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# WHAT ARE CLUSTERS – AND WHY DO YOU NEED TO KNOW ABOUT THEM?

A cluster is a voluntary, self-governing group of companies or other entities that work together on the principle of partnership. By acting jointly, the members of the cluster aim to increase the added value they create.

Clusters are based on cooperation between different organisations working in a particular field – sometimes even competitors in the market. Their cooperation takes many forms, from sharing resources to the joint development of products and innovations.

This publication provides an introduction to Lithuania's vibrant cluster community – allowing readers to explore and engage with clusters, and to contribute to innovative projects that can disrupt the market on a national and international level.

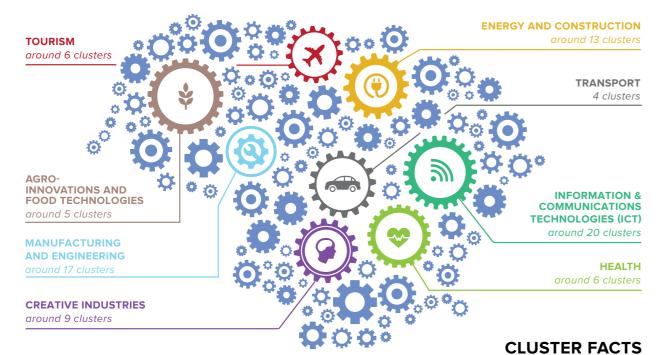
In addition to the overview provided in these pages, detailed information about Lithuania's cluster community can be found online at <a href="https://www.klaster.lt">www.klaster.lt</a>.

For those seeking to establish or engage with clusters, free consultations are available from the coordinators of the cluster development project 'Promotion and Development of Innovation Networking' (InoLink), covering the following subjects:

- Establishing, developing and managing clusters.
- Searching for partners in Lithuania and abroad.
- Participating in national and international programmes.
- Promoting research and development (R&D) activities in clusters.
- Cross-border and cross-sectoral development.
- Funding opportunities.



## LITHUANIA'S CLUSTERS AND THEIR SPHERES OF ACTIVITY



Clusters first appeared in Lithuania several decades ago, but the pace of clusterisation increased dramatically during the period 2010-2015, with the implementation of EU financial instruments supporting their development<sup>1</sup>. Although the majority of Lithuania's clusters are still young and relatively small, with an average of 13 members, the largest clusters comprise 30 members or more. Clusters are mainly composed of small and medium-sized companies. Members are located in 34 cities and towns, with the greatest concentration in Lithuania's largest cities,

Vilnius and Kaunas.

- Around 60 clusters operate in Lithuania (registered at www.klaster.lt ).
- 10 clusters have been certified with the Bronze Label for Excellence by the European Secretariat for Cluster Analysis (ESCA).
- The average number of members in a cluster is 13.
- Around 1/3 of clusters in Lithuania engage in intersectoral activities.
- The fields with the largest number of clusters are ICT, as well as manufacturing and engineering.

In Lithuania, clusters are most active in the spheres of manufacturing and engineering, information and communications technologies (ICT), energy and construction, as well as in the creative industries. Around one-third of all clusters are cross-sectoral, carrying out activities in two or more sectors. Most often, these cross-sectoral clusters focus on activities relating to ICT, the creative industries, manufacturing and engineering.

The majority of clusters are engaged in R&D activities in new and developing industries, and across sectors. Much has been done in Lithuania to implement solutions in the maritime industry and logistics, and exceptional results have been achieved in the spheres of lasers and photonics, digital technology, environmental protection, medical devices and mobility technologies.

According to the Global Competitiveness Index, Lithuania ranks highest in the Central and Eastern Europe (CEE) region for cooperation between business and universities<sup>2</sup> - and great opportunities exist to further extend the scope of scientific and business collaboration.

#### **BRONZE LABEL FOR EXCELLENCE**

Lithuania's clusters are currently at one of the most important stages in their development: building international activity. A great number of clusters are already engaged in international programmes and projects. Many participate in international industrial exhibitions, business missions, cluster conferences and partner search fairs. The strongest clusters in Lithuania already provide leadership in international projects involving foreign partners.

Within Lithuania's comparatively small market, the number of members joining clusters is unlikely to increase dramatically. Gaining international recognition for the quality of cluster activities is therefore a crucial step in raising the visibility of Lithuanian companies and clusters - and in extending the scope of their work internationally.

Just a few years ago, only two clusters in Lithuania had obtained the Bronze Label of the European Cluster Excellence Initiative from the European Secretariat for Cluster Analysis (ESCA). Today, that number stands at 10.

By 2020, at least two clusters in Lithuania are expected to receive the prestigious Silver Label, Bronze, Silver and Gold Labels are a measure of the maturity and efficiency of a cluster's activities on an international scale – and while the Bronze Label has been given to more than 1,100 clusters across Europe, the Silver Label has been awarded to just 123.

