CZECHINVEST
Drive for success

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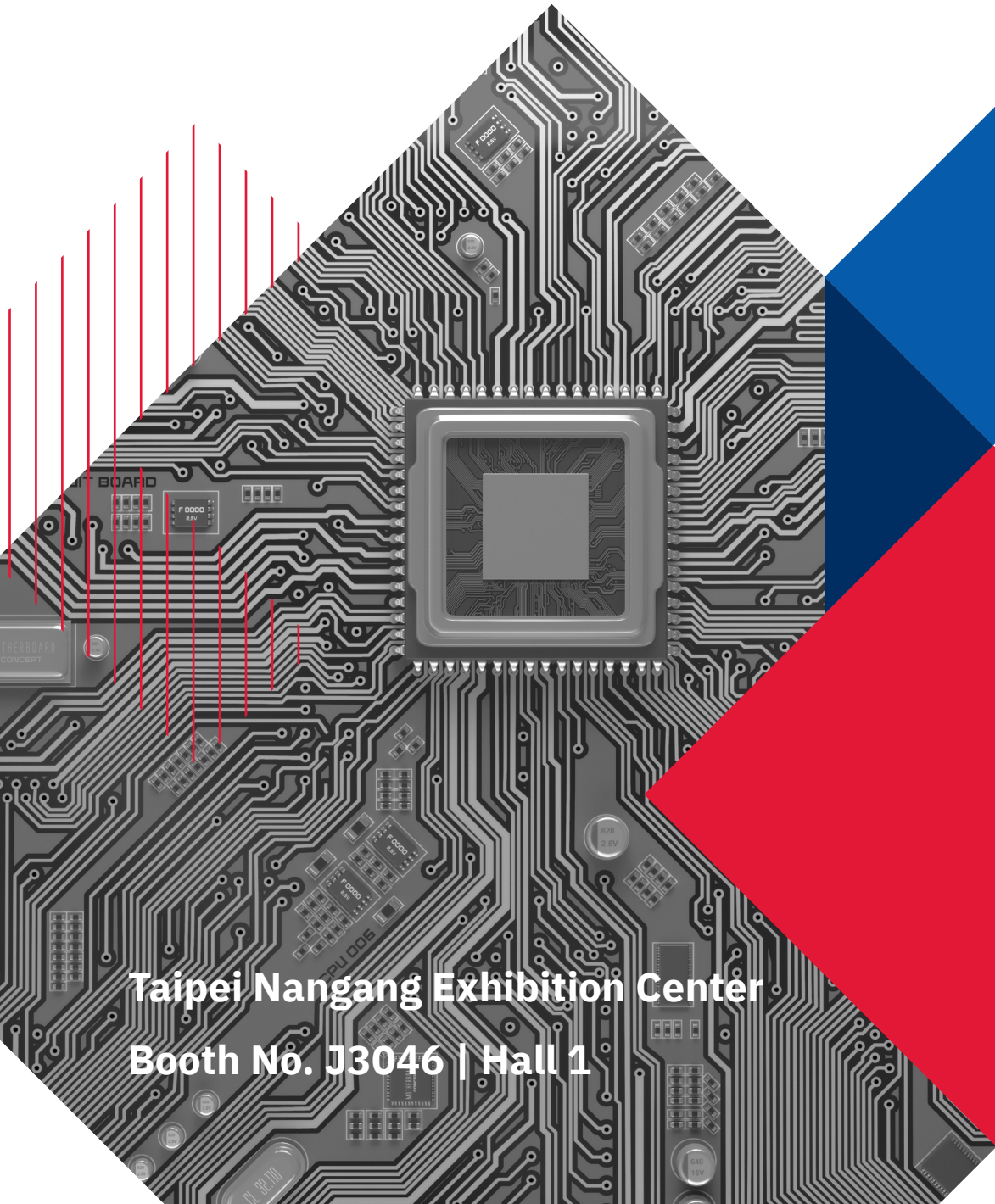
CZECH ECONOMIC AND CULTURAL OFFICE

Catalogue
Czech Pavilion



2024

Taipei Nangang Exhibition Center

Booth No. J3046 | Hall 1

Welcome to the Czech Pavilion

Czechia stands at the forefront of technological innovation, playing a pivotal role in the global semiconductor industry. Renowned for its advanced manufacturing capabilities and highly skilled workforce, the country has become a critical hub for semiconductor production and research.

