University of Gdańsk
Technology Transfer Office

UG TECHNOLOGY TRANSFER OFFICE

We connect science with business

University of Gdansk

Science and business cooperation at University of Gdansk

'The Technology Transfer Office of the University of Gdańsk focuses on activities enabling genuine cooperation of the scientific and business communities in the fields of: securing patent rights and intellectual property, protecting the commercial potential of innovations and inventions, negotiating license agreements and partnerships, creating innovation ecosystems and structures.

The important activities of the unit also include encouraging scientists, doctoral students and students to innovate and engage in entrepreneurship in order to introduce a commercial product to the market, says Sylwia Mrozowska, PhD, Vice-Rector for Cooperation and Development at the University of Gdańsk.

We cooperate with various organisations and institutions, connecting industrial partners, entrepreneurs and investors, both in Poland and abroad, among others in the USA, Chile, Australia, Great Britain, Sweden, Portugal, Spain, Croatia, Italy, France, Malta and Germany. We promote the achievements of research teams of the University of Gdańsk, inter alia during trade fairs and direct business meetings.

We are a signatory to the Agreement of Academic Technology Transfer Centres (PACTT), under which we exchange knowledge and good practices with other centres in Poland.'

Vice -Rector for Cooperation and Development, Sylwia Mrozowska, PhD, Professor

The activities of the Technology Transfer Office focus on:

- **identification of scientific research results** with high commercialisation potential
- cooperation with a patent attorney to **provide inventions** and know-how with the best **protection of intellectual property rights**
- **connecting researchers with investors** and business partners to develop technologies and introduce them to the market
- creating **invention commercialisation plans**
- **licensing and selling rights** to highly developed technologies
- **marketing support** including promotion of the achievements of scientific teams
- **cooperation** with the UG special purpose company, **UNIVENTUM LABS**, in the scope of **creating SPIN-off companies**
- **supporting** SPIN-off companies' activities
- business **consultancy**

TECHNOLOGY TRANSFER

Research and commercial potential of UG

University of Gdansk is dynamically developing while combining tradition with modernity. Nearly 1800 researchers pass on their knowledge to students, doctoral students and postgraduate students. Participation in numerous international projects and **cooperation with centres all over the world** enable world-class research and **cooperation between science and the economy**. University of Gdansk, with a **modern research infrastructure** at its disposal, including research and implementation laboratories, physicochemical, radiometric, geochemical, and lithological measurement laboratories, etc., as well as a modern research vessel, the Oceanograf, carries out works whose results enable **effective technology transfer to the economy**. The patent-protected technologies developed by the scientists of University of Gdansk and innovative research conducted at its faculties in all scientific disciplines are applied in various industries, including pharmacy, medicine, agriculture, food, construction, logistics, environmental protection, environmental engineering, IT, and cyber security. As a result of the cooperation between the university and business, the number of interesting R&D results, inventions, expert opinions, reports, and economic entities supporting the commercialisation of the inventions – including SPIN-off companies – is constantly growing.

UG SPECIAL PURPOSE COMPANY

univentum labs

SPIN-OFF COMPANIES

FERMENTUM MOBILE
QSAR LAB
NaNoEXPO
QCG Quantum Cybersecurity Group
officina baltica
TCI LABORATORIES
VAXICAN

Faculty of Oceanography and Geography

Main fields of research

- Interdisciplinary studies of inland, coastal and open Baltic Sea ecosystems
- Assessment of marine pollution and the impact of human activities on the marine environment
- Ecohydrodynamic models describing the state and predicting changes in the Baltic Sea basins
- Studies on the impact of contemporary climate change on the functioning of marine and ocean ecosystems
- Local and regional aspects of modern climate change and its variability

Application of research

- Pre- and post-investment marine environmental assessments
- Improvement of transitional and marine water quality, protection of water resources
- Forecasting of marine ecosystem changes resulting from climate change
- Assessment of the impact of environmental factors – including pollution – on the state of marine ecosystems
- Safety of seafood products; industrial use of products from marine organisms
- Safety of marine navigation and investments in the coastal zone and open sea

Industries

- Ecosystem services
- Marine biotechnology
- Tourism
- Fishery
- Renewable energy sources
- Offshore mining
- Maritime archeology
- Environmental protection
- Maritime transport
- Environmental engineering