#### LITHUANIA'S BRONZE LABEL CLUSTERS

- Photovoltaic Technology Cluster, FETEK (energy and construction; manufacturing and engineering).
- Laser and Engineering Technologies Cluster, LITEKTM (manufacturing and engineering).
- Lithuanian Automotive Export Association, LAuGEA (transport; manufacturing and engineering).
- Lithuanian Medical Tourism Cluster, LITCARE (health; tourism).
- Lithuanian Plaster Cluster (manufacturing and engineering).
- National Food Cluster, NaMŪK (agro-innovations and food technologies).
- Lithuanian Prefabricated Wooden House Cluster, PrefabLT (energy and construction; manufacturing and engineering).
- SMART FOOD Cluster (agro-innovations and food technologies; manufacturing and engineering).
- Health Technology Cluster, iVita (health; creative industries).
- Vilnius Film Cluster, VFC (creative industries).

Over the following pages, we'll take a closer look at eight Lithuanian clusters that have been awarded the Bronze Label for Excellence, and another five striving to win that Label.



INTRODUCTION

<sup>&</sup>lt;sup>2</sup> World Economic Forum, (2018), Global Competitiveness Index 2017-2018.

<sup>&</sup>lt;sup>1</sup> MITA, (2017), Lithuanian Clusterisation Study.

## **BIOPOWER PLANT DEVELOPMENT** CLUSTER

MONITORING OF ECOLOGY IN **AGRICULTURE** 

**DEVELOPMENT OF** 

**FERMENTATION** 

**TECHNOLOGIES** 

COMPOSITION

OF FERTILISERS

THAT MINIMISE

**EMISSIONS** 

DEVELOPMENT **OF DIGESTATE PROCESSING TECHNOLOGIES** 

DEVELOPMENT OF BIOGAS **SEPARATION TECHNOLOGIES** 

#### **ABOUT THE CLUSTER**

Addeco, which engages in developing biopower plants, was founded in 2013. The cluster seeks to develop biogas production and related technologies that create the conditions necessary for organic farming to receive a good return on investment.

#### **ACTIVITIES OF THE CLUSTER**

Members of the cluster are implementing two large-scale projects to develop innovative technologies. These seek to eliminate the shortcomings in biomethane production technologies that currently make the production of biogas and the use of biomethane uneconomic - namely, the amount of methane emitted into the atmosphere during the biogas purification process, and the comparatively small amount of methane in biogas.

The cluster aims to develop unique and innovative technologies that will enable farming to move towards fully sustainable and organic practices. These include:

- Technology to increase the concentration of methane in biogas by applying biotechnological methods.
- 2 Technology using second-generation carbon dioxide to prepare recyclable raw materials for the production of biogas.
- ? Technology to separate biomethane from biogas without the loss of methane into the atmosphere.
- Technology to separate ammonia from biogas and processed substrates.
- Technologies to control the balanced chemical composition and physical characteristics of the substrates formed in the production of biogas.

**CLUSTERS IN LITHUANIA** 

## **PRODUCT EXCLUSIVITY**

- With the help of the Addeco biogas purification facility, it will be possible to produce biomethane up to 30% more cheaply.
- Addeco technology will enable the production costs of the facility itself to be reduced by as much as 35%.
- The advantage of the Addeco biogas purification facility is its modular construction (using standard shipping containers). This makes it possible assemble, test and demonstrate the facility at the manufacturing base, and before transporting it to another place where it can be reassembled and put into operation.

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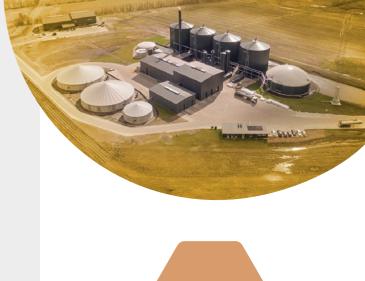
**BM ENERGY SERVICE SIA** 

**VYTAUTAS MAGNUS** UNIVERSITY **AGRICULTURE ACADEMY** 

> **ENERSTENA** UAB

> > UAB

**ADDECO** UAB



**CLUSTER** TURNOVER: **EUR 80 MILLION** 

JV LITHUANIAN **ENERGY INSTITUTE** 

**CLUSTER R&D:** 

**EUR 500,000** 

**CLUSTER EXPORTS: EUR 50 MILLION** 

**ETKC** 

**ARIONEX LT** 

**ENERSTENA** 

UAB

AUGA

**GROUP** 



# DIGITAL ROCKET LT CLUSTER

KAUNAS SCIENCE AND TECHNOLOGY PARK

#### **ABOUT THE CLUSTER**

Digital Rocket LT Cluster was established in 2016 at Lithuania's largest innovation community — Kaunas Science and Technology Park. The cluster devotes much attention to the digitalisation of public services, and to the development of new products and services aimed at improving the quality of people's lives. These encompass health technologies, green technologies, energy management and robotisation. The cluster comprises 13 companies; the majority of which work in the IT and ICT (information and communications technologies) sectors. Other members are engaged in the energy management, software engineering, robotisation and health technology sectors.