A cornerstone of the Czech semiconductor sector is its remarkable contribution to the global electron microscopy market. An impressive **30% of the world's electron microscopy instruments** are produced right here, underscoring the country's leadership in precision technology and innovation. In addition to electron microscopy, Czechia excels in wafer and chip production. Each year, our state-of-the-art facilities produce approximately **3 million wafers**, which serve as the foundation for a multitude of semiconductor applications. Moreover, the Czech semiconductor industry manufactures an astonishing **3 billion chips** annually, meeting the high demand for electronic components that power devices and systems worldwide.

This catalog aims to provide you with an in-depth look at Czechia's semiconductor sector, highlighting our achievements, capabilities, and the dynamic ecosystem that supports continuous growth and innovation. Within these pages, you will discover unique R&D institutions, prestigious universities, and leading companies that drive the semiconductor industry forward.

Unlock New Opportunities with Czech Economic and Cultural Office in Taipei: Connecting the Czech Republic and Taiwan

Our Office is your gateway to fostering valuable connections between the Czech Republic and Taiwan in both the business and scientific arenas. We spearhead a variety of high-impact projects and activities designed to ignite collaboration and innovation.

Join our exclusive events to meet potential partners, including traders, distributors, researchers, and more. Whether you are looking to launch joint ventures or groundbreaking research, we are here to connect you with the right opportunities.

Explore a wealth of business and research possibilities, including funding and collaboration opportunities across diverse sectors—not just in semiconductors. Experience firsthand the potential of Czech-Taiwanese partnerships by joining our events in Taiwan and in the Czech Republic.

Do not miss out on these exciting opportunities.
Contact us today at **Taipei.Commerce@mzv.gov.cz** to start your journey!

Contact

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About CzechInvest

CzechInvest plays a key role in the area of supporting business and investments in its comprehensive form. The agency's unique combination of regional, central and international operations ensures the integrity of services and the ability to connect global trends with regional conditions in Czechia. One of CzechInvest's main objectives is transformation of Czechia into an innovation leader of Europe. Established in 1992, CzechInvest is a state contributory organization subordinate to the Ministry of Industry and Trade of the Czech Republic.

In the 30 years of our existence, we have negotiated investments worth nearly **CZK 1.15 trillion**, which have generated more than **307,000 jobs**. We supported nearly **400 startups** and sent them on **236 foreign missions**. Every day we meet with regional entrepreneurs and have contributed to the regeneration of **1,255 brownfield sites**. A significant part of our work is supporting domestic large, medium and small businesses, startups and individuals with good ideas. Because that's where it always starts. Increasingly, we are focusing on high-tech and innovative projects, because we are striving to make Czechia one of the European innovation leaders.

CzechInvest's Services

- **Information and advice on doing business in Czechia**
- **Detailed, sector-focused market information and value analysis**
- **Identification of business properties and suitable locations**
- **Identification of potential business partners, suppliers and acquisition targets**
- **Access to a broad spectrum of financial support**
- **Connecting business and R&D partners**
- **Organising visits of foreign investors to Czechia**
- **Aftercare services**

