

Cooperate with Us



Łukasiewicz
Institute of
Microelectronics
and Photonics



We Protect Innovations

The competition never sleeps – that's why at Łukasiewicz – IMiF, we will protect each of your innovation both in Poland and abroad.

We Deliver Solutions

Technology? Product? Production method? Whatever your business needs, we will deliver it. We have knowledge skills as well as technological potential.

We Solve Technical Problems

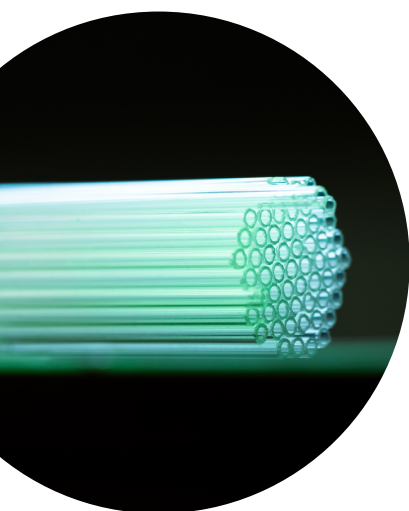
Are there any problems that limit the functionality of your product? Do you want to take the next step, but need some support? Challenge us and we will back you up.

We Support You to Acquire Funds

We will give advice on how to acquire funds, prepare a project, and support project management we will also tell you how to bring your services to market efficiently.

We Guarantee High Quality

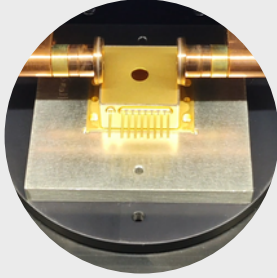
Made in Poland matters. To make sure that your product meets quality standards, we will analyze and certify it.



**Grow Up
Your Business
With Us**

Our Technologies

Quantum Cascade Lasers



QCLs developed in our laboratories are semiconductor unipolar and compact sources of radiation in mid-infrared (4.5 – 14 μm) and terahertz (1 – 5 THz) ranges. They can operate both in pulsed or continuous wave conditions at room temperature. Their unique design allows for fast modulation, high power emission, and simultaneously QCLs can be designed to emit a selected wavelength in a wide infrared range.

Application:

Communication, environmental monitoring, medicine and defence industry. They are an excellent source of infrared light for molecular gas analysis and absorption spectroscopy.

G-Flake® Graphene

Upgrade your product with patented G-Flake® graphene oxide (GO) or reduced graphene oxide (RGO)! Our scientists can customize graphene to meet your requirements of application, creating a unique product with desired properties such as hydrophobicity, bacteria and corrosion resistance. Explore our diverse services for graphene customization and characterization.

Application:

In the batteries, composite materials and coatings of bridges, yachts, cars, electric motors, metal parts.



Epitaxial Graphene

Boost your research with state-of-the-art epitaxial graphene on silicon carbide. Take advantage of high charge carrier mobility, truly two-dimensional character and tailored standardization protocols. Explore the patented material and our bespoke sensory platforms.

Application:

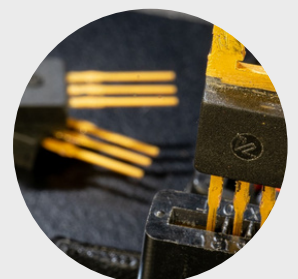
Millimeter-wave electronics, THz detection, high-temperature magnetic diagnostics.

Gallium Nitride Devices

We develop high power and high voltage and high frequency GaN transistors, intended for use in power electronics systems. GaN devices enable power electronic systems to be smaller, more effective and, above all, more reliable compared to silicon devices.

Application:

Consumer electronics, wireless charging, ICT sector, data centers, energy conversion and storage, controlling electric motors, LED lighting control.