Intercollegiate Faculty of Biotechnology UG & MUG (IFB UG & MUG)

IFB

PCA Polskie Centrum Akredytacji BADANIA AB 1760

Main fields of research

- Molecular virology – studies on infection mechanisms
- Molecular biology of bacterial cells
- Molecular studies of bacterial plant pathogens
- Studies on lipid metabolism in plants
- Studies on the development of cancer and other human diseases, using new diagnostic and therapeutic methods

Application of research

- Immunogenic vaccines against Zika and HCV/HBV viruses, monoclonal antibodies and vaccines for humans and animals
- Biological plant protection agents
- Novel methods for effective control of bacterial pathogens in hard-to-heal wounds
- New diagnostic and prognostic markers for human diseases

Industries

- Medicine
- Pharmacy
- Veterinary
- Cosmetics
- Agriculture

Faculty of Biology

FACULTY of BIOLOGY
UNIVERSITY of GDAŃSK

Main fields of research

- Molecular biology
- Biology of human cells and genetically determined diseases
- Cytology and embryology of plants
- Ecology
- Physiology and biotechnology of plants
- Genetics
- Microbiology
- Neurobiology
- Ornithology
- Parasitology
- Palaeontology
- Taxonomy

Application of research

- Effective treatments for neurodegenerative diseases
- Antineoplastic derivatives of usnic acid
- Bacteriophages to combat bacterial infections
- Environmental monitoring
- Ecotoxicology – phytotoxicity of chemical pollutants in the aquatic environment
- Parasitological diagnostics and monitoring e.g. food
- Studies on the effectiveness of antiparasitic agents, biocides, repellents
- Identification and valorisation of fossil resins and inclusions – elimination of counterfeits

Industries

- Pharmacy
- Medicine
- Veterinary
- Environmental protection
- Food and beverage industry
- Jewellery industry

Faculty of Chemistry

Main fields of research

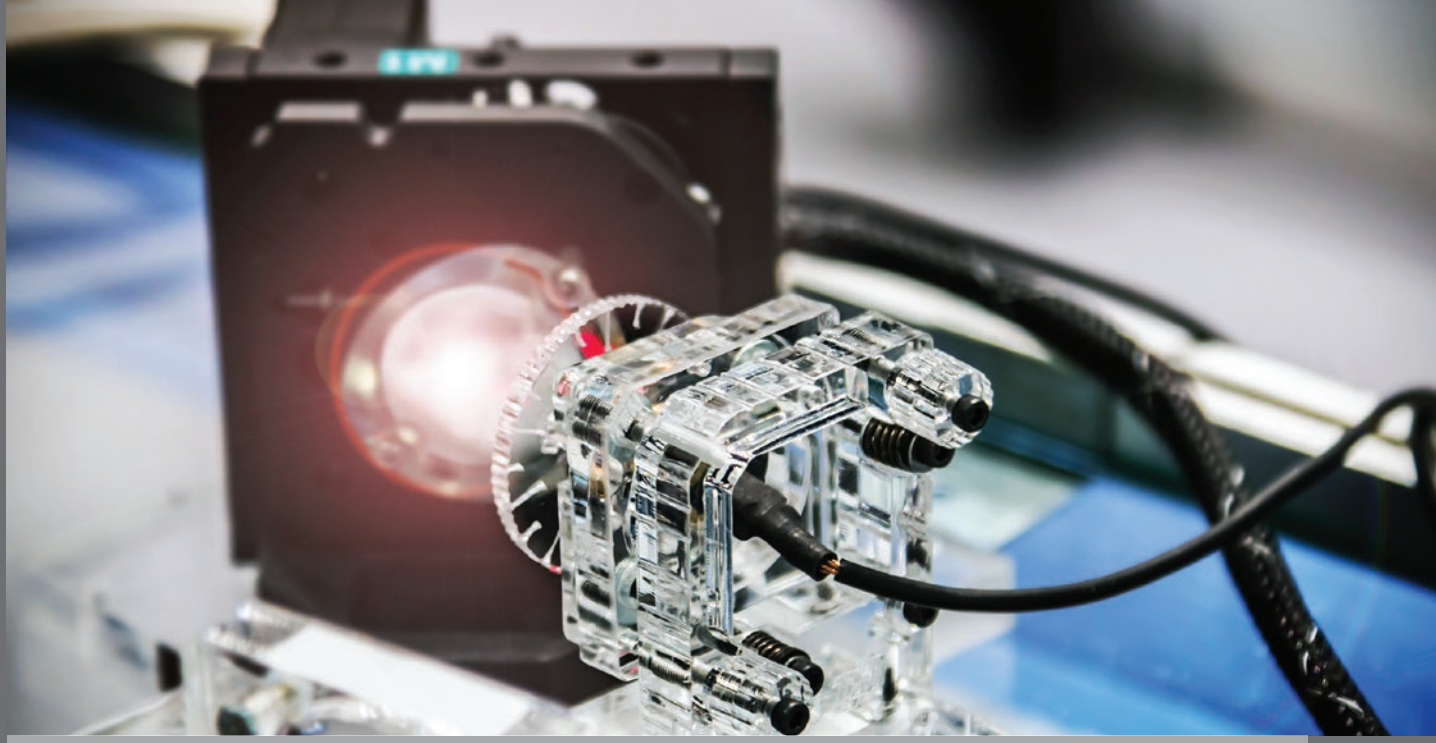
- Analytics: environmental, food and natural products, biomedical
- Development of environmentally friendly methods for the removal of micropollutants – biologically active substances and compounds that are difficult to biodegrade
- Research on the relations between the structure, physicochemical properties, and biological activity of small-molecule compounds – peptides, coordination compounds of metal ions
- Research on the structure/activity of macromolecular compounds – DNA, proteins
- Research on complex systems: polymers, biopolymers, nanoparticles, and ionic liquids as well as processes involving them