All services are provided free of charge

Contact

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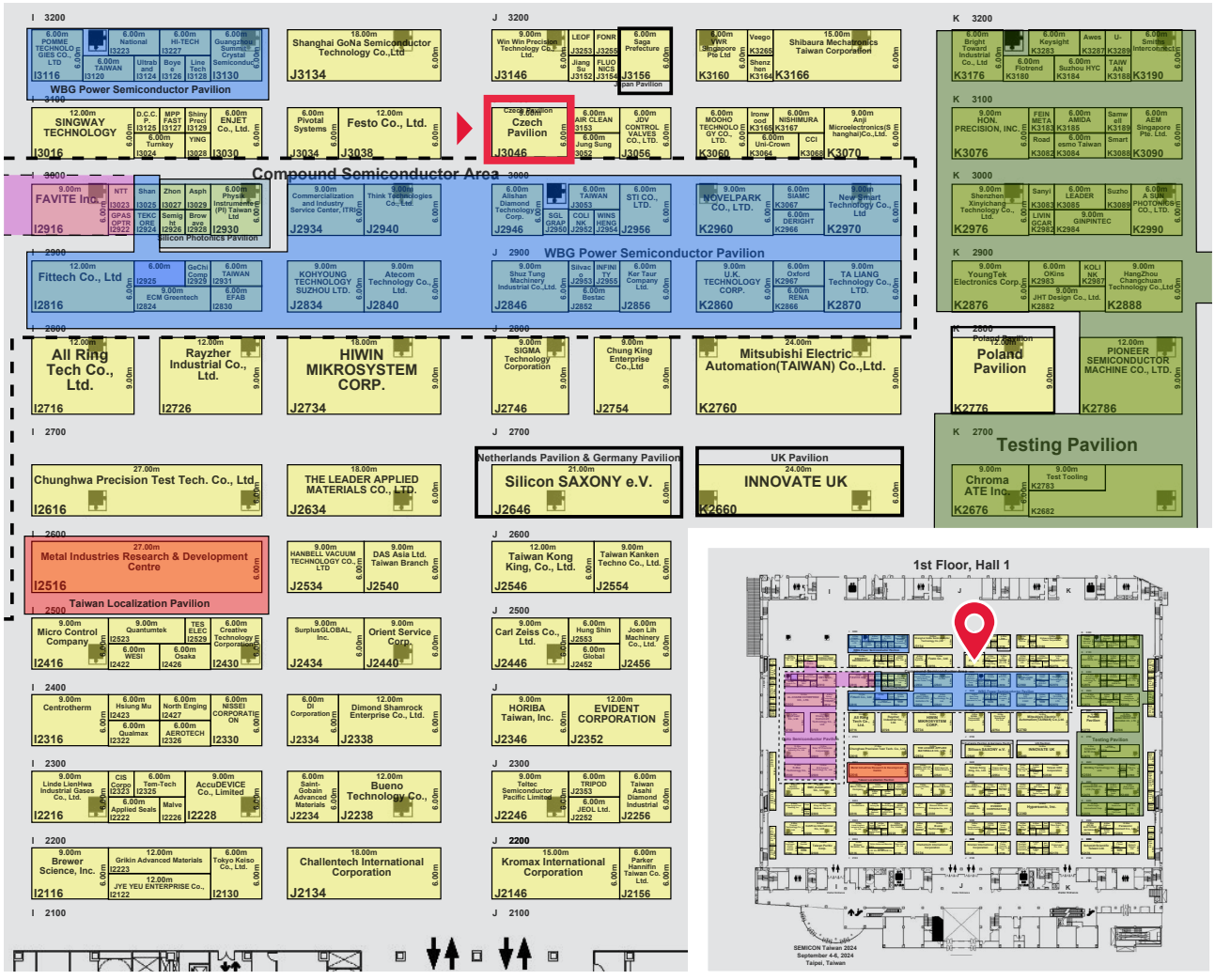
List of Czech Exhibitors

- Brno University of Technology
- CTP
- Czech National Semiconductor Cluster
- ELI ERIC
- HiLASE Center, IoP, CAS
- Inference Technologies
- Onsemi
- SVCS Process Innovation
- Vakuum Servis s.r.o

You Will Find Us Here: Booth No. J3046, Hall 1



Brno University of Technology

Your partner for chip design & semiconductor technologies

Introduction

Established in 1899, BUT is the largest technology university in Czechia, located in Brno. We are focused on many areas of technology like Electrical Engineering (including semiconductors), ICT, Mechanical Engineering, Civil Engineering, Architecture, Chemistry, Business and Management, Fine Arts and many others.