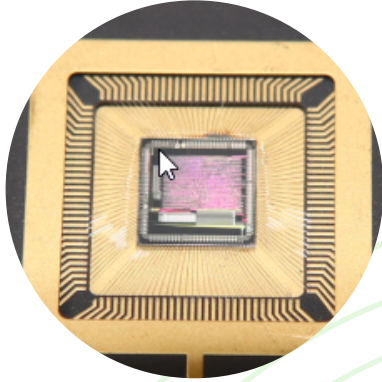
Our Technologies

Application Specific Integrated Circuits and Systems Development

Open your research for application specific integrated electronics (ASIC's, signal processing, data processing) by dedicated implementation by Lukaszewicz – IMiF ASIC Design Team. Make your product more reliable and secured by embedded software development and hardware configuration of silicon-proven microcontrollers implementation. We are flexible, experienced and open-minded for scientific and technical challenges.

Application:

IoT-sensor readout modules, signal processing, data processing, cybersecurity, hardware-software co-design, ASIC, research, space experiments

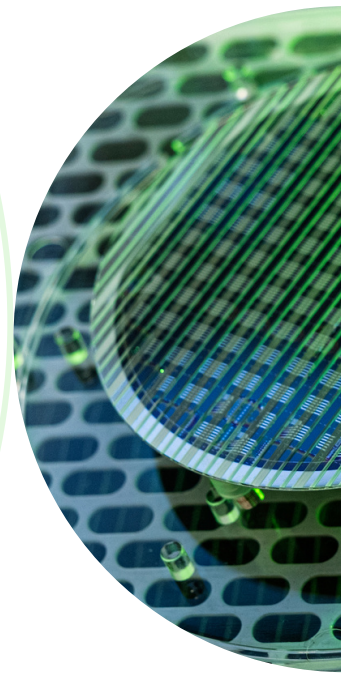


Si-based platform

Si-based micro and nanofabrication platform devoted to the users of microtechnologies – the total value chain from concept and design through prototyping to low/medium volume fabrication and packaged device testing. A key advantage of the Łukasiewicz – IMiF silicon-based micro-nano fabrication platform is the high degree of process flexibility. Based on many years of experience and tool redundancy, our team can define routes whereby often incompatible materials (eg. Au in a CMOS-class line) can be brought together within the same facility. The risk of cross-contamination can be avoided through proper protocol separation, which allows the integration of various materials with their unique properties to deliver the prototype and ready-to-use products.

Application:

Si-based micro and nanodevices for interdisciplinary applications, primarily industrial, environmental, defense and biomedical.



Thermoelectric Modules

Thermoelectric modules prove that we can turn bad energy (e.g. heat from greenhouse gases) into the good one desired by everyone – electricity!

Equally, the remarkable ability of TE modules to heat and cool allows them to not only reduce the temperature of an object below ambient, but to stabilize the temperature of things in widely varying ambient states as well.

Application:

Cooling of semiconductor devices





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Our Technologies

Piezoelectric Insole

Our piezoelectric insole is a cost-effective solution that enables measuring the pressure distribution of various foot regions while walking or running outdoors. The insole is equipped with 8 sensors, providing valuable data for determining gait parameters, identifying foot irregularities, and assessing human posture. Transmitters integrated into the footwear wirelessly transmit measurement data, allowing easy access to information on a smartphone.

Application:

This affordable and practical technology can be utilized by orthopedic doctors, physiotherapists, neurologists, and athletes to gain valuable insights into foot mechanics and optimize treatments and training routines.



We also offer:

Materials Characterization

Complementary characterization techniques with dedicated measurement procedures tailored for specific samples. High-temperature in-situ measurements [XRD, Raman]. Devices reliability tests.

Certification of White Goods

We certify and assess conformity for electrical products according to schemes such as ENEC, ENEC+, B, IECEE CB Scheme, CCA, CCAEMC, ZHAGA. Our services include European high-quality marks for safety and functionality, CCA mutual recognition for electrical products in Europe, CCA EMC certification mark for European EMC standards, ZHAGA Authorized Testing Center, and tests based on PN and EN standards for safety, electromagnetic compatibility, and energy efficiency.

For conformity assessment, we cover EMC, LVD, Machinery, GAR, and RED Directives and conduct tests for operational safety, compliance with EU standards, and energy efficiency assessment for various appliances.



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