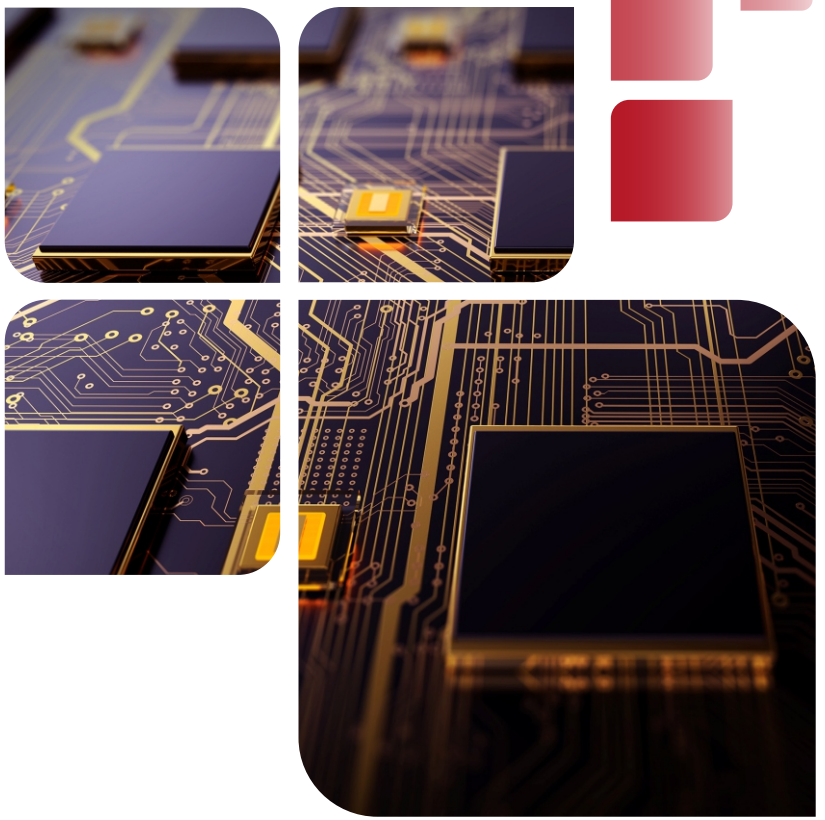
PAIH
PFR Group

PFR
Polish Development Fund

arp
Industrial Development Agency JSC

Łukasiewicz
Research Network



Poland's National Pavilion

SEMICON Taiwan 2023
September 6 - 8, 2023

Published by the Polish Investment and Trade Agency

Warsaw, 2023

Why Poland?

Why Poland?

Largest inflow of foreign workers from outside the EU

THE CEE's REGIONAL LEADER

5th population in the EUROPEAN UNION

37+ mln CITIZENS

~59 % of the population at WORKING AGE

~9.6 mln Poles under the AGE OF 25

504+ thousand PERMITS ISSUED FOR EMPLOYMENT

Statistics Poland

STABLE AND STRONG ECONOMY

6th largest economy

Poland is the sixth largest economy in the European Union, closely behind Germany, France, Italy, Spain and the Netherlands

Unprecedented growth

Highest growth rate in the OECD between 1990 and 2019

Resilient economy

Stable economic growth for the last 30 years
Over 10 years of stable growth in foreign trade turnover

Ratings remain high despite turbulent times

Moody's: A2 | S&P.: A- | Fitch: A-

RESISTANT TO CRISIS

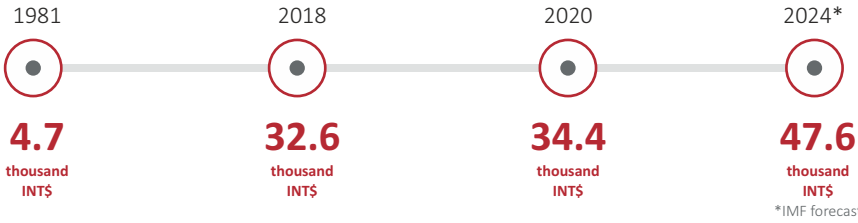
Poland has only experienced a recession once since 1989 – in 2001 – and that one lasted just a few months. It was thanks to a diversified and competitive economy that Poland's GDP growth remained strong – even through the financial crisis of 2008.

Despite turbulence in international markets, Poland's economy is doing well. According to estimates, Poland's GDP in 2022 was almost 5% higher in real terms compared to 2021.

MACROECONOMIC CERTAINTY

Poland is considered to be one of the most economically stable and fastest developing countries in the world.