Summary

Our high-skilled academics and researchers deal with design and verification of custom integrated circuits (analog, digital, mixed-mode) in recent design technologies including SiC. The largest academic clean rooms facility in Czechia is 24/7 available for students, academics, researchers and industry. We are also experienced in physics of semiconductors and materials beyond CMOS. We are a member of Czech National Semiconductor Cluster (CNSC) www.semicz.cz. The hub consists of several faculties with many research and development and education activities in the area of chip design, semiconductor technologies and important facilities.

Products and services

Faculty of Electrical Engineering and Communication (FEEC)

- Design and verification of ASICs
- ASIC´s packaging and interconnections
- Special space applications
- Cyber security systems
- Sensor applications and nanotechnology
- High-valued graduates in microelectronics

Faculty of Mechanical Engineering (FME)

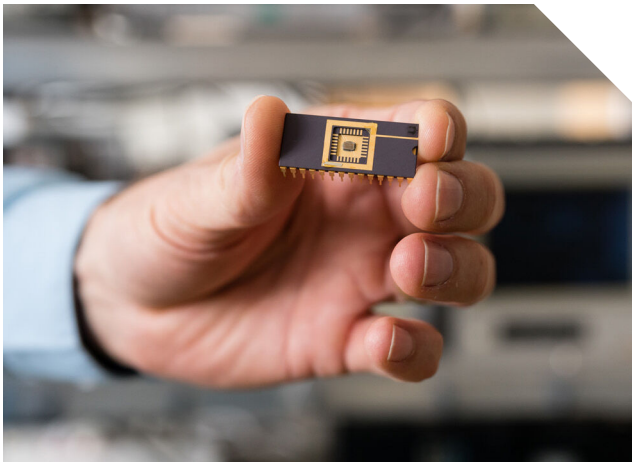
- Physics of semiconductors
- Instrumentation and analytics
- Semiconductors beyond CMOS
- Quantum optics

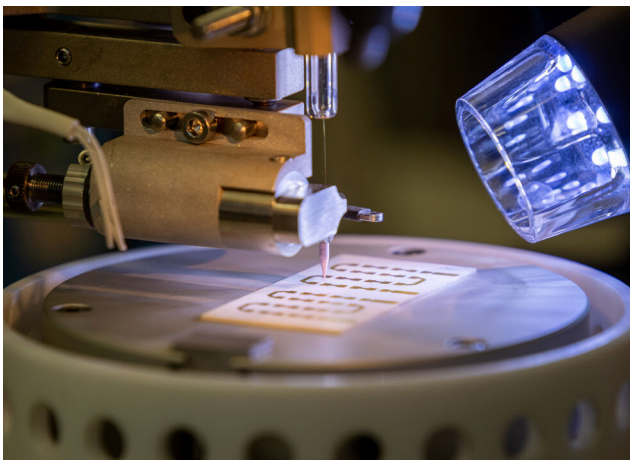
Central European Institute of Technology (CEITEC)

- Largest academic clean rooms facility in Czechia
- Up-to-date semiconductor small series production line
- Top R&D center of excellence in EU

Faculty of Information Technology (FIT)

- Digital circuits for high-performance and energy efficient computing
- RISC-V core design
- Image processing cores and object detection systems





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CTP

Parkmakers

Introduction

As the largest integrated network of full-service high-tech business parks in Europe, spanning over 200 locations across 10 countries from the North Sea to the Black Sea, CTP creates dynamic ecosystems that supply pan-European markets. In these thriving environments, you'll discover global leaders in high-tech manufacturing, advanced R&D, logistics, e-commerce, and business support. Our Parkmaker ethos takes industrial property to the next level.

