



INVEST. INNOVATE. INTERNATIONALIZE.

Microelectronics

Industry Clusters in Eastern Germany

Long recognized as one of Germany's most innovative economic regions, Saxony has established itself as one of Europe's leading microelectronics locations.

Microelectronics in Germany

Microelectronics counts as one of the most important key technology sectors driving global innovation. Modern microelectronics provide innovative answers to questions of sustainable and efficient energy provision, intelligent mobility, innovative medical care, and smart manufacturing.

Germany has established itself as a major microelectronics force, accounting for more than half of European microelectronics production. As the beating heart of Europe's semiconductor industry, the country ranks among the top locations worldwide.

Germany boasts one of the world's most thriving and innovative electronics sectors. The industry recorded turnover of EUR 178.9 billion in 2015, equivalent to a 4.1 percent increase. With a workforce of 85 thousand people, it is also Germany's second biggest manufacturing industry by number of employees. It is also the country's strongest manufacturing sector in terms of value added.

Microelectronics in Eastern Germany – Saxony

Germany is home to an impressive number of regional and national industry networks and clusters. The Free State of Saxony is Europe's biggest micro- and nanoelectronics location.

The city of Dresden boasts Europe's largest microelectronics cluster; around which a dynamic printed and organic electronics ecosystem has sprung up. As well as a strong semiconductor industry, the region also boasts expertise in the fields of microelectronics and microsystems, mobile communications, software, photovoltaics and future-oriented organic semiconductor technology (OLEDs).

Saxony has established itself as a major international semiconductor manufacturing center. The state boasts two of Europe's largest and most modern fabrication plants, and provides a base for a number of internationally leading concerns who are benefiting from the region's high-tech landscape and network of strong partners.

Today, around 2,200 companies with 58,000 employees are active along the entire microelectronics and ICT value chain. Dresden, the capital city of the Free State of Saxony, is also home to the world's first high-volume production line for power semiconductors on 300 mm wafers. These are important building blocks for reaching Germany's ambitious energy transition and efficiency goals as well as being enablers for tomorrow's mobility.

Saxony is also providing the answers of tomorrow with complementary cluster activities including the "Cool Silicon" and "Organic Electronics Saxony" initiatives which work on improving the energy efficiency of electronics and making large-area, organic electronics a reality.

With 11 Fraunhofer institutes, five Leibniz institutes and three Max-Planck institutes, the region also counts as one the most important research locations in Eastern Germany.

Microelectronics and ICT Sector in Saxony

Selected Key Data



2,200
Companies



ca. 58,000
Workforce
(industry and
research)



13 billion
Turnover
(in EUR)

Source: Sächsisches Staatsministerium für Wirtschaft, Arbeit und Verkehr, 2015

Silicon Saxony

Established as a network for the semiconductor industry by a group of 20 partners in 2000, Silicon Saxony represents Europe's largest microelectronics network.

Providing a communication and partnership platform for its members, Silicon Saxony was set up to strengthen the sustainability of the business location as an information and communication (ICT) location domestically and internationally. The association also promotes the development of new technologies and procedures through its working groups which provide a platform for dialogue between members and specialists. Knowledge transfer and intra-company synergies are created as a result of close cooperation within the network, further consolidating the region's reputation as a center of ICT excellence.

Today, Silicon Saxony counts as the biggest high-tech network for the microelectronics, smart systems, photovoltaic, software, and applications sectors in Europe. Silicon Saxony works closely with network partners at the national and international levels. As the project coordinator of the "Silicon Europe" initiative, the cluster also plays a major role in strengthening the European semiconductor industry in the global economy and value chain. The pan-European "cluster" promotes international collaboration in innovative micro- and nanoelectronics for a broad spectrum of cross-sectoral applications.

Silicon Saxony was awarded the GOLD label of the European Cluster Excellence Initiative (ECEI) for excellent cluster management in 2012, putting it among the first three clusters in Europe to receive the award. In 2015, Silicon Saxony was successfully awarded ECEI recertification.