#### **ACTIVITIES OF THE CLUSTER**

- 1 Digitalisation of public services, management systems solutions (ERP) for public enterprises, data-driven analysis of transportation and citizens' quality of life.
  - 2 Health technologies for prevention, diagnosis, social care and treatment, ensuring the wellbeing of citizens.
    - 3 Green tech solutions for sustainability through NMBP (Nanotechnologies, Advanced Materials, Biotechnology, and Advanced Manufacturing Processing); projects that save resources and minimise waste; energy-saving projects for public buildings, and green tech-based transportation and mobility solutions, accessibility around cities, etc.
      - 4 Smart city solutions in public places, collaboration structures, data regulation, in the sphere of transportation, smart grids, etc

#### CLUSTERS IN LITHUANIA

# STRENGTHS OF THE CLUSTER

 The cluster benefits from access to Kaunas Technology University's Santaka Science Valley, which offers a specialised laboratory for IT marketing projects, trademarks, internet portals and mobile software research. It applies screenbased eye-tracking technology.

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## PHOTOVOLTAIC TECHNOLOGY CLUSTER

**FETEK** 

**ABOUT THE CLUSTER** 

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The Photovoltaic Technology Cluster (FETEK) is a non-governmental organisation founded in Vilnius in 2008. It brings industry bodies together with institutions involved in research and tech-

nological development. Its aim is to consolidate Lithuanian companies and research institutions operating in the sphere of photovoltaic technology. The cluster comprises 41 members – 10 are scientific research institutions (eight of them Lithuanian); 31 are businesses (26 of which are Lithuanian). Two foreign scientific research centres and three businesses joined the cluster in 2019.

#### **ACTIVITIES OF THE CLUSTER**

- The cluster engages in activities relating to the development of photo-voltaic R&D and the industrial sector.
- 2 Activities relating to other priority fields of science and adjacent industrial sectors in which the results of R&D in the field of photovoltaics can be applied (construction, energy of buildings, lightning, etc.).

#### **ACHIEVEMENTS**

- FETEK has been certified with the Bronze Label Certificate of the European Secretariat for Cluster Analysis (ESCA).
  - 2 The cluster has developed its Smartflex product, aimed at integrating solar modules into the facades of buildings.

#### **R&D ACTIVITIES**

- SUPER PV (Cost reduction and enhanced performance of PV systems). No. 792245.
- 2 INFINITE CELL (International cooperation for the development of cost-efficient kesterite/c-Si thin film next generation tandem solar cells).

- MAESTRO (Making perovskites truly exploitable). No. 764787.
- EU HEROES (EU routes for the high penetration of solar PV into local networks). No. 764805.
- SMART-FLeX (Demonstration at industrial scale of the FLeXible manufacturing of SMART multifunctional photovoltaic building elements). No. 322434.
- ORION (Optimization of Si solar cells, plastic materials and technologies for the development of more efficient concentration photovoltaic systems). No. 222517.
- SOLARROK (Photovoltaic cluster development and implementation measures for a seven-region strategic joint action plan for knowledge-based regional innovation). No. 320028.
- SOLGAIN (Competitive stationary low-concentrating solar module of novel design). No. 315663.
- SELFLEX (Demonstration of SELF-formation-based flexible solar cell manufacturing technology). No. 038681.
- PVPLIUS. No. VP2-1.4-ŪM-02-K-01-001. Cluster's open-access R&D infrastructure.
- 11 PVPLIUS+. No. VP2-1.4-ŪM-02-K-02-006. Development of the cluster's open-access R&D infrastructure.
- InfraPV. No. 01.2.1-LVPA-K-833-02-0001. Development of the cluster's infrastructure for the adoption of new-generation technologies.
- PV4B. No. VP2-1.4-ŪM-01-K-01-002. Photovoltaic technologies for business.

InoPV. No. 01.2.1-LVPA-K-833-01-0004. Development of a system to promote the cluster's innovations to ensure the competitiveness of the photovoltaic sector.

# STRENGTHS OF THE CLUSTER

Open-access R&D infrastructure was established by the joint efforts of Protech and the companies of the photovoltaic technologies cluster. Facilities have been acquired and laboratories have been established for the following activities:

- Testing of raw materials for solar cells.
- Research into the technological processes involved in solar element production.
- Testing of photovoltaic modules.
- Applied photovoltaics research.
- Photovoltaics demonstration laboratory.

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CLUSTERS IN LITHUANIA MANUFACTURING AND ENGINEERING

# AUDIO-VISUAL CLUSTER



FILM & VISUAL ARTS

#### **ABOUT THE CLUSTER**

The audio-visual cluster Nebula was founded in 2015, and today comprises more than 20 companies. The overall turnover of cluster members totals more than EUR 5 million. Member companies work in both the traditional film sector and in such spheres of new media as extended reality, gaming and others. For this reason, Nebula can act as an intermediary and as a chief producer in projects at different levels.

#### **ACTIVITIES OF THE CLUSTER**

Providing services and developing original products in the following spheres:

- Film and video production
- 2 360° videos, VR and AR
- 3 Animation
- 4 CGI and VFX
- 5 Digital media
- 6 App and video game development

## STRENGTHS OF

**ACHIEVEMENTS** 

## THE CLUSTER

 Providing a full range of services to the screen and media industries.