Summary

Our in-house teams oversee every facet of the client journey, from site selection and design to construction, fit-out, and long-term property management. We collaborate closely with local municipalities and universities, playing a pivotal role in fostering local economic growth. As your strategic partner, we go the extra mile to ensure you have the facilities and support you need, enabling you to stay laser-focused on your core activities. CTP is the largest listed owner, developer and manager of logistics and industrial real estate in terms of gross leasable area, with 12.0 million sqm GLA in 10 countries (as at 31 March 2024). The company certifies all new buildings under BREEAM at 'very good' or above and has achieved a 'Low-Risk' ESG rating from Sustainalytics, reaffirming its commitment to sustainability.

Products and services

Full service industrial development

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Czech National Semiconductor Cluster

Stronger together!

Introduction

CNSC integrates all important players in the Czech semiconductor ecosystem including universities, industry, national and regional governments, development agencies and other stakeholders to create strong and tight cooperating network leading to be a very important partner for foreign partners.

Summary

Czech National Semiconductor Cluster (CNSC) provides the most effective approach to align with experts and join Czech semiconductor value chain ecosystem, consisting of top Czech academia institutes, leading companies and their supply chain, startups, regional innovation centers. Cluster is integrated to EU clusters network and new EU Semiconductor Regions Alliance for EU Chips Act. Cluster is based on experts for different parts of semiconductor value chain, so offers easy alignment for the particular part of the chain, but keeping wide strategic approach as well. Alignments are not limited only for Czechia.

Products and services

Extensive and innovative supply chain includes vendors of world wide delivered equipment for manufacturing, AI assisted manufacturing processes or furnaces.

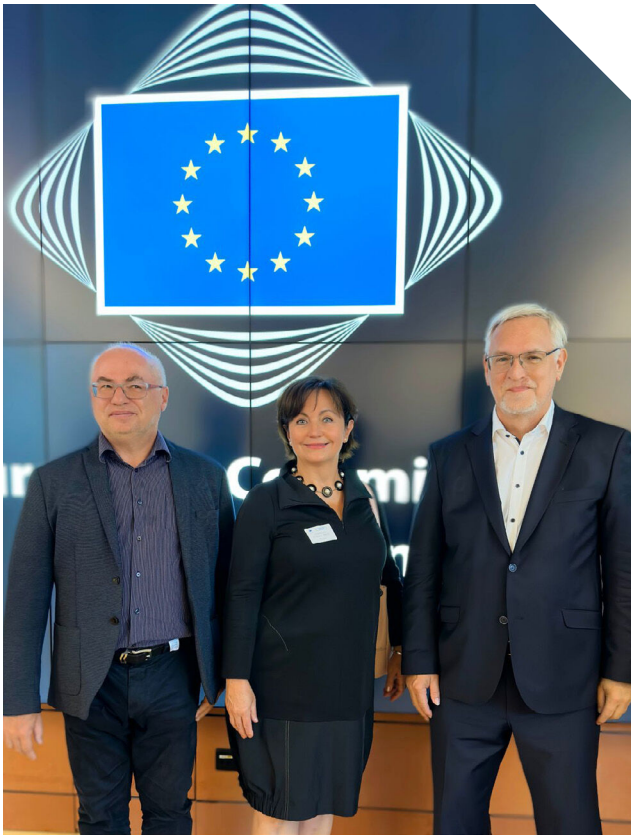
Example of the contribution is new processor platform RISC V, Cloud EDA Tools and IP distribution, semiconductor centres of competence etc.