GDP PER CAPITA (current prices, PPP INT$- international dollars)



GDP Growth 2013-2022 (constant prices)
(CAGR- compound annual growth rate)

+4.02%
annually

According to International Monetary Fund

The unemployment rate is one of the lowest in more than 30 years:

5.0%
July 2023

According to Statistics Poland

GENERAL GOVERNMENT GROSS DEBT (% of GDP)

51.18%
of GDP (2020)

53.76%
of GDP (2021)

49.58%
of GDP (2022, forecast)

50.69%
of GDP (2023, forecast)

According to International Monetary Fund

LARGE, HIGH-QUALITY TALENT POOL

300k+ of well-educated graduates annually

Academic Hub with over 1.2 million students

350k of well-educated graduates annually

20% engineering | technical majors

~23%

of total Poland's population with higher education

Incentives in Poland highest levels in the EU:

CIT exemption,
between 10 and 15 years tax free in whole of Poland

Cash grants
for strategic projects

Real Estate Tax
exemption in many muncipalities

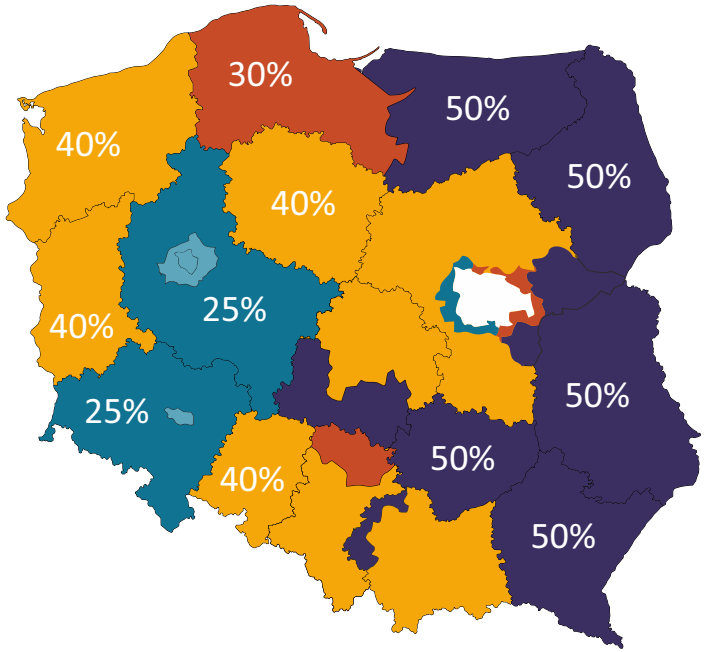
IP BOX 5% tax rate for income generated from intellectual property rights, one of the lowest of all developed countries

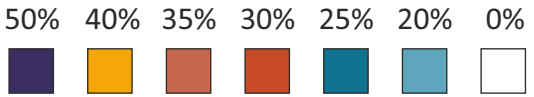
R&D Tax Relief
up to 200% of expences may be deducted from the tax base

EU funds – incentives for innovative projects, research and development, for low-carbon solutions

Other reliefs: prototype tax relief (30% of additional deduction from tax base), robotization tax relief (costs of purchase or leasing of new industrial robots used in the production proces), lump sum CIT (dedicated to companies and partnerships held by investors being natural person)

Maximum levels of support for 2022-2027 in different regions in Poland:





For more information scan the QR Code and go to „Doing Buissnes in Poland" guidebook:

Research and Development activities in the semiconductor sector in Poland

Semiconductor technologies in Poland are currently considered to be a dynamic and promising sector within local technological field. With growing emphasis on innovation, research, and development, Poland is poised to leverage its strong educational foundation and skilled workforce to capture a significant share of the global semiconductor market.

The Polish semiconductor R&D sector can be divided into:

- the area of education involved in the creation of targeted teams of specialists (microelectronics is present at all major technical universities in Poland),
- the area of research conducted in research institutes such as Łukasiewicz-IMIF or UNIPRESS,
- technical universities in Warsaw, Wroclaw, Gdansk and Lodz,
- R&D departments operating in enterprises e.g. Vigo Photonics or Dacpol.

R&D activities conducted by Łukasiewicz – Institute of Microelectronics and Photonics (IMiF), the largest research institute in the country, include GaN-based instrument technologies, optoelectronic circuits and applications – in particular integrated infrared photonics systems, sensor systems based on silicon technology and specialized ASIC integrated circuits.

Research activity is carried out both in the field of basic research and applied research towards the needs of various industries (from electronic manufacturing services through household appliances, medicine to defense and space applications). R&D significantly stimulates the growth of SMEs and technological development.

Poland's semiconductor industry has experienced steady growth in recent years, driven by factors such as increasing demand for electronics, the rise of Internet of Things (IoT) devices, and the ongoing digital transformation across various sectors. The country boasts a robust ecosystem of semiconductor manufacturers, research institutions, and skilled professionals, creating a conducive environment for innovation and technological advancement. The Polish education system intensively supports this ecosystem rising quality, creating suitable fields of studies within the physics, mathematics and engineering.

The semiconductor market in Poland is poised for growth, driven by its skilled workforce, research capabilities, and strategic advantages. As the demand for advanced electronics continues to expand across diverse sectors, Poland has the potential to emerge as a significant player in the global semiconductor landscape and be an important element in the world-wide semiconductor value chain.

By capitalizing on its strengths, fostering innovation, and forging strategic partnerships, Poland positions itself as a hub for semiconductor research, development, and manufacturing, contributing to its economic growth. Today, Polish industry includes all EMS suppliers, PCB manufacturers, component distributors, equipment manufacturers and distributors, and high-tech engineering companies.

Łukasiewicz
Institute of Microelectronics
and Photonics

The Polish Microelectronics and Photonics Industry

Due to multiple technological and business links the microelectronics and photonics in Poland is considered one wide industrial ecosystem. This is reflected in the name of the main research institute in this field: The Łukasiewicz-Institute of Microelectronics and Photonics, but most of all it is visible in the ever increasing cooperation between the companies opperating on the market.