Nebula has been active both in own product

development and supporting R&D investments in its companies. Since its establishment, Nebula has helped to facilitate more than five separate R&D

projects including the creation of a screen industries lab at the independent film studio "Kino studija".

- An experienced cluster management team.
- A strong partner network, both within Lithuania and beyond (especially in the Baltic Sea region)
- A vibrant, functioning R&D lab at "Kino Studija" that is specially designated for the development of immersive reality solutions.

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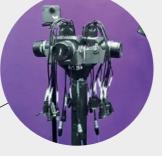
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**CLUSTERS IN LITHUANIA** 



# LASER AND ENGINEERING TECHNOLOGIES CLUSTER

LITEK



#### **ABOUT THE CLUSTER**

The Laser and Engineering Technologies Cluster (LITEK $^{\text{\tiny M}}$ ) began in Vilnius more than 20 years ago. The objective of LITEK $^{\text{\tiny M}}$  is to cooperate in R&D activities, develop laser and engineering technologies at a global level, and to increase the profitability and international competitiveness of the cluster's members.

Members' spheres of competitiveness include: high peak power laser systems; short and ultra-short pulse generation and amplification; nonlinear spectroscopy; substance microprocessing technologies; high-power electronics; optical, mechanical components and products; optical coatings; 3D printing.

The majority of member companies' products are exported to the USA, Germany, France, Great Britain, China, Japan and other countries. The cluster companies participate in international exhibitions. The coordinating partner of LITEK™ is the public entity 'Science and Technology Park of the Institute of Physics'. The cluster comprises 18 member companies, employing more than 700 workers. It invests more than EUR 2.5 million a year in R&D activities. Its turnover totals more than EUR 60 million, and exports total more than EUR 40 million.

#### **ACTIVITIES OF THE CLUSTER**

1 Promoting R&D activities and inter-member cooperation.

**CLUSTERS IN LITHUANIA** 

- Promoting internationalisation and company exports.
- Representing and popularising the sector.
- Oeveloping the cluster's infrastructure.
- Developing, manufacturing and implementing opto-electronic systems and their components.

# STRENGTHS OF THE CLUSTER

#### • Trust

A culture of communication that has grown up over the course of the last 15 years generates mutual trust, which enables ambitious challenges to be successfully undertaken together.

#### • Geographical concentration of companies

The majority of the companies in the cluster are located in the western part of the city of Vilnius. Being only a small distance apart enhances everyday communication between scientists, engineers, specialists and managers. It increases synergies between the cluster's companies and organisations, and helps them to resolve technological problems more effectively. This provides a great advantage – speed.

#### • Competencies and technological possibilities

Cluster members complement one another with different types of knowledge and their mastery of the technologies involved in manufacturing different components, thus forming a complete industrial value chain from product conception to the full integration of components in the system. The cluster has a large research and manufacturing base, and its members invest in the renewal of their production capacities, enabling them to offer services and components to one another.

#### **R&D ACTIVITIES OF THE CLUSTER**

Each year, members of the cluster invest at least EUR 2.5 million in R&D, and participate in EU investment projects aimed at encouraging enterprises to invest in scientific research and experimental development R&D necessary for the creation of innovative products and services.

#### **ACHIEVEMENTS**

- Certified with the Bronze Label of the European Secretariat for Cluster Analysis (ESCA).
- The LITEK trademark has been registered with the European Union's Intellectual Property Office.
- International projects Laser-Go (COSME) and Laser-Go Global (COSME), coordinated by LITEK™, won financing to expand their export markets.
- The cluster has won and implemented the following projects: creating the infrastructure of the LITEK Training and Research Centre; strengthening LITEK's international competitiveness, strengthening synergies within LITEK, RespiceSME (H2020).
- The cluster is currently undertaking an international project with the German cluster Photonics Hub.
- 6 LITEK™ is presented as an example of innovative cooperation model in the innovations financing study 'Financing the Digital Transformation: Unlocking the Value of Photonics and Microelectronics', prepared by the European Investment Bank.



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# LASER MICROMACHINING CLUSTER



#### **ABOUT THE CLUSTER**

TOOLAS began its activities in 2015. At first, the cluster was named VITEK. It began as a platform for closer cooperation between photonics and laser micromachining companies in the community of Visoriai Information Technology Park to create and disseminate their products. The cluster has defined conditions for the management and sharing of jointly created intellectual property. The name TOOLAS has been used since 2019. The cluster is coordinated by Visoriai Information Technology Park. TOOLAS cooperates with more than 35 companies within the Visoriai community.

The members of TOOLAS are the following photonics and laser micromachining companies:

Cognitio (trademark DMC – Direct Machining Control) produces software for laser machining control (including micromachining systems).

Ados-Tech develops and produces advanced optical systems using infrared, visible and thermal detection and imaging technologies.

Optogama (trademark 4Lasers) develops and produces lasers and laser beam delivery devices.

Optonas specialises in optical coatings.

