

High-tech plastic parts for cutting-edge consumer electronics

What does a smartphone have to do with Angst+Pfister? Premium plastic parts that are manufactured consistently to precisely the same specifications are incorporated into high-tech products from COMET, which is producing wafers for smartphone memory chips and glass substrates for flat screens. COMET is consistently inspiring its customers worldwide by leading its industry with innovations.



“Our collaboration goes beyond challenges and deliveries. We both want to succeed.”

Iwan Wissenburg, Director Customer Service,
Senior Specialist Global Sourcing, COMET,
Plasma Control Technologies, Flamatt, Switzerland

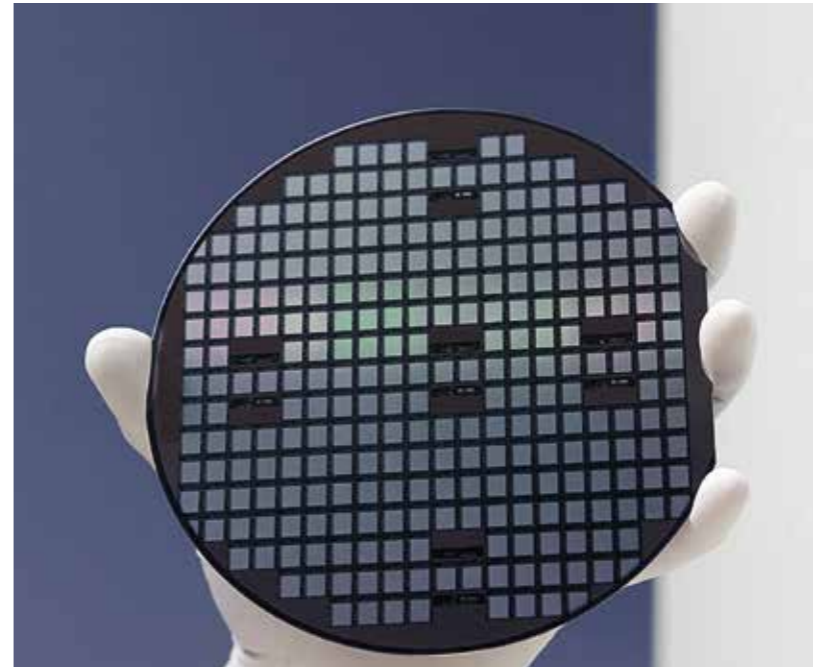
The experts at COMET specialize in high-frequency and vacuum technology applications. Know-how has a strong tradition at COMET – take the firm’s expertise in industrial X-ray technology, for example. And it is precisely this know-how needed in the manufacture of items such as flat screens, memory chips and solar cells. It is this expertise that is called for to coat and etch large glass

substrates for the flat screens and the silicon wafers for the memory chips.

When electrons “fly” A high-frequency generator provides the energy for this plasma process, while another device with two integrated vacuum variable capacitors regulates the energy transfer to the plasma chamber



Plasma Control Technologies from COMET with two vacuum capacitors. Even tiniest deviations in the integrated plastic parts can have far-reaching consequences.



COMET's Plasma Control Technologies products enable wafer coating – for smartphone memory chips, for example.

and ensures that it remains highly stable. The term “plasma” refers to a fourth state of matter, in addition to solid, liquid, and gaseous, in which ions and electrons “fly” around freely, stimulated by energy. They are used for the coating and etching processes in semiconductor manufacturing. COMET is one of the leading providers when it comes to stimulating and controlling this plasma in a way that facilitates the production of highly precise industrial applications all the way down to the nanometer range.

“Even on the machine used to manufacture the plastic parts, nothing must change. Angst + Pfister, with its global procurement platform, can guarantee these identical processes.”