There are approx. 300 companies in Poland in the area of microelectronics and photonics, with 90% of them being small and medium sized private enterprises. The Polish microelectronics and photonics industry manufactures materials, components, devices, systems and applications. The industry is mostly export-oriented, with The Top 3 markets being: Europe, USA & Canada, Asia (excl. continental China).

Main products and services:

- IC and Photonic IC (PIC) design-services
- Compound semiconductor materials (GaN, SiC, III-V)
- OLED and PV materials, quantum dots
- Graphene and photonics crystals
- IR detectors & modules, quantum cascade lasers
- Computer memory
- Industrial femtosecond lasers
- Printable semiconductors systems and materials
- Optical metrology devices and systems
- Special applications optics, thin film coatings
- Specialty optical fibres

The Polish microelectronics and photonics industry has 4 strong development drivers:

- strong talent base
- successful industry & academia collaboration
- commitment to quality
- long-term business links with international partners.

Poland has a large pool of diversified talents with solid prospects for the future, being placed best in the EU in the percentage of female STEM graduates (43%) and successfully attracting IT and technology experts from abroad. There are 6 major academic hubs across the country with over 10 universities educating students and conducting research in microelectronics and photonics. Every year there are more university spin-offs and startups in these areas. The market leaders are also involved in close collaboration with several Polish and international universities.

The major companies in the industry have been present on the international markets for over 30 years. The Polish microelectronics and photonics industry is well recognised for its high quality and unique technologies. Products from Poland are successfully used in the most demanding applications on this and other planets- such as space exploration, EUV lithography, high-frequency trading and defence. New technologies are being tested by global market leaders for semiconductor integration, autonomous mobility or VR.

The industrial base is still expanding, with modern manufacturing plants being built across the country. Polish manufacturers facilities are being complemented by a growing number of global leaders such as, Intel, LG, Corning or Trumpf. This trend will increase even more with new investments under the European Chips Act.

Industry integration and collaboration is supported by the Microelectronics, Electronics and Photonics Cluster - an industrial alliance recently established by major Polish businesses and research organisations.








PPTF
Polish Technological Platform on Photonics

Organizers of National Pavilion

Key areas of Polish Investment and Trade Agency

EXPORT

Supporting Polish Exports with particular emphasis on SMEs. Only in the first half of 2023, with PAIH support:

1. 333 export contracts signed, worth over 25 mln. EUR
2. 4721 Polish and 1426 foreign clients supported
3. Over 2600 B2B meetings organized

INVESTMENT

Facilitating investments in Poland and abroad Support of FDI in Poland

1. 25+ years of service for foreign investors looking to invest in Poland
2. 1000+ total projects completed in Poland
3. 30 bln. EUR total estimated projects value, pledged to create over 250 thous. new workplaces

PARTNERSHIP

Cooperation with public administration and business environment institutions in the implementation

Where Can You Find Us?

Network of Foreign Trade Offices (ZBH)

COMPANY NAME: Polish Investment and Trade Agency

WEBSITE : www.paih.gov.pl/en

FORM OF COOPERATION: Export and investment consultancy, partnership.

PRODUCTS / SERVICES: We offer comprehensive services for entrepreneurs, combining industry competences with international experience. We help entrepreneurs select their optimal foreign expansion path, overcoming administrative procedures for specific projects, the development of legal solutions, finding a suitable location as well as reliable partners and suppliers.

We are a leader in export and investment consultancy, operating on dozens of markets around the world. As the first contact point it is a partner for entrepreneurs on the domestic and foreign markets.

PAIH's mission is to increase the inflow of foreign direct investments to Poland, as well as supporting the internationalization of Polish companies. We operate both in Poland and through our Foreign Trade Offices (ZBH) abroad.

We are committed to promoting Poland and the Polish economy. We aim to increase the awareness of Polish brands on international markets. We promote national products and services, as well as Polish innovative information technology.

PFR
Polish Development Fund

Investments for Poland

We come together to develop practical solutions for our shared success and a secure future.

The Polish Development Fund Group is a group of financial and advisory institutions for entrepreneurs, local governments and individuals investing in sustainable social and economic development of our country.

Hotline: 800 800 120

www.pfr.pl

COMPANY NAME: Polish Development Fund S.A. (PFR)

WEBSITE : www.pfr.pl

FORM OF COOPERATION: Infrastructure and financial investments, innovations, entrepreneurship development, export and foreign expansion of Polish enterprises

PRODUCTS / SERVICES: A strategic company offering instruments for the development of enterprises, local governments and private individuals, investing in sustainable social development and economic growth in the country.

As the PFR, we have undertaken capital investments in innovative companies such as PESA Bydgoszcz, Chmura Krajowa, or WB Group. We have also managed the area of investments in the innovation ecosystem, through investments in startups and the development of innovation in Poland.

Within the PFR Green Hub strategy, we promote investments in the construction of the RES sector, supporting the creation of wind and solar farms, waste transformation, and investments in startups related to renewable energy sources.

We recently created the Tech Hub program. It is aimed particularly at companies that are growing dynamically, are no longer startups, but due to their relatively short presence in the market, have not yet achieved the appropriate scale.

