

New Materials / Nanotechnology / Photovoltaics

Best Practice: Growth-Oriented Company

VON ARDENNE: Dresden-based High-Tech Pioneer Grows to Global Player

VON ARDENNE develops technologies and manufactures equipment for the deposition of ultra-thin layers on materials such as glass, metal strips and polymer films. These materials are the basis for products like solar modules, architectural glass, and smartphone displays.

In the early 1950s, when Manfred von Ardenne established his research institute in Dresden, he specifically chose this city. Many industrial companies, workshops and trading facilities in the electrical engineering, information technologies, precision mechanics and optics, metallurgy, glass technology and chemical industries had already established themselves in the region before WWII. After its reconstruction, this infrastructure offered opportunities for even greater research and collaboration.

In 1955, Manfred von Ardenne established the 'Manfred von Ardenne' Research Institute within the beautiful surroundings above the Elbe Valley atop the Weißer Hirsch hill. The institute's innovative approach became the starting point for several new foundations: the Central Institute for Nuclear Physics Rossendorf and the nuclear faculty at the former Technical College of Dresden were established and the industry network VEB Vacutronic – later named Measuring Electronics – was also founded. They were followed by other high-vacuum technology, radiology, medical electronics and electronic data processing companies.

VON ARDENNE, which has remained a family-owned business to this day, evolved in this technologically demanding environment. However, even though the institute had remarkable leeway during the GDR period due to its status as a private business, it was under enormous pressure. Yet, it continued to assert itself by developing new and innovative solutions. Today, the international corporation is jointly managed by Thomas Krischke (President & CEO) and Hans-Christian Hecht (CTO).

Practical Research Is the Company's Trademark

From the beginning, practical relevance has been paramount in VON ARDENNE's development. Building high-performance prototype systems has been an important part of the institute's work, along with the ability to transfer new technologies from the laboratory to industrial scale as quickly as possible.

“We are proud of our founder who conducted purposeful and results-oriented research and skillfully took advantage of synergy effects,” said Dr. Ulf Seyfert, Director Technology and R&D-Cooperation.

Two of VON ARDENNE’s most important technologies that continue to be crucial for the company are electron beam technology and plasma physical technology for vacuum coatings. Manfred von Ardenne recognized the significance of these technologies early on, thereby enhancing the profile and key competence of his institute as early as in the 1960s.

Magnetron sputtering as a large-area coating technology has retained its enormous innovative potential. Even though the VON ARDENNE Institute started working with this technology more than 40 years ago, VON ARDENNE has continuously developed the process for new applications. Electron beam systems used for melting, evaporation and the thermal treatment of materials have remained part of the company’s portfolio and undergo constant development.

New Growth to Achieve World Market Leadership

In 1989, the institute experienced massive change. Part of the research institute’s staff remained with the newly-founded VON ARDENNE Anlagentechnik (system technologies), while a group of employees founded a new research institute from which later originated the Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology, (FEP). VON ARDENNE still maintains a close research collaboration with FEP. Other former employees pursued Manfred von Ardenne’s medical focus areas in the newly-founded Von Ardenne Institute for Applied Medical Research.

The staff of VON ARDENNE has grown from 67 employees at the time of the German reunification to more than 650 today. The high-tech company is deemed the world market leader of systems for large-area architectural glass coatings and thin-film photovoltaics that contribute to energy saving as well as alternative energy production, and meet the highest quality standards. VON ARDENNE also provides equipment and technologies for solar applications such as crystalline photovoltaics and solar thermal energy and solar thermal power stations.

“We support companies in their growth and assist them in realizing their ambitious goals,” Mr. Seyfert said. “Photovoltaics and architectural glass coating have made us a big player. We have always counted on the diversity and uniqueness of our product portfolio, which has enabled us to overcome the photovoltaic crisis together with our customers.”

VON ARDENNE coating systems are used in more than 50 countries worldwide and international business accounts for more than 90 percent of the revenue, which reached 200 million Euro in 2014.

“But even though the majority of our customer base is international, our commitment to Dresden remains strong, because the many factors that were crucial for Manfred von Ardenne are still relevant today,” Ulf Seyfert said. “The City of Dresden and the Free State of Saxony should continue to strengthen and expand these factors.”

Although most of the company’s developments are made in-house, VON ARDENNE maintains a close research collaboration with the Dresden Fraunhofer Institutes, Max-Planck Institutes, Helmholtz Center Dresden-Rossendorf, and the City’s universities and colleges. In addition to the headquarters on the Weißer Hirsch hilltop, the company continues to expand its development, production, and logistics facilities in the Dresden-Weißig Industrial Park, which were established in 1996.

Entrepreneurial Spirit of the Founder Continues to Shine

About 600 patents in radio and television technology, electron microscopy, nuclear, plasma and medical technology were filed by the polymath Manfred von Ardenne. This genius inventor and practical visionary dreamed of ‘wallpapers made of light’ and, in 1962, predicted the innovative OLEDs – organic light emitting diodes. Some current VON ARDENNE research projects focus on this technology today.

VON ARDENNE upholds the values of its founder Manfred von Ardenne. His scientific curiosity, sense of quality and continued search for innovative solutions have determined the sustainability of the company to this day.

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