Evana Technologies develops compact optical engines for laser micromachining.

The average age of TOOLAS companies is five years. In 2018, overall turnover increased by around 40%, staff numbers increased by more than 15%, and export volume increased by 70%.

#### **R&D ACTIVITIES OF THE CLUSTER**

The main R&D activities of the cluster are the creation of laser micromachining systems, and the development and manufacture of sub-assemblies and components. Ever since TOOLAS began operating, its members have invested as much as 20% of turnover in R&D, as well as in developing new products.

#### **ACHIEVEMENTS OF THE CLUSTER**

Cluster members engage not only in R&D, but in other joint activities. In 2018, the cluster joined the InoLink project (for the Promotion and Development of Innovation Networking), coordinated by Lithuania's Agency for Science, Innovation and Technology (MITA). It also organised the B2B networking event Baltic Photonics 2018; took part in an EU-Korea Cluster Matchmaking Event (Vienna, Austria) held as part of European Utility Week; participated in the exhibition VISION (Stuttgart, Germany). The success story of TOOLAS company Optogama was included in the publication 'Business beyond Borders' (during 2017 and 2018, a total of 2,549 companies from 111 countries took part in 10 events).

In 2019, TOOLAS companies continue to develop laser micromachining technologies for the precise processing of polymers and brittle solid materials, and to test possible applications within the biotechnology sector.

# STRENGTHS OF THE CLUSTER

- Patented laser micromachining technologies: the ICICLE TECHNOLOGY family.
- Products created by the cluster companies are used by Hitachi, Apple Inc., Applied Materials Inc., IBM Inc., UC Berkeley, MIT, CERN and others.



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CLUSTERS IN LITHUANIA MANUFACTURING AND ENGINEERING

## LITHUANIAN AUTOMOTIVE EXPORT ASSOCIATION



The Lithuanian Automotive Export Association (LAuGEA) is a business cluster founded in 2014. It comprises 19 members: Luft Master, LT, Augija, Autosmilga, Baltic Car Equipment, Baltic Filter, CRAFT bearings, Dažų ir dangų fabrikas, Danushis Chemicals, Eoltas, Gaschema, Jubana, Jupojos technika, Lesta, Papilio kibirkštis, Signeda, ABF LT, Detagama, Šiauliai State College and Neigiamas pagreitis. Cooperation between the cluster's members ensures greater opportunities for product development, testing and marketing in local and foreign markets, as well as the more efficient management of corporate costs.

The cluster participates in research and innovation programme projects; international exhibitions and business missions. It also cooperates with different companies, public authorities, non-governmental organisations, product research and development partnerships, and other institutions engaged in similar activities. In carrying out R&D and innovation activities (Lith: ,MTEPI'), the cluster makes use of the laboratories of cluster members and partners.

Cluster members employ a total of 1,700 workers, offer an assortment of 175,000 products, and export their production to 93 countries. The combined annual turnover of the cluster's members totals over EUR 120 million.

#### **ACTIVITY AREAS**

- Promoting the manufacture and export of automotive parts.
- 2 R&D activities and consultations.
- 3 Cost optimisation.

#### **ACHIEVEMENTS**

The cluster cooperates with the Ukrainian Logistics Cluster, Hungary's NOHAC, The Polish Metal Processing Cluster and Latvia's LETERA cluster. It participates in Automechanika world exhibitions, goes on business missions around the world, and is a member of the Lithuanian Clusters Association.

- The Lithuanian Export Association ranks among 11 most promising Lithuanian clusters. It has been identified as an example of success in Lithuania by the Ministry of Economy and Innovation of the Republic of Lithuania.
  - 2 LAuGEA has been certified with the Bronze Label of the European Secretariat for Cluster Analysis (ESCA).
  - 3 The cluster plans to grow among enterprises both in Lithuania and abroad.

#### **CLUSTERS IN LITHUANIA**

#### **R&D ACTIVITIES OF THE CLUSTER**

Each year LAuGEA invests about EUR 2-3 million in technologies. Around EUR 1 million is allocated to R&D activities.

#### Projects

- A search for partners for international R&D initiatives in the Enterprise Europe Network (EEN) events.
- New experience and unique solutions to a secondary automotive parts market (NEXUS automotive international).
- 3 Increasing the Export of Automotive Cluster by Promoting the Search for New Export Markets and Maintenance of Existing Markets. Financing measure: Business cluster LT of Priority 3 of the EU Funds Investments Action Programme (2014-2020) Promoting the Competitiveness of Small and Medium-sized Enterprises.
- The Improvement of Staff Qualification at Their Workplace. Financing measure: Apprenticeship and Improvement of Qualification at the Workplace of Priority 9 of the EU Funds Investments Action Programme (2014-2020) Public Education and Increase in Human Potential.
- Introduction of Lithuanian Companies Operating in the Field of Vehicle Parts Production into New Markets.
- Promotion and Development of Innovation Networking (InoLink). Financing measure: InogebLT of Priority 1 of the EU Funds Investment Action Programme (2014-2020) Promotion of Research, Experimental Development and Innovations.