ARP S.A., as the manager of Special Economic Zones, is responsible for the creation of industrial parks – large, dedicated investment areas, along with the infrastructure necessary for a potential investor to complete their investment in the shortest time possible.

ARP S.A. has for years successfully managed **Euro-Park Kobierzyce**, a model example of providing a dedicated environment for new investments.

Currently, ARP S.A., in cooperation with the local government, is in the process of preparation of **Euro-Park Stalowa Wola** – potentially the largest investment of its kind in Poland, with an area of almost 1,000 hectares. The first investor is SK Nexilis, which has begun construction of a factory that will produce copper foil used in electric car batteries.

Another project is **Euro-Park Miękinia**, where Intel Corporation will invest in a semiconductor assembly and test facility. The industrial park's area is going to be over 300 hectares, making it a unique and competitive offer on a European scale, both for strategic industrial investors and their partners.

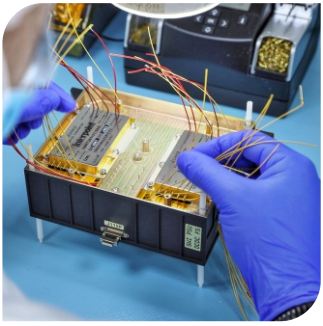
When executing the industrial park projects, ARP S.A. is in close cooperation with the Polish Investment and Trade Agency, state-level and local government units as well as energy providers, with a mission to help create an image of Poland as an excellent place for the development of modern industry by providing attractive investment offers.

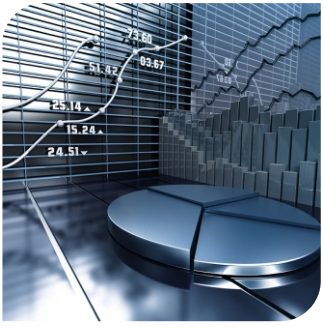
COMPANY NAME: Industrial Development Agency JSC

WEBSITE : https://arp.pl/en/

FORM OF COOPERATION: Loans, Special Economic Zones, innovation grants

PRODUCTS / SERVICES: Loans for large, small and medium-sized enterprises; Factoring, leasing; Lease of investment areas and office space in industrial parks (ARP Euro-Parks); Dedicated tax reliefs as part of the implementation of new investments; Programs supporting innovative projects: Technology Transfer Platform, Open Innovations Network





Industrial Development Agency JSC (ARP S.A.) is a joint-stock company supervised by the Prime Minister with 100% State Treasury shareholding. As part of the Polish Development Fund Group, ARP S.A. cooperates with key Polish institutions supporting enterprise development and provides solution packages in response to current business needs and challenges. It is the founder or co-founder of 4 foundations and manages 2 Special Economic Zones. Thanks to over 3 decades of experience and competences unique on the Polish market, ARP S.A. has developed an individual approach to project evaluation, allowing it to spot business opportunities in the areas others find unattractive or too risky. The main industries in which ARP Group companies operate include shipbuilding, railway, metal, mining, foundry, packaging, textile, tourism, modernization and machine construction.

Łukasiewicz
Research Network

1,000+ business partners

7,000 employees
4500 scientists and engineers
440 laboratories
in 22 institutes

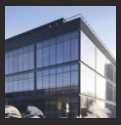
membership in more than 100 international organizations

The budget of the projects executed by all Łukasiewicz institutes in 2022 was close to $2.5 bn

Established: 2019

Łukasiewicz Research Network

We are the part of science that works for business and supports the development of Polish companies. Acting in the Science is Business formula, we meet entrepreneurs and offer solutions that help improve business and create technologies that change reality. We actively participate in building brigdes between researchers and businessmen thanks to Łukasiewicz Challenges.



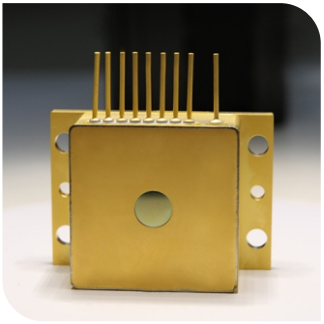
19 Poleczki Street
02-822 Warszawa
sekretariat@lukasiewicz.gov.pl

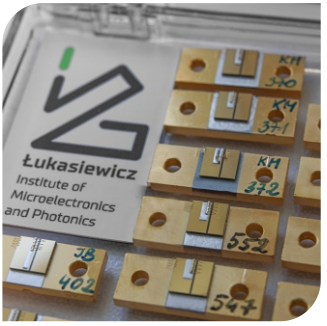
COMPANY NAME: Łukasiewicz Research Network - Institute of Microelectronics and Photonics

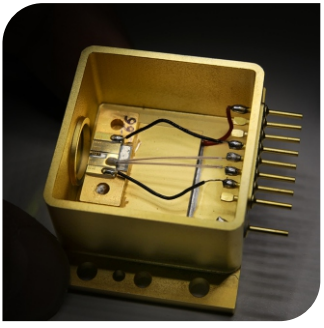
WEBSITE : https://imif.lukasiewicz.gov.pl/en/

FORM OF COOPERATION: R&D cooperation, joint projects, small volume production

PRODUCTS / SERVICES: GaN-based devices; Tailored-made optical fibers, ceramics; Application-specific integrated circuits, infrared photonic devices (lasers and detectors); Photonic integrated circuits; Silicon microtechnology; Photodiodes and detectors, micromechanical sensors; Diffraction optics, LTCC structures, printed flexible electronics, testing and certification







We are Poland's leading microelectronic technology research institute. We offer entrepreneurs solutions that support improving business and creating innovative technologies. The long-term aim is to stimulate industrial development, create commercial-added value, and improve life quality through technology R&D.