Iwan Wissenburg, Director of Customer Service, Senior Specialist for Global Sourcing, COMET, Plasma Control Technologies, Flamatt, Switzerland

There is currently a great deal of innovation in the pipeline at COMET in this area of plasma control technologies: every smartphone and every tablet can do more than its predecessor model, and this takes memory space. This does not, however, make the devices bigger or more expensive – instead, the chips become smaller and more efficient. “Their structures are already in the nanometer range. We support this trend and are gearing up for the next leap, which will

be welcomed by wafer manufacturers, the suppliers to the chip industry,” says Walter Bigler, who in his role as COMET’s Vice President for Technology works continuously on enhancing the product range together with his team.

Consistency in quality

COMET produces customized devices for energy transfer in its USA factory located in San Jose, California, producing each time precisely to the customer’s wishes. “This means that around two-thirds of the components are customer-specific,” explains Iwan Wissenburg. At

COMET he is responsible for customer services and supply chain management, while also contributing his experience as a specialist in worldwide procurement. What unites the different parts is the consistently high quality that is demanded of them. And this starts with the consistent quality of the raw

material: since it is used in the high-frequency range, the risk of fire must also be eliminated. Soot, in the clean room environment required for the manufacture of wafers, is simply inconceivable.

COMET and baggage

Vacuum tubes marked the beginning, almost 66 years ago, and since then industrial X-ray technology and COMET have become inseparable. This technology has been continuously enhanced, conquering ever-increasing numbers of markets and fields of application over time. The internationally operating Swiss company has a longstanding reputation in nondestructive testing. Whenever cast parts, welded joints or tires need to be tested, or even pipelines inspected, COMET offers the most straightforward solution. COMET is also encountered at airports, with computed tomography systems scanning baggage to ensure the safety of all passengers.

A newly formed interdisciplinary team is currently exploring new territory with innovative electron beam technology: e-beam lamps, which can be screwed in almost like a light bulb, can sterilize beverage packaging and other surfaces efficiently and in an environmentally friendly manner already during the production process, or can accelerate the drying of printing ink.

Consistency in the production process What’s more, the production process for the device components must be absolutely identical at all times. “Even on the machine, nothing must change,” continues Iwan Wissenburg. The smallest deviation could disrupt the processes of plasma coating and etching. This copy-exactly production process is a specialty of the semiconductor industry and considered to be the standard.

Benefiting all parties “We meet all of these complex technical, quality and commercial requirements,” comments Thomas Gartmann, who is responsible for plastics technology at Angst+Pfister. “We process high-performance plastics for COMET, meeting the quality specifications of the many different articles that we mechanically produce in relatively large quantities – with first-class results using the copy-exactly process. In short we are in a position to handle both the prototype small batch and the large-volume series production. We have also integrated ultrasonic cleaning and packaging to COMET’s rigorous quality specifications.”

COMET and Angst+Pfister – combining forces. The cooperation between the two companies is much more than simply a matter of providing the required components. “We both want to move forward, of course,” comments Iwan Wissenburg, “and can now work together to solve common questions about the plastic parts.” For him, Angst+Pfister’s global procurement platform is particularly important, guaranteeing him consistency in quality and in manufacturing processes with the capability of serving COMET’s factories in Europe, North America and Asia.

Total cost of ownership is vital Naturally, the initial costs must also be right, from every perspective: the total cost of ownership (TCO) and the highest possible level of environmental sustainability are essential for Iwan Wissenburg. He does not, however, want to send components half-way around the world, and this is why he is also pleased to see Angst+Pfister parts delivered directly from its China entity to the COMET location in Shanghai and from Switzerland directly to San Jose. When he speaks of TCO, he thinks of quality, price, order processing, time and place. In short, the complete package must

be right for him. And the collaboration continues. The two companies aim to keep on finding new solutions, improvements and innovations over time.

Your contact:
Thomas Gartmann
Profit Center Leader
Engineering Plastics Technology
Angst+Pfister Switzerland
+41 44 306 63 01
thomas.gartmann@angst-pfister.com