CHIPS of Europe

Creating Higher-Education Industry Programmes for the Semiconductor Industry of Europe

Project summary

Call:	DIGITAL-2023-SKILLS-04-SEMICONDUCTORS - Reinforcing skills in semiconductors
Duration:	June 2024 – May 2028
Budget:	9,53 M€
Partners:	22
Coord.:	University of Applied Sciences Munich



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ELI ERIC

High-power ultrashort lasers for semicon applications

Introduction

ELI ERIC is the world‘s largest and most advanced high-power laser infrastructure and a global technology and innovation leader in high-power, high-intensity, and short-pulsed laser systems.

Summary

ELI ERIC provides access to a broad range of world-class high-power, high repetition-rate laser systems generating ultrashort pulses of EUV, X-rays, protons, ions, electrons, and neutrons. This enables cutting-edge research and new regimes of high intensity physics in physical, chemical, medical, and materials sciences. The facilities are located in Dolni Brezany, Czechia, and Szeged, Hungary.

Products and services

- Laser-driven X-ray wafer inspection
- Optical spectroscopy
- Material imaging and analysis

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HiLASE Center, IoP, CAS

Real Lasers for the Real World

Introduction

HiLASE Centre, a part of the FZU - Institute of Physics of the Czech Academy of Sciences and the holder of the Centre of Excellence title, stands for top-class research on an international level. We emphasized an active policy combining excellence in fundamental research with technological developments to produce knowledge and innovation. Our mission is to push the boundaries of laser technologies beyond their current limits, search for new applications and contribute to the prosperity of the economy, daily lives of people, and sustainable future. HiLASE serves as a bridge between the academic world and hi-tech industry.

We focus on the experimental development of a new generation of high-energy diode-pumped solid-state laser systems with high repetition rates. Thanks to the breakthrough technical parameters, our lasers are unique, and you cannot find their equivalents anywhere else. By employing cutting-edge diode pumping technology, HiLASE lasers are significantly more powerful and efficient, more compact, more stable, and easy to maintained.

We also develop laser applications for various industries, such as semiconductors, aerospace, display, glass, defense, etc. HiLASE holds a record in laser multibeam processing with more than 40,000 beams processing simultaneously. We help our partners to have more efficient and reliable processing, strengthening their competitiveness.

Summary

In 2021, the BIVOJ laser surpassed its own record set in 2016 by consistently achieving the pulse energy of 145 J at 10 Hz, almost 40% more than 5 years ago. We also achieved further world records, in multi-beam laser nanostructuring and also in the speed production of laser-induced periodic nanostructures on a stainless steel surface, both operated by the laser system PERLA.

Products and services

- Perla 100 Laser
- GoPico Laser
- Laser Induced Damage Threshold testing
- Laser Micromachining and surface functionalisation
- Mulitbeam lase processing
- Laser Schock Peening

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Inference Technologies

AI Powered Semiconductor Manufacturing

Introduction

Inference Technologies is pushing the boundaries in the semiconductor manufacturing data landscape by delivering cutting-edge predictive systems and dynamic data analysis solutions. By leveraging the capabilities of our DeepFab technology, we integrate multiple AI and ML systems to capitalize on historical data. This approach ensures that the Fab‘s customers consistently receive devices of the highest quality.