4 technological lines for: optoelectronic, silicon, wide-gap semiconductors and LTCC electronics.

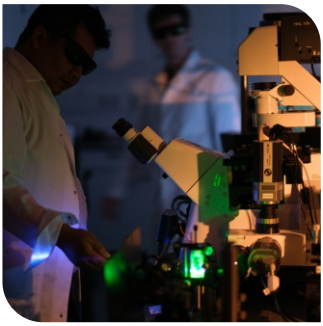
The Institute focuses on creating advanced solutions in the fields of micro-nanoelectronics, optoelectronics, materials engineering, photonics (including nanophotonics), microwave electronics, power electronics, transparent and flexible electronics to address areas such as: Sustainable Economy and Energy, Digital Transformation, Smart Clean Mobility and Health. Design of device topologies. Modelling of structures and devices based on GaN and SiC technologies.

COMPANY NAME: Łukasiewicz Research Network – PORT Polish Center for Technology Development

WEBSITE : www.port.lukasiewicz.gov.pl/

FORM OF COOPERATION: R&D contracts, joint scientific projects

PRODUCTS / SERVICES: Łukasiewicz – PORT offers research contracts in the area of Biotechnology and Material Engineering. Our knowledge and competencies provide practical value, supported by the implemented results of research outcomes and the development of new technologies. We offer world-class core laboratory facilities and a highly qualified interdisciplinary staff.



Łukasiewicz – PORT activity focuses on Biotechnology and Material Engineering, allowing for comprehensive research work as well as pilot studies for industry. Our laboratories are equipped with the highest-class research equipment enabling the implementation of commercial orders as well as basic and applicative research projects.

The infrastructure allows for conducting interdisciplinary research, e.g., in areas such as:

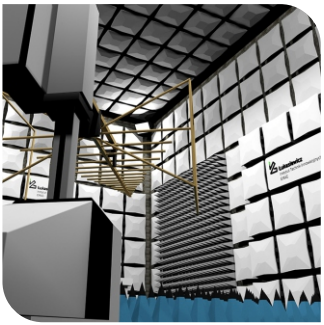
- Advanced Semiconductor and Epitaxy
- Advanced Materials Synthesis
- Photonic Materials and Structures
- Functional Macromolecules
- Composite Materials and Coatings
- Biobanking
- Bioengineering.

COMPANY NAME: Łukasiewicz Research Network - Institute of Innovative Technologies EMAG

WEBSITE : www.emag.lukasiewicz.gov.pl

FORM OF COOPERATION: R&D cooperation, joint projects

PRODUCTS / SERVICES: Cybersecurity (data protection, information security, product certification, SOC Łukasiewicz-EMAG), Artificial Intelligence (including clinical and genomic medical data analysis, industrial data analysis), Digital Public Services, IoT, Industry 4.0, Services for people with disabilities, Research and Certification (e.g. cybersecurity and radio laboratory).



Łukasiewicz Research Network - Institute of Innovative Technologies EMAG is a network institute specializing in applied computer science, technical information technology and information technologies.

The Institute deals with, among others things, broadly understood cybersecurity, artificial intelligence, data analysis (decision support systems), IoT (Industry 4.0, Smart Cities), digital public services and laboratory research. The unit carries out tasks affecting IT security of the country. Participated in creating the National Scheme for Assessing and Certifying the Security and Privacy of IT Products and Systems in accordance with Common Criteria. Strong relationships with the industry, allowes to build a strong potential with implementation facilities, and a laboratory infrastructure in the field of testing equipment, systems and machines.

COMPANY NAME: Łukasiewicz – Poznań Institute of Technology

WEBSITE : https://pit.lukasiewicz.gov.pl/

FORM OF COOPERATION: R&D cooperation, joint projects

PRODUCTS / SERVICES: The design and implementation of Artificial Intelligence-based solutions; digital transformation and digitization; new technologies in the field of agriculture; materials and biomedical engineering; automation and robotics; design and implementation of logistic processes; development and simulation of rail vehicles

Łukasiewicz – Poznań Institute of Technology is the second largest Łukasiewicz institute in Poland. In this form we have been operating since 1st January 2022. Previously there were 5 institutes in Poznań (the oldest was established in 1945). Łukasiewicz – PIT combines: Łukasiewicz – Institute of Logistics and Warehousing, Łukasiewicz – Wood Technology Institute, Łukasiewicz – Industrial Institute of Agricultural Engineering, Łukasiewicz – Metal Forming Institute and Łukasiewicz – Rail Vehicles Institute. Our research centers operates (and offers techniques and technologies from the following areas) in six main areas:

- Digital transformation
- Agriculture and Food Technology
- Wood technology
- Metal forming
- Logistics and Emerging technologies
- Rail Vehicles

COMPANY NAME: Łukasiewicz Research Network - Institute of Electrical Engineering

WEBSITE : https://iel.lukasiewicz.gov.pl/

FORM OF COOPERATION: R&D cooperation, joint projects, of transfer, production facilities

