

THE MEASURE OF THINGS

Making sensors is a complex, scientific business that requires state-of-the-art technology and serious expertise. Switzerland-based Innovative Sensor Technology IST AG has both, which is why it's leading the way in developing and producing cutting-edge physical, chemical, and biological sensors.

MIRKO LEHMANN

CEO @ Innovative Sensor Technology IST AG

IST AG's HQ in the stunning Toggenburg region



Mirko Lehmann has weathered some storms over the last couple of decades as the CEO of Innovative Sensor Technology IST AG, so he's ready for whatever chaos the coronavirus has in store.

"I've witnessed many ups and downs at the helm of IST AG, which is why I tell people who want to go into management to always prepare for external crises," he says. "You might not be able to predict crises, but you can react to them. This is the third big crisis that I've been forced to navigate as CEO together with my team. First there was the 2008 financial crisis, then the Swiss National Bank unpegged the franc in 2015, and now this! As a result, we're well versed in crisis management."

Innovation, innovation

After studying physics and completing a PhD in biophysics, Mirko co-founded a biotech company and later worked for semiconductor company TDK-Micronas, which equipped him with technical and marketing skills in the huge field of advanced sensors. →



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Sensor-tive guy:
Mirko Lehmann

So, what's his secret to overcoming unpredictable catastrophes like world-stopping viruses? The secret lies in his company's name – innovation.

“One of IST AG's biggest strengths is that we never stop innovating,” Mirko explains. “Despite the virus, we will develop and produce many new products in the next three to five years. I am certain of this. We are investing in the future. You have to understand what is technically feasible and what the market needs, it's a balancing act. The company's technical overview is incredibly strong. We are the only outfit in the industry that makes cutting-edge physical, chemical, and biological sensors.”

International reach

A quarter of a century ago, IST AG – headquartered in Switzerland's Ebnat-Kappel municipality in the idyllic mountainous region of Toggenburg – created its first nickel temperature sensor. Every year the company now de-

velops 200 new products and manufactures a few million sensors, designed for industries including aerospace, heating and ventilation, medical, and biotech. These highly specialised sensors measure temperature, flow, humidity, conductivity, and biological data to help people and companies “sensorise” their products and equipment. These sensors are made for things like satellites, white goods, and medical equipment – in fact, IST AG sensors are found in nearly every industry around the world.

“ I tell people who want to go into management to always prepare for external crises ”

In 2005, measurement instrumentation powerhouse Endress+Hauser acquired IST AG, which now has around 400 employees – half of whom are located in Switzerland. Another big production location is in Roznov, Czech Republic. The company expanded in 2012 and moved its headquarters from Watwil to Ebnat-Kappel – IST AG has also built a new state-of-the-art manufacturing facility, which is equipped with a large production area with clean rooms and machinery to create a variety of sensors adapted to the needs of its customers. This flexible production facility means the company can produce high volume through to small batches of customised sensors. The headquarters are also home to its R&D, sales, and administration departments.