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### STRENGTHS OF THE CLUSTER

#### Membership of the LAuGEA cluster provides companies with the following advantages:

- Cost optimisation groups
- An international network of partnerships
- Access to the laboratories of cluster members
- Recognition of cluster members' efforts via award nominations
- The promotion of national and international marketing and exports

- Workshops and practical training
- The organisation of exhibitions, business missions and other events
- Experience in developing projects
- Cooperation with educational and research institutions







# LITHUANIAN PREFABRICATED WOODEN HOUSE CLUSTER



#### **ABOUT THE CLUSTER**

The Lithuanian Prefabricated Wooden House Cluster (PrefabLT) was founded at the end of 2014. It brings together Lithuanian wooden panel, timber-frame and modular house manufacturers and engineering companies. Seven wooden panel and modular house manufacturing companies, one wooden construction engineering company, and four international building component supply companies belong to the cluster. Members of PrefabLT also include Latvian, Norwegian and Swiss companies. Cluster members supply high-quality products and services to the market that fully comply with the requirements resulting from market changes. The activities of PrefabLT members are oriented towards the export of goods and services. Exports make up more than 90% of cluster members' production. The main export markets of the cluster's members are Norway and Sweden. By successfully representing companies within the sector and contributing to the growth of its companies, the goal of PrefabLT is to make Lithuania the leading manufacturer of wooden prefabricated buildings in Eastern Europe.

#### **ACTIVITIES OF THE CLUSTER**

- Extensive publicising of cluster members and the activities of the cluster.
- Building an attractive image of the sector, popularising wooden houses in Lithuania.
- 3 Encouraging cooperation and assistance within the cluster.
- Bringing together related sectors and companies.
- Developing the competences of member companies, organising training.
- 6 Identifying and correcting problem areas / shortcomings in member companies.
- 1 Lobbying.
- 8 Promoting innovation.

# STRENGTHS OF THE CLUSTER

 In 2017, the PrefabLT cluster was certified with the Bronze Label of the European Secretariat for Cluster Analysis (ESCA). The recommendation of the certifying institution helped the cluster to establish contacts with foreign organisations and become actively engaged in cooperation, as well as successfully developing activities of the cluster.

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MANUFACTURING AND ENGINEERING



CLEANTECH CLUSTER

LITHUANIA

SUNRISE VALLEY SCIENCE AND TECHNOLOGY PARK

#### **ABOUT THE CLUSTER**

Cleantech Cluster Lithuania was founded in 2018. It comprises 30 companies, science and research institutions and other entities, which cooperate and share their professional knowledge, skills, business activities, reputation and experience. The cluster aims to enhance the competitiveness of its members, and to promote the image of Lithuania as a country of clean technologies.

In 2017, the overall turnover of the companies belonging to the cluster totalled over EUR 39 million. The coordinator of the cluster Sunrise Valley Science and Technology Park.

#### **ACTIVITIES OF THE CLUSTER**

- 1 The clean technologies promoted by the cluster encompass any process or service that reduces a negative environmental impact, improves energy efficiency, promotes the sustainable use of resources, protects the environment, or promotes the circular economy. Traditional spheres of clean technologies include waste management, solar energy, green buildings, transport, food and agriculture, bioenergy, IT solutions and others.
- The cluster carries out its activities with the help of research and technological development, integrating the fields of clean technologies, promoting interdisciplinary collaboration and producing high added value solutions.
- The cluster's activities seek to enhance the competitiveness of the sector at an international level. One of its main objectives is to achieve make Lithuania the leader in clean technologies in the Baltic States.

**CLUSTERS IN LITHUANIA** 

# STRENGTHS OF THE CLUSTER

## The Cleantech Cluster creates the following value for its members:

- An extensive network of experts in clean technologies
- Establishing contacts with companies working in the field of clean technologies within Lithuania and beyond
- Collaboration in developing new solutions, products and services
- Consultation on R&D and innovation activities
- Participation in international financing, networking programmes





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www.cleantechlithuania.lt





## NATIONAL FOOD CLUSTER



The National Food Cluster (NaMŪK) is an Association of Lithuanian producers founded in 2006. It has 22 members:  $R\bar{u}ta$ ; the LAMMC (Lithuanian Research Centre for Agriculture and Forestry) Institute of Horticulture; Daumantai LT; Salpronė; SatiMed; Baltic Food Technologies; Energenas; Hortiled; Ekosula; Mėlynė; Eideka; Mokslo kavinė; Kėdainių konservų fabrikas; Sultė; Igmis; Judex; Spila; and farmers Regina Šerkšnienė, Milnora Pšibišauskienė, Kęstutis Stasiūnaitis, Eirida Daukšienė, Rokas Venslauskas.

The cluster manufactures innovative products with high added value from Lithuanian raw materials and collaborates with Lithuanian scientists.

Its main objectives are the development of Lithuania's food industry and the promotion of greater competitiveness, innovation, entrepreneurship and partnership between the members of the association.