PRODUCTS / SERVICES: Design and fabrication of power electronic devices based on Si, SiC, GaN semiconductor technologies for application in the energy and transport sector, especially electric distribution systems, renewable energy systems, etc. Laboratory tests according to IEC standards: short-circuit and voltage of distribution switchgear; functional and load tests of power systems: up to 15 kV, 5 MW; safety compliance (EMC, LVD);

Łukasiewicz Research Network – Institute of Electrical Engineering offers comprehensive research, construction and experimental work of a cognitive and applied science in the field of material engineering, hydrogen applications, power electronic systems, power drive systems, control algorithms, especially: semiconductor power converters in silicon carbide (SiC) and gallium nitride (GaN) technologies, microprocessor-based high-frequency control and regulation systems, construction of high-frequency high-power power electronics systems.

Recent projects:
- Hybrid distribution transformer for voltage regulation and stabilisation in medium and low voltage power grid systems;
- On-board electric vehicle GaN battery charger;
- Photovoltaic inverter in RES installations in GaN technology;

COMPANY NAME: Research Network Lukasiewicz – Upper Silesian Institute of Technology (Lukasiewicz – GIT)

Łukasiewicz
Upper Silesian Institute of Technology

WEBSITE : www.git.lukasiewicz.gov.pl

FORM OF COOPERATION: R&D cooperation, joint projects.

PRODUCTS / SERVICES: Research and development of technological processes, design and improvement of new materials, expert opinions on technologies and materials, examination of microstructure and properties of metal alloys, chemical composition analysis, certified reference materials, training in the field of welding, electronic welding equipment, electric machines and drives.

The transfer of research results and expertise to industry in the form of innovative technologies, products, methods, solutions, software, etc. in the form of contracts, licences, joint ventures, etc.

The Institute's offer includes:

- Development of technologies for the production of pig iron, steel products, utilisation of metal-bearing waste and slag by-products, production of final steel products including the use of hydrogen,
- Development of technologies of welding, soldering, bonding
- Research is carried out in the following areas:
- Examination of properties and structures of materials, incl. advanced expertise for the energy, defence and transportation sectors,
- Numerical and physical simulation of plastic deformation and welding processes
- Design and manufacture of electric machinery and equipment, also for the electromobility sector and circular economy

COMPANY NAME: Łukasiewicz Research Network - Automotive Industry Institute

WEBSITE : www.pimot.lukasiewicz.gov.pl

FORM OF COOPERATION: R&D cooperation, projects, commercial work.

PRODUCTS / SERVICES: Type-approval services; testing of vehicles and their equipment in terms of passive and active safety, EMC and ADAS; road testing of braking; engineering designs and numerical analysis; certification of automotive products and biomass; examination of fuels and biofuels; automotive expertise.

The Institute carries out scientific research and development works in the field of automotive engineering. The Institute's activities are focused on such areas as:

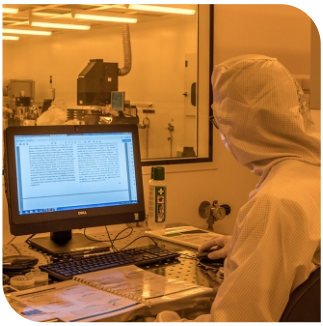
- improvement in road traffic safety;
- development of road vehicles and ADAS systems;
- research in the field of intelligent safety systems;
- state security and defences;
- works on alternative vehicle powering sources, fuels, biofuels and renewable energy sources.

Within the powers granted by the type-approval authority, we offer tests necessary for obtaining all EU-type vehicle-approval certificate. We provide the surveillance of conformity of production for the needs of type approval of a vehicle, its parts or equipment. Łukasiewicz-PIMOT manages R&D projects independently or in cooperation with other scientific units and industry representatives. The projects are financed mainly from the State budget and European funds, e.g. Horizon 2020, Horizon Europe.

Companies at Poland's National Pavilion

COMPANY NAME:	CEZAMAT WUT
WEBSITE :	www.cezamat.eu
BUSINESS PROFILE:	Microelectronics, photonics, biotechnology
FORM OF COOPERATION:	R&D cooperation, joint projects, commercial services
PRODUCTS / SERVICES:	Diffractive optical elements, microlenses, photonic integrated circuits, photonic sensors, microelectronic devices, process development, design and production of microelectronic and photonic devices.

Centre for Advanced Materials and Technologies CEZAMAT
Warsaw University of Technology



The Centre for Advanced Materials and Technologies CEZAMAT, part of the Warsaw University of Technology is one of Poland's largest high-tech research and development investments. The Centre allows for the carrying out of new marketable technologies with commercial potential. It offers access to a semiconductor technology pilot line with the possibility of processing 200 mm wafers. The infrastructure allows for conducting interdisciplinary research and commercial processing services in the following areas:

- Nanotechnology,
- Micro- and nano-electronics,
- Micro- and nano-photonics,
- Microsystems,
- Printed electronics,
- Nanomaterials, functional materials,
- Bio-med-chem engineering.