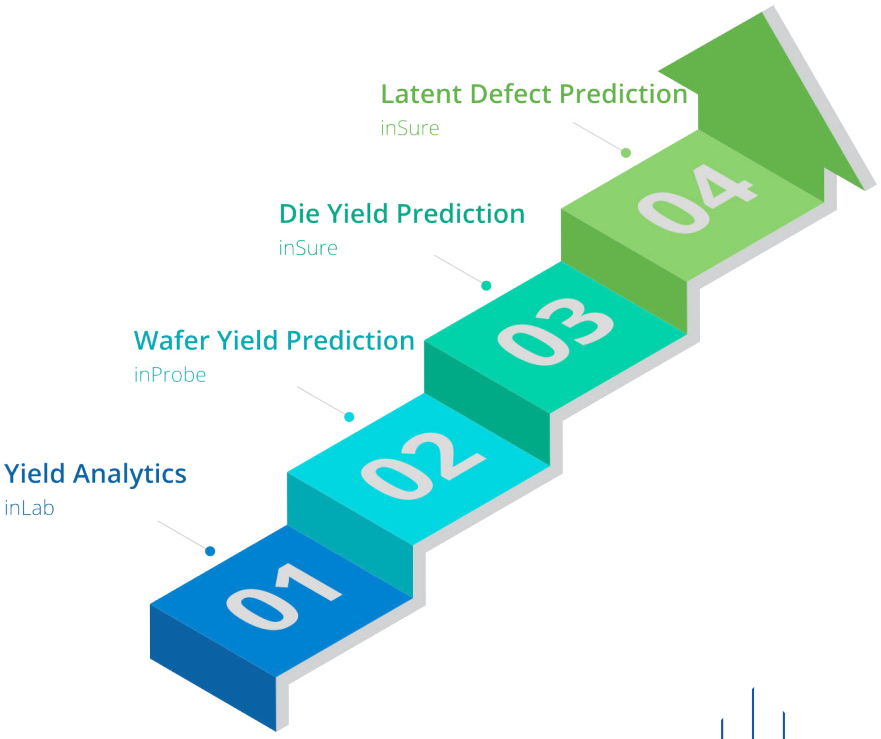
Summary

Founded in 2015 and headquartered in Czechia, our company also maintains a representative in Taiwan.We specialize in applying AI and ML analytical and predictive systems to semiconductor manufacturing.

Products and services

We focus on research and development of AI/ML-based systems for manufacturing processes, using process and quality control data. Our innovations include:

- A real time wafer yield prediction technology that allows the Wafer Sort stage to be skipped if the predicted yield exceeds a financially justified threshold.
- An engine for automated and cost-effective screen out of dice with potential reliability risk.
- A platform for root cause analysis of yield excursions, inclusive of proposing hypotheses for process adjustments.



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Onsemi

Intelligent Technology. Better Future.

Introduction

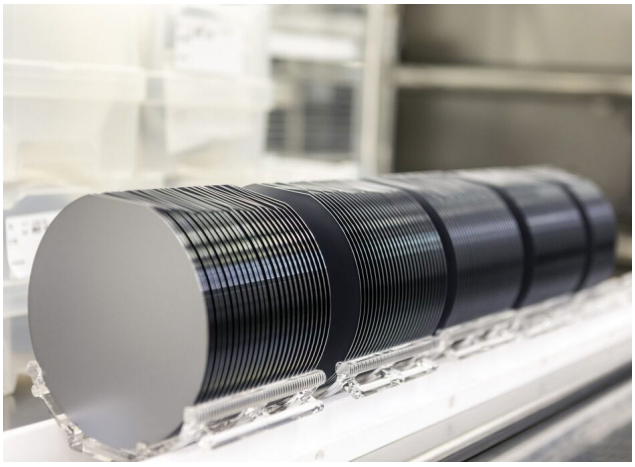
Onsemi is driving disruptive innovations to help build a better future. With a focus on automotive and industrial end-markets, the company is accelerating change in megatrends such as vehicle electrification and safety, sustainable energy grids, industrial automation, and 5G and cloud infrastructure. With a highly differentiated and innovative product portfolio, onsemi creates intelligent power and sensing technologies that solve the world's most complex challenges and leads the way in creating a safer, cleaner, and smarter world.