#### **ACTIVITIES OF THE CLUSTER**

- Uniting cluster members into a network of companies creating high added value.
- Coordinating the activities of cluster members in developing and manufacturing innovative products.
- Encouraging cooperation and exchange of information between cluster members.
- Initiating joint projects and undertaking training to upgrade the skills and qualifications of cluster members.
- 6 Carrying out joint marketing and publicity.
- 6 Encouraging the participation of cluster members in national and international exhibitions.
- Organising business missions by members of the cluster to seek customers and partners.
- Collaborating with research and educational institutions to achieve common goals.
- Representing the interests of cluster members in public bodies and local municipalities, and in national and international organisations.

#### **ACHIEVEMENTS**

- Certified with the Bronze Label of the European Secretariat for Cluster Analysis (ESCA).
- Carrying out activities in Lithuania, the EU states, the USA, China and elsewhere.
- 3 Developing products beneficial to the human organism.

## R&D ACTIVITIES OF THE CLUSTER

- Rūta UAB has implemented the project Development of Functional Food Prototypes Intended to Meet the Specific Needs of Different Groups of People, under the measure "Intelektas LT. Joint Science-Business Projects", and developed Greenz products, an innovative line of easy-to-consume snacks created from vegetable raw materials and their ingredients, bio-active fractions. The snacks are enriched with probiotic cultures, vitamins and microelements. Greenz were put on the market at the event Innovation Drift, held in Vilnius in October 2017. In November 2017. Greenz were named 'product of the exhibition' at Šiauliai-2017. In February 2018, they were selected by the organisers of the International Food Industry Exhibition Gulfood 2018, hosted in Dubai, and presented in the group Discover what's New in Confectionery In 2018, Rūta was awarded the gold medal for innovativeness at the exhibition Agrobalt, and a medal at the exhibition 'Rinkis preke lietuviška'.
- 2 LAMMC SDI scientists and Melyne have developed functional protein beverages that are GMO-, soyand gluten-free, without synthetic additives or artificial sweeteners, that are suitable to vegans and vegetarians.
- Oblicacies made of lyophilised fruit, berries and vegetables have been developed.

# STRENGTHS OF THE CLUSTER

- Growers, manufacturers and research institutions take part in the activities of the cluster.
- The cluster boats a strong research and experimental base in Babtai.
- The cluster provides financial opportunities to invest in R&D activities and the development of new products.
- Development of high-quality, healthy products.
- Cluster members trade and invest in research in Lithuania, the EU, Eastern countries and the USA. In 2018, more than EUR 2 million was invested in Lithuania.

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CLUSTERS IN LITHUANIA AGROINNOVATIONS AND FOOD TECHNOLOGIES

## **SMART FOOD CLUSTER**



#### **ABOUT THE CLUSTER**

The SMART FOOD cluster was established in 2013 on the basis of the Joint Activities Agreement of the Lithuanian Food Exporters Association, LitMEA. It comprises 27 members representing various sectors of the food industry.

SMART FOOD companies have created more than 4,000 jobs, and the overall turnover of cluster members totals more than EUR 700 million. Income from the export of products of Lithuanian origin accounts for more than 50% of cluster members' combined turnover. Production is exported to more than 60 countries.

#### **ACTIVITIES OF THE CLUSTER**

- Activities to promote exports.
- 2 Bringing together the capacities and competences of members of the SMART FOOD cluster to create 'product baskets' of Lithuanian origin and taking them to Lithuanian and foreign markets.
- Coordinating the needs of members of the SMART FOOD cluster for fundamental and industrial research and initiating joint R&D activities.
- Promoting innovation by encouraging the expansion of the cluster and its integration into international networks by attracting new members and increasing the potential for innovation.
- Changing the perceptions of the employees of SMART FOOD cluster members by engaging them in training activities.
- Organising joint participation of cluster members in exhibitions overseas, presenting products of Lithuanian origin.
- Promoting the symbiosis of SMART FOOD cluster members by exchanging experience and knowledge and maintaining regular feedback.

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#### **ACHIEVEMENTS**

- In 2018, SMART FOOD was certified with the Bronze Label of the European Secretariat for Cluster Analysis (ESCA).
- 2 SMART FOOD has become the main cluster representing the Lithuanian food sector within the European cluster community.
- The SMART FOOD cluster is one of the founders of the Eastern Europe Food cluster network.
- SMART FOOD participates in an international project under the COSME programme DIGICLUSTERS.
- SMART FOOD is a member of international consortiums, taking part in international applications and projects (INOSSUP, COSME, ERASMUS+ and others).
- SMART FOOD is a reliable partner to Lithuanian institutions responsible for the development of exports and innovation.

### Joint awards and merits of SMART Food members:

- BRC, IFS, kosher and halal certified.
- SMART FOOD members have built plants equipped with the most advanced technologies, established technological and microbiological laboratories, automated production, and introduced state-of-the-art facilities to maximise production.
- 3 Cluster members have received a great number of awards in Lithuania and abroad.
- SMART FOOD cluster members cooperate with one another, exchanging expertise and good practice.