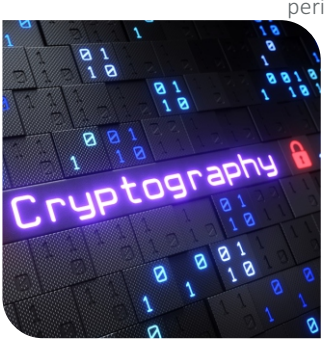
COMPANY NAME: Digital Core Design

WEBSITE : www.dcd.pl

BUSINESS PROFILE: ITC

FORM OF COOPERATION: International trade and distribution

PRODUCTS / SERVICES: Digital Core Design's impact reaches far and wide, transforming industries and amplifying the potential of cutting-edge technology. Our legacy is one of unyielding innovation, forging connections, and shaping a future where possibilities are limitless like e.g. revolutionizing the Automotive Landscape with CAN ALL (CAN 2.0, FD, XL), enter the Quantum Era of Cryptography with CryptOne system, empowering with RISC-V Evolution with 32-bit, 64-bit CPUs, peripherals, and extensions



At the forefront of innovation lies Digital Core Design, a trailblazing provider of IP Cores and a visionary hub for System-on-Chip design. Rooted in its inception in 1999 and headquartered in the vibrant city of Bytom, Poland, our journey spans nearly a quarter-century of global excellence. Throughout this remarkable 25 years, DCD has meticulously crafted and refined approximately 100 architectures, which have gracefully found their home in a staggering 750 million electronic devices worldwide. Among these technological gems, you'll discover feats such as the World's Fastest 8051 CPU, royalty-free 32-bit CPU, and the dazzling lineup of RISC-V 32-bit and 64-bit CPUs.Digital Core Design's footprint transcends geographical borders, with a presence felt across every continent through our esteemed distributors. Our illustrious clientele reads like a who's who of innovation itself, featuring giants like Toyota, Sony, GE, VW, ABB, and Siemens, among a constellation of other luminaries.

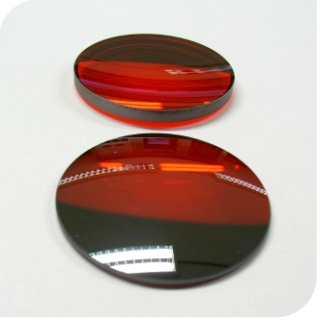
COMPANY NAME: ENSEMBLE3

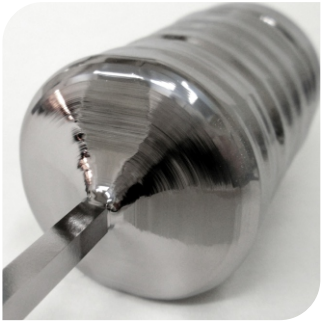
WEBSITE : www.ensemble3.eu

BUSINESS PROFILE: Microelectronics, photonics

FORM OF COOPERATION: We are interested in providing semiconductor and optical materials. We are also interested in research, and development services in this field, as well as looking for joint projects to develop semiconductor materials, including the possibility of Joint Ventures.

PRODUCTS / SERVICES: AIIIBV crystals: GaAs, InAs, GaP, InP, GaSb. Other materials: 4H-SiC, 6H-SiC, Bi2Te3, Bi2Se3. Oxides crystals: YAG, SBN, LuAP, CLBO, BBO, GdCOB , YVO. Services: Crystal growth, Crystal cutting, Grinding and polishing of wafers, Characterization of crystals and wafers.





ENSEMBLE3 is a newly established Centre of Excellence in nanophotonics, advanced materials and technologies based on crystal growth. The Centre works on the development of new material technologies and advanced materials with exceptional electromagnetic properties that can be applied in areas such as photonics, optoelectronics, telecommunications, solar energy conversion, medicine, aeronautics, security, and defense.

ENSEMBLE3 exports semiconductor materials (GaP, InAs, GaAs, InP, GaSb) to many countries, among them: the US, Japan, Taiwan, France, Germany, and many others.

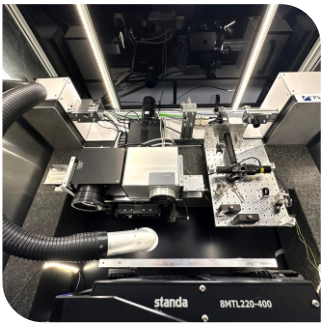
COMPANY NAME: Fluence Technology

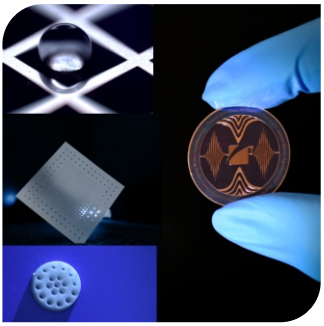
WEBSITE : www.fluence.technology

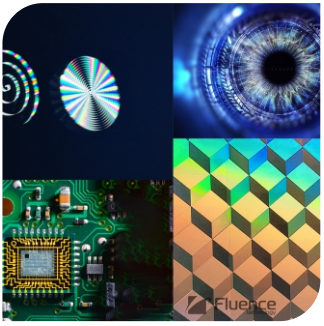
BUSINESS PROFILE: Micromachining, research, imaging

FORM OF COOPERATION: International trade and distribution, investment, Joint Venture

PRODUCTS / SERVICES: Jasper Micro: Compact Femtosecond Fiber Laser, Jasper Flex: High Power Femtosecond Fiber Laser, Jasper X0: High Power Femtosecond Fiber Laser, Halite 2: Compact fs laser, Oscillator Yb: 1030 nm Industry Grade Femtosecond, Harmony: Optical Parametric Amplifier







Fluence Technology, established in 2016, is a leading manufacturer of femtosecond fiber lasers that is recognized as a unique and advanced technology.