Application of research

- Monitoring of the state of the environment and designing ecological processes and technologies
- Assessment of dispersion of chemical substances in the environment – in air, water, and soils
- Development of new chemical compounds with therapeutic effect
- Technologies for the removal of photocatalytic pollutants
- Computer design of new chemical compounds with preset physicochemical properties

Industries

- Construction
- Household appliances
- Pharmacy
- Medical analytics
- Oncology
- Materials engineering
- Environmental protection
- Agriculture



Faculty of Mathematics, Physics and Informatics

Wydział Matematyki, Fizyki i Informatyki Uniwersytetu Gdańskiego

Main fields of research

- Physical research on nanomaterials and metamaterials, optoelectronic, photovoltaic, and luminescent materials
- Calculation of electron structure of dopants in crystals, modelling of their magnetic properties
- Plasmonics, hybrid materials, radiationless energy transport, charge transfer, luminescence, biosensing
- Fractional order models in electromagnetism, circuit theory, signal theory
- Combinatorial optimisation
- Research on heart rate variability

Application of research

- Determination of quality, performance, and stability of optoelectronic materials
- Analysis of locking mechanisms for molecular magnets
- Allocation of resources, optimisation of infrastructure layout
- Transport issues, production planning, logistic network design
- Plasmonic platforms for the detection of emission signals of weakly fluorescent substances
- Modelling of blood flow, tendon healing, sea wave evolution
- New diagnostic methods in cardiovascular diseases

Industries

- IT
- Manufacturers of functional and engineering materials
- Manufacturing engineering
- Energy
- Plasmonics
- Optoelectronics
- Shipbuilding
- Medicine
- Pharmacy
- Agriculture
- Transportation & Logistics

International Centre for Theory of Quantum Technologies, ICTQT

Main fields of research

- Quantum Cybersecurity and Communication
- Quantum Information Science
- Quantum Computing Technology
- Basic Quantum Technology Issues
- Photonics and Quantum Optics

Application of research

- Theoretical research and implementation works related to quantum random number generators, statistical analysis, online payments, securing web browsing, securing devices, communication channels and critical infrastructure
- Research on ultra-secure communication and encryption methods in smartphones, computers, IoT devices
- Metrology, research on new classes of quantum sensors for diagnostics, searching for minerals, gravimetry, measuring the level of gas emissions
- Using information processing protocols to analyse the basic laws of nature
- Quantum machine learning models for designing new energy sources, developing new therapies, early cancer detection, etc.
- New methods of information processing with use of light as a medium, new computing techniques, quantum sensors

Industries

- Cyber security
- Telecommunications
- IT
- Photonics
- Automotive
- Energy
- Trade
- Logistics

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