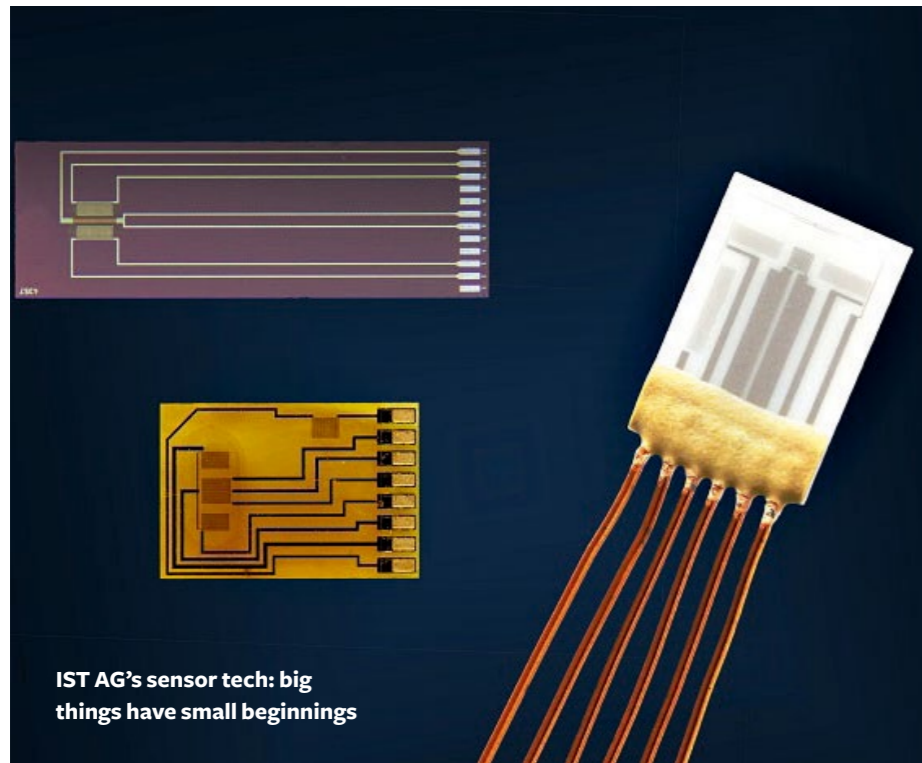
“IST AG has been an invaluable learning experience for me, I've been lucky enough to continue my education here,” Mirko says. “I was pretty naive when I first started out because I didn't have much →



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IST AG's sensor tech: big things have small beginnings



is diced on fully automated machines and prepared for wiring.”

A €15-million investment in 2019 paved the way for the sensor specialist to double its floor space in Ebnat-Kappel. “The growing demand for innovative sensors and the corresponding strong growth at IST AG made it necessary for us to expand the facility yet again. We’re confident that we have created the space we need to produce even more innovations,” adds Mirko.

Strong ties

IST AG chooses its suppliers wisely because it needs to be able to innovate at the same rate. They need to be flexible and work tirelessly to develop new solutions and products so they can be called upon to provide specialised components at the drop of a hat.

“IST AG is extending its global reach and now has hubs in North America and Asia,” Mirko explains. “Despite the virus, we are still moving forward and answering the world’s big sensor demands.”

experience in aspects like human resources and how to develop and manage companies, all of which requires a lot of time and skill. I’ve learned on the job and I’m still learning. It’s incredibly important to ensure continuous personal and collective development within the company. Never stop working on yourself and your people because diligent employees are our most valuable asset, they deserve the chance to evolve professionally. It benefits everyone.” IST AG is composed of a global team of experts in the field of sensor technology offering their skills and experience as development partners for customers. Close collaboration with a broad network of partners, universities, and technical institutes means it pushes the boundaries of existing technology, creating innovations that fulfil increasing customer demands across a wide spectrum of industries. The company’s sensors are reliable and cost-effective, and its versatile technological portfolio covers different substrate material choices, the use of thin and thick film technologies, patterning technologies, and diverse test and assembly options. “If we want to continue being sustainable,

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it’s really important to focus our technology on the exact customer needs because sensors are really fragile systems,” the CEO says. “The development of a specialised sensor begins by understanding the needs of our customers. Our sales team presents solutions to our customers and together we define the right sensor solution. Take, for example, a customer-specific platinum temperature sensor with extended wires – its design will be discussed, defined, and prepared by our dedicated experts in close cooperation with the customer, before being produced at our facility in Ebnat-Kappel. In this case, the production process would start with the deposition of high purity platinum thin film layers onto a ceramic substrate. These processes are performed in modern ISO 5 cleanrooms. To ensure high quality sensors, wet chemical processes are performed on automated systems for chemical cleaning and edging processes. The pattern of the sensor structure is defined by multiple steps including spin coating, etching, and screen printing. Each sensor will then be individually laser trimmed to the customer-specific resistance before each substrate

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