Fluence Technology delivers state-of-the-art laser sources, catering to the needs of both the industrial and scientific sectors. These lasers are specifically designed to meet the demands of highly challenging applications, highlighting the company's commitment to providing cutting-edge solutions.

With a worldwide client base, Fluence Technology has successfully established itself as a trusted provider of advanced laser technology, serving diverse industries and scientific communities across the globe.

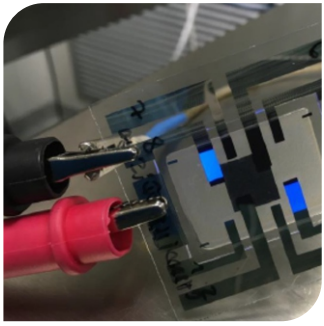
COMPANY NAME: QNA Technology

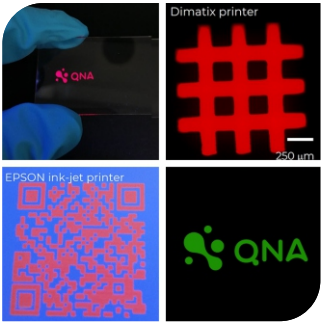
WEBSITE : www.qnatechnology.com

BUSINESS PROFILE: Semiconducting nanomaterials

FORM OF COOPERATION: International trade and distribution, Joint Venture, commercial R&D services, investment

PRODUCTS / SERVICES: PureBlue.dots - semiconducting heavy metals free nanomaterials (quantum dots) emitting blue light for displays and lighting applications. Inks and resists based on PureBlue.dots and other colors of quantum dots (red & green). Services: nanomaterials manufacturing, modifications and purification, inks and resists formulation





QNA Technology develops technology & synthesis of semiconducting nanomaterials. We are quantum dots manufacturer, which customize them to various solvents (polar, nonpolar, monomers) and formulate inks to enable clients to print semiconductors on various substrates (glass, polymer foil, paper etc.) with selected printing methods.

Our flagship material PureBlue.dots are blue light emitting quantum dots (QDs), which are heavy metals free. This is the most challenging type of QDs, which apply in the display industry, both as color converting and electroluminescent materials.

COMPANY NAME: VIGO Photonics

WEBSITE : www.vigophotonics.com

BUSINESS PROFILE: Semiconductors

FORM OF COOPERATION: International trade and distribution

PRODUCTS / SERVICES: VIGO Photonics develop products dedicated to customer's applications in the following fields: industry (laser power control), environmental protection (gas analysis, water quality control), transport (analysis of temperature distribution in fast-moving objects), defense and security (smart munitions, early warning systems)

VIGO Photonics is a manufacturer of semiconducting materials and instruments for photonic, specialized in MWIR and LWIR detectors, manufactures using the company's own internally-developed technology.

VIGO Photonics' mission is to provide fast and convenient IR detectors at any wavelength from 2 to 16 µm, reaching fundamental BLIP limits without cryocooling.

VIGO Photonics has complete front – end and back- end production lines for semiconductor high capacity instruments – from epitaxy of II-IV and III-V groups, through detector chips, lasers and their assembly and integration with electronics.

COMPANY NAME: XTPL

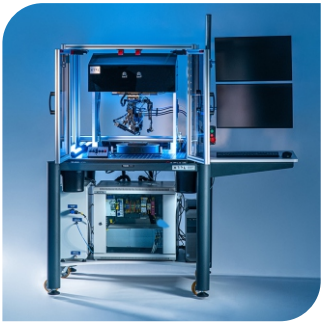
WEBSITE : www.xtpl.com

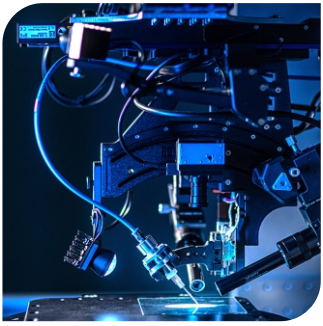
BUSINESS PROFILE: Microelectronics

FORM OF COOPERATION: International trade

PRODUCTS / SERVICES: Delta Printing System – a printer for micron scale conductive structures for microelectronics, the Ultra-Precise Deposition System for industrial applications, Silver conductive Nanoinks and Nanopastes.

shaping global nanofuture





XTPL operates in the nanotechnology market segment. The company is developing and marketing its globally innovative platform technology of ultra-precise printing of nanomaterials, protected by international patent applications.

The XTPL method is a breakthrough because of its unique combination of several features: it is an additive method, which ensures significant time and material savings and allows for the use of advantages of print – such as scalability, cost effectiveness, simplicity and speed. It can be used in the production of advanced devices thanks to its unprecedented precision (structures width 1-8 micrometres) and without the need for the use of electric field. This is due to its platform character.

notes:

Organizers:

PAIH PFR Group

PFR Polish Development Fund

arp Industrial Development Agency JSC

Łukasiewicz Research Network

Content partner:

PPTF Polish Technological Platform on Photonics