Summary

Onsemi activities in Czechia includes R&D and manufacturing of semiconductor material and devices in the ON SEMICONDUCTOR CZECH REPUBLIC, new product development and design system technologies in the SCG Czech Design Center (Rožnov pod Radhoštěm) and in the ON Design Czech (Brno). Our history is linked to former state enterprise TESLA, found in 1949 with focusing on electrotechnics with key milestone 1957 – first Ge transistor produced and 1967 – first integrated circuit (IC) produces, just few years after the first demos. MOTOROLA became strategic shareholder in Roznov's wafers fab by 1997 and with next spun-off of standard semiconductor product group in 1999, we became part ON SEMICONDUCTOR corp., today onsemi (NASDAQ: ON, www.onsemi.com)

Products and services

Onsemi in Czechia operate as an entity fully integrated into onsemi global supply chain. Or key activities are focused on new product development for intelligent power and intelligent sensing applications, technology development and semiconductor polished and epitaxial wafers mass production (> 3 mil. wafers/year) and 6"/8" wafer fab (> 1 mil. wafers/year or > 3 bil. chips/year). Our engineers are proud originators of >300 international patents and onsemi with >2 thousand employees represent real leader of semiconductor industry and research in Czechia. We are member of the Czech National Semiconductor Cluster (CNSC), which represents national semi-conductor ecosystem, including development of business cooperation within Europe, North America and Asia.



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SVCS Process Innovation

Semi Tools for Full Life

Introduction

Front-end Semiconductor equipment manufacturer from the Heart of Europe.

Summary

Our experience is based on a long history and tradition of the semiconductor industry in former Czechoslovakia, in a place called the Czech Silicon Valley. Founded in 2000. Since then we have been striving towards development of the tomorrow's tools and tomorrow's process innovations. To do this successfully, we cooperate with leading R&D laboratories, universities and scientific institutes. SVCS has delivered installations for customers all over the Planet, for example: Australia, Belarus, France, China, India, Japan, Korea, Lithuania, Malaysia, Poland, Russia, Slovakia, Taiwan and the USA.

Products and services

- Horizontal/Vertical Furnaces designed for all standard Atmospheric/CVD Processes suitable for Full Production.
- Compact Tabletop Furnaces and Single Wafer Reactors designed as a compact solution for R&D sector like institutes or laboratories.
- Ultra High Purity Gas Delivery Systems like Gas Cabinets, Valve Manifold Boxes and custom production of gas manifolds.
- All SVCS tools are driven by SV-Con, our in-house designed robust control system, which can also be adjusted for refurbishments of third party equipment.

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Vakuum Servis s.r.o.

Vacuum is nothing, but everything for us.

Introduction

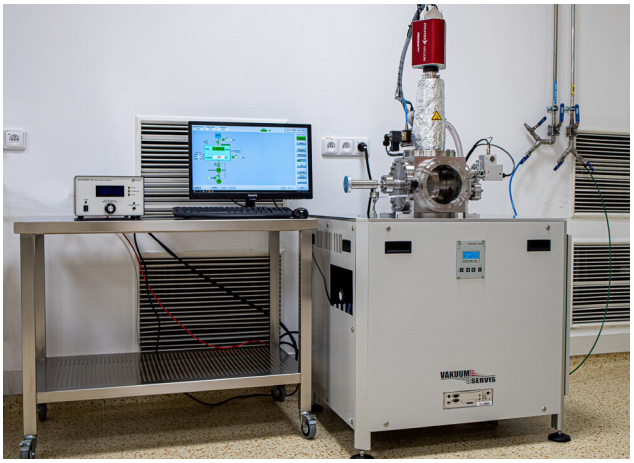
Focusing on design, development and production of vacuum furnaces, coating systems, industrial HLDS, customized vacuum systems. We are located in Czechia, our distributor in Asia is company WESI Technology

Summary

Vakuum servis s.r.o. specializes in the design and construction of vacuum pumping stations, vacuum furnaces, helium leak detection systems, and vacuum coating systems. We also refurbish and upgrade vacuum production systems and assemble vacuum systems as turnkey customized solutions according to individual needs. Additionally, we are an authorized Pfeiffer Vacuum service center.

Products and services

- Customized vacuum systems
- Sputtering and evaporation equipment
- UHV degassing furnaces
- Cleaning and RGA analysis tools



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