## R&D ACTIVITIES OF THE CLUSTER

- In 2018, cluster members invested a total of EUR 6.5 million in R&D activities.
- 2 The SMART FOOD cluster has implemented more than 20 projects.

## STRENGTHS OF THE CLUSTER

- SMART FOOD has become the best-known Lithuanian food and beverages cluster in Lithuania and abroad.
- SMART FOOD companies have achieved a high level of technological development.
- Members of the SMART FOOD cluster have considerable experience of foreign markets.

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www.smartfoodcluster.com www.clustercollaboration.eu/ cluster-organisations/smart-food-cluster

## HEALTH TECHNOLOGY

**CLUSTER** 

\*\*Vita

#### **ABOUT THE CLUSTER**

The Health Technology Cluster iVita began its activities in 2011. The cluster comprises 21 health, rehabilitation, sports, textile, engineering, IT and technology companies, as well as companies engaged in other spheres of activity.

#### **ACTIVITIES OF THE CLUSTER**

The main aim of the iVita cluster is to carry out R&D activities promoting innovation policy, and to develop new health technology products and services in the following areas:

- 1 Mobile health technology systems and e-textiles
- 2 Rehabilitation technologies and facilities
- 3 Programmes and tools for health promotion

#### **ACHIEVEMENTS**

- On 10 October 2014, iVita became the first cluster in Lithuania to acquire the Bronze Label of the European Secretariat for Cluster Analysis (ESCA). Its certification was extended in 2018. The Label demonstrates that the cluster has developed its activities successfully and aligns with other European clusters.
- Close cooperation between cluster members resulted in the development of iPulsus, a heart rate and physical activity monitoring system. In 2013, this system was the winner of the innovative product category in the 'Innovation Prize 2013', established by the Lithuanian Innovation Centre together with the Lithuanian Confederation of Industrialists and the Agency for Science, Innovation and Technology. The iPulsus team presented a new version of the system, iPulsus SquadX, at the Baltic Miltech Summit 2018. The new version eliminated previous technological limitations, and can be widely used for running, in gyms, for cycling and orienteering and even in the safe physical training of soldiers. Making use of the measure "Intelektas. Joint science-business projects", cluster members have gone on to develop similar mobile health monitoring systems. In February 2019, five new different iPulsus sport programs were released on to the mobile health app market based on heart rate variability and tailoring the choice of training according to an individual's health status.

#### **R&D ACTIVITIES OF THE CLUSTER**

The cluster recognises that the knowledge and competence acquired by individual companies is not enough to develop a new product. Products are more often developed jointly. This requires substantial investment in research facilities., The

iVita cluster has therefore created the open access centre iVitaLab, making use of the measure Inoklaster LT No. 2. The cluster's new infrastructure enables exceptional R&D research services to be created, leading to the further development and improvement of new products for a preventive health and rehabilitation of an individual and society.



# STRENGTHS OF THE CLUSTER

- Reliable partnership and expertise in any EU project.
- Network of trusted partners.
- Research in the field of health care.
- Innovative technology solutions for new products and services.
- Collaboration in the development of new products for health care, rehabilitation, smart textiles, disease prevention and physiological data monitoring using IT solutions

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# VILNIUS FILM CLUSTER





#### **ABOUT THE CLUSTER**

Vilnius Film Cluster was formed in 2007, when a number of companies in the local film industry joined forces, enabling them to compete for larger and more complex film and TV projects in the global market. As it has grown, the cluster has actively invited other companies engaged in the entertainment industry to contribute to the value chain of its products and services. Members of Vilnius Film Cluster are not merely partners – they are a club of like-minded people whose members not only devise and carry out work in cinema, animation, TV and other audiovisual projects, but also gladly spend their leisure time together. Vilnius Film Cluster comprises 31 members with a combined annual turnover of EUR 20 million in 2018. Exports for the year totalled EUR 8 million, while expenditure on R&D amounted to more than 200,000 euros.

#### **ACTIVITIES OF THE CLUSTER**

- Production of films, animations, TV series, advertising and other content
- 2 Camera equipment rental and service
- 3 Lighting and grip equipment rental and service
- 4 Casting
- 5 Set construction
- 6 Prop rental
- 7 Special effects
- 8 Sound and image post-production
- Technological and sociological R&D
- Organising festivals, events and technical solutions
- 10 Distribution and exhibition of motion pictures

# STRENGTHS OF THE CLUSTER —

- Lasting partnerships between members
- The highest level of professionalism
- High level of infrastructure and technology
- Innovation and creativity
- Responsibility and reliability

#### **ACHIEVEMENTS**

Bronze Label Certificate awarded by the European Secretariat for Cluster Analysis (ESCA).

Ten products (features, documentaries, animations, TV series and advertising) created by the members of the cluster have won awards and nominations at prestigious world film festivals and exhibitions. These include:

- Tokyo Trial: nominated for the International Emmy for Best TV Movie or Mini-series, 2017;
- Wonderful Losers: winner, Warsaw Film Festival Award for Best Documentary, 2017; nominated for the European Film Academy Award for Best Documentary, 2018