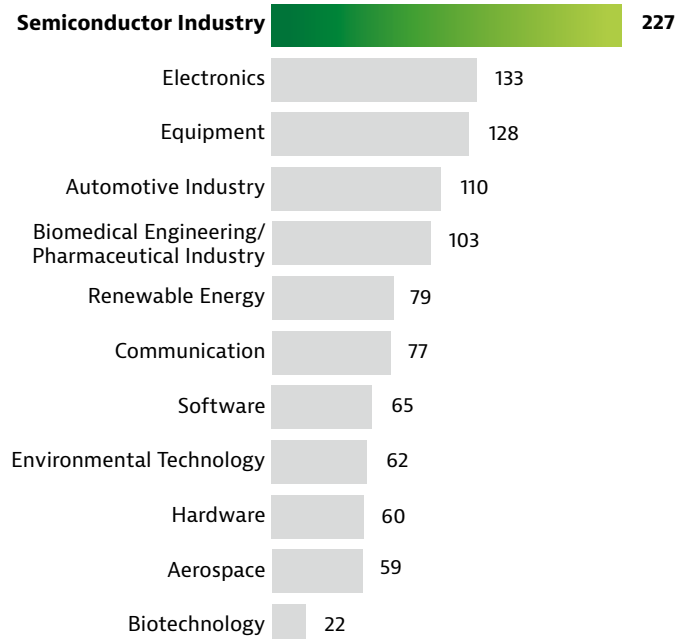
→ www.silicon-saxony.de

go-cluster

Silicon Saxony is a member of the Federal Ministry for Economic Affairs and Energy "go-cluster" cluster excellence program of more than 100 innovation clusters across Germany. The program provides financial stimulus – in the form of support for innovative services and funding for novel solutions – to optimize cluster management allowing member clusters to position themselves as highly effective and visible international clusters.

www.clusterplattform.de

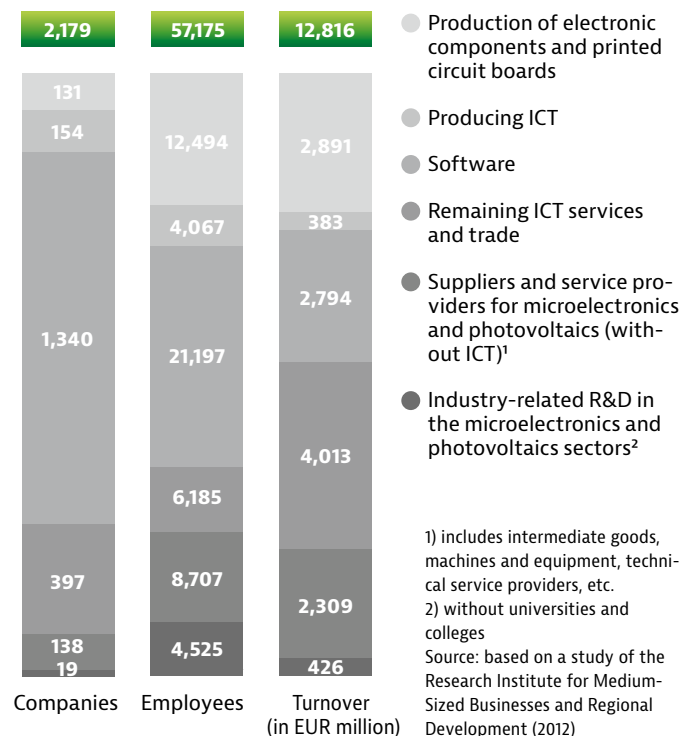
Silicon Saxony Cluster Membership by Industry Sector



Source: Silicon Saxony, 2016

Microelectronics / ICT in Saxony

Structure of the Industry Sector in Figures



Cluster Voices



Heinz Martin Esser
General Manager, Fabmatics GmbH

Roth & Rau - Ortner GmbH and HAP GmbH Dresden have merged to form Fabmatics GmbH. What does Roth & Rau - Ortner bring to Fabmatics?

Roth & Rau - Ortner (RRO) specializes in fab automation and fab logistic solutions for the global semiconductor industry. Besides complex system integration for fully automated manufacturing, we offer leading-edge products including, for example, self-navigating robots, tool-loading robots, RFID, and localization systems.

Why is Saxony an attractive microelectronics location?

Saxony is an excellent high-tech area with great diversification of microelectronic production, software providers, high-tech applications, researchers, and specialists. As a member of the Silicon Saxony Cluster, RRO has established close working relationships with large local customers. This has enabled RRO to increase the required skill set and necessary experience levels when working with high-tech semiconductor customers.

What does the future hold for Fabmatics GmbH?

As the General Manager of Fabmatics I am convinced that the merger between HAP and RRO will create a bright future for us in the fab automation market. Buzzwords like Industrie 4.0, Internet of Things and digitalization will create a special climate for potential investors to use fab automation for effective and smart production.

Company: Fabmatics GmbH (a merger of Roth & Rau - Ortner GmbH and HAP GmbH Dresden)

Activity: Production automation solutions

Employees: ca. 160

 www.fabmatics.com



Ricco Walter
Managing Director, SYSTEMA

What does SYSTEMA do?

SYSTEMA is a global provider of automation software solutions for the manufacturing industries. With a proven track record in numerous customer projects we are helping to enable Industrie 4.0: the fourth industrial revolution. Our experts develop, implement and support software solutions for multi-site integration of IT systems, global traceability and overall fab enhancement. With more than 20 years of expertise, we develop, design and implement automation and optimization software to increase efficiency, yield and quality in manufacturing operations.

What are the advantages of cluster membership?

Silicon Saxony is Europe's largest association for the semiconductor, electronic and microsystems industry, with the objective of strengthening the sustainability of the business region as a location for information and communication technology (ICT) at both the national and international levels. Being a long-term member of Silicon Saxony, SYSTEMA successfully contributes to partnerships with other member companies as well as to joint-marketing activities.

How important is internationalization to your activities?

Our customers are global – and so is SYSTEMA. To support high-tech manufacturing around the world, we established our first branch office in North America as long ago as 2009. The next step to extend our footprint and provide local services to customers in Asia was the opening of SYSTEMA Malaysia in 2014. The close cooperation that exists between the different sites promotes the best support and care for our customers worldwide.

Company: SYSTEMA Systementwicklung
Dipl.-Inf. Manfred Austen GmbH

Activity: Automation IT solutions

Employees: ca. 160

 www.systema.asia





Hans Mayer
COO, znt-Richter

What does znt-Richter do?

As a technology company and system integrator with more than 25 years' experience, znt-Richter stands for innovative and integrated IT solutions. Founded in 1991, the business group ranks among the pioneers of technologically advanced IT systems for the optimization of production processes. The company is a single source provider; offering a full range of products and services including comprehensive consulting, solution design, software development, software implementation, and support. znt-Richter's offerings help customers worldwide to advance their manufacturing processes and product quality, optimize valuable resources, provide benefits in reducing operating costs, increase production throughput, improve first pass yields, and accelerate innovation.

What are the advantages of cluster membership?

For many years, znt-Richter has been a member of Silicon Saxony e. V. and is actively engaged in several divisions that serve as an excellent platform for information exchange and technology transfer in the semiconductor, electronics, microsystems, and software industry. Activities such as joint booths at trade shows, forum visits, and business delegation trips among other things provide members with a great opportunity to present themselves in national and international markets. znt-Richter, with sites in Europe, Asia and the USA, is part of this strong community and actively strengthens innovative software solutions in the manufacturing environment.

Company: znt Zentren für Neue Technologien GmbH
Activity: Software automation and MES
Employees: 120

 www.znt-richter.com



Burkhard Stegemann
Sales Director, Fabmatics GmbH

HAP GmbH Dresden and Roth & Rau - Ortner GmbH have merged to form Fabmatics GmbH. What does HAP bring to Fabmatics?

Founded in 1991, HAP GmbH Dresden was a medium-sized German company located in Dresden. We develop and produce innovative clean robot systems for highly specialized environments. Our location at the heart of the European semiconductor industry makes hardware automation solutions in this industry a particular area of activity focus. Besides various products for automated carrier handling, we also offer wafer-handling solutions for wafer sizes from 100 mm to 450 mm. Mask handling, especially for EUV masks, is another focal point of our company.

Why is Saxony an attractive microelectronics location?

Within Europe, Saxony is a region without peer in terms of microelectronic value chain activity. It is no exaggeration to say that the state is home to one of the world's most innovative ICT clusters. The concentration of actors from the semiconductor, electronic and microsystems sectors provides the basis for a cluster philosophy that allows new solutions to be developed and manufactured in partnership to mutually advantageous effect.

What are the advantages of cluster membership?

Silicon Saxony membership is incredibly important to us as it puts our company and its activities right at the industry center of things. Being part of the cluster opens up new windows of opportunity in terms of R&D cooperation and knowledge transfer thanks to access to our fellow cluster members. Working together with partners in Europe's biggest microelectronics cluster also allows us to pool our resources to optimal marketing effect at trade shows and other events.

Company: Fabmatics GmbH (a merger of HAP GmbH Dresden and Roth & Rau - Ortner GmbH)
Activity: Production automation solutions
Employees: ca. 160

 www.fabmatics.com

Germany Trade & Invest Cluster Marketing Activities

Industry clusters – in which companies, research institutions and universities come together to join a particular industry in a geographical region – provide numerous partnership opportunities and synergy effects for their members. Member companies and organizations also benefit from the cluster umbrella brand when venturing into international markets.

Germany Trade & Invest's cluster marketing activities strengthen the internationalization of the Eastern German economy, and the global visibility of both Eastern Germany as an investment location and the cluster in the region. To this end, GTAI has already published the "INVEST. INNOVATE. INTERNATIONALIZE. Industry Clusters in Eastern Germany" booklet highlighting the innovative capacity and attractiveness of the new federal states as an investment location based on the example of a selection of industry clusters in Eastern Germany.

As part of GTAI's 2016/2017 activities, these clusters are now being individually presented in selected international target markets. GTAI provides the accompanying cluster representatives – companies, research institutions and cluster management – with the opportunity to learn more about their target markets and to expand and intensify their network of contacts.

GTAI Cooperation Forums allow cluster delegation members to enter into "matchmaking" discussions with local companies and institutions about potential partnership. Investor events at the selected locations allow Eastern Germany to be presented to foreign companies in order to generate cluster settlement interest. GTAI works closely with the respective federal state economic development agencies and cluster management.

Powerhouse Eastern Germany

GTAI activities that market Eastern Germany as a business location to the world are bundled together under the "Powerhouse Eastern Germany" umbrella brand. Prospective international investors are advised about market opportunities available in the new federal states.

GTAI's Powerhouse Eastern Germany division promotes the benefits of doing business in the new federal states to international investors as well as seeking to increase the opportunities of Eastern German businesses in the international marketplace. International business delegation and exchange trips play a central role in achieving this dual objective.

Powerhouse Eastern Germany branded conferences and trade fair visits and special events help communicate the message that the regenerated region has established itself as one of Europe's most attractive and innovative production and service locations.

Particular focus is attached to the region's strong and dynamic industry sectors including the renewable energies, chemical, mechanical engineering, automotive, biotechnology, and service sectors. All international companies interested in locating in Eastern Germany are supported by GTAI and the responsible economic development agencies of the respective new federal states.



OUR SERVICES

About Us

Germany Trade & Invest (GTAI) is the economic development agency of the Federal Republic of Germany. The company helps create and secure extra employment opportunities, strengthening Germany as a business location. With more than 50 offices in Germany and abroad and its network of partners throughout the world, GTAI supports German companies setting up in foreign markets, promotes Germany as a business location and assists foreign companies setting up in Germany. All investment services and related publications are free of charge.

Investment Location Services

- Market and industry reports
- Market entry analyses
- Business and tax law information
- Business and labor law information
- Funding and financing information

Business Location Services

- Legal and tax-related project support
- Funding and financing advisory services
- Site visit organization
- Local partner and network matchmaking
- Public and private partner coordination

Imprint

Publisher

Germany Trade and Invest
Gesellschaft für Außenwirtschaft
und Standortmarketing mbH
Friedrichstraße 60
10117 Berlin
Germany

T +49 (0)30 200 099-555
F +49 (0)30 200 099-999
invest@gtai.com
www.gtai.com

Executive Board

Dr. Benno Bunse, Chairman/CEO
Dr. Jürgen Friedrich, CEO

Editor

William MacDougall,
Germany Trade & Invest

Order Number

20864

Authors

Eastern Germany Team:
Vanessa Becker,
vanessa.becker@gtai.com
Electronics & Microtechnology Team:
Max Milbredt, max.milbredt@gtai.com
Marketing Team:
William MacDougall,
william.macdougall@gtai.com

Layout

Germany Trade & Invest

Print

inpuncto:asmuth druck + medien gmbh,
Köln

Picture Credits

Front page: GLOBALFOUNDRIES/Sven
Döring; Map of Germany: fotolia/Arta-
lis-Kartographie; Portraits: All photos
courtesy of their respective owners

Notes

All rights reserved ©Germany
Trade & Invest, October 2016

Reproduction, in whole or in part,
only permissible with express prior
authorization. All market data provided
is based on the most current market
information available at the time of
publication. Germany Trade & Invest
accepts no liability for the actuality,
accuracy, or completeness of the infor-
mation provided.

Supported by:



on the basis of a decision
by the German Bundestag

Supported by:



on the basis of a decision
by the German Bundestag