives us,' says Alexandra Laufer-Müller.

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Managing Director
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Excerpt from the TOP 100 Innovation book 2018



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Together for the goal

AP&S International GmbH operates in an extremely competitive international market: customized equipment for etching, cleaning, coating and drying wafers and substrates, as well as the required after-sales services are the company's core competencies. This high-tech company develops, builds, and enhances wet process equipment, which is needed for handling and processing wafers, from which the active elements of microelectronic chips are produced.

One of the distinctive features of wet chemical processing equipment in the semiconductor industry are the stringent requirements for product purity. This is an issue that must be confronted by the manufacturer – otherwise the customer will have to perform lengthy rinsing cycles.

Ultra-high purity water for deep-down cleanliness

Developers working at this SME in Donaueschingen realised that there was another way of achieving the strict specifications with regard to purity – and a resolute step was taken in this direction in 2017, when the company invested in a ultra-high purity water system. This drastically reduces contaminants down to the ultra-pure trace level. AP&S's equipment is now rinsed with pre-prepared, ultrapure water prior to delivery, and measured for trace analyses of positive ions and categorised using optical particle counters and samples. As a result, the equipment can be quickly put into operation after being installed at customers' semiconductor plants, achieving minimal defect rates in wafers and chips from the outset.

Ready for the digital transformation

Managing director Alexandra Laufer-Müller acted with equal decisiveness to lay the groundwork for her company's digital transformation. AP&S has taken a shareholding in tepcon GmbH, a software company focusing on telemetry, augmented reality, and human/machine interfaces that is considered a pioneer in matters relating to the digitalisation of manufacturing. Alexandra Laufer-Müller is convinced that this investment and the accompanying expansion in AP&S's areas of expertise will enable it to take on a lead role in the semiconductor sector. Given the dynamic nature of the company, it is hardly surprising that it has been sponsoring the 'Wild Wings' ice hockey team from the neighbouring town of Schwenningen since the 2017/2018 season. 'We love this sport,' Laufer-Müller explains. 'Team spirit, tactics, and pace – it's a perfect fit for us and our motto: 'Together for the goal!'

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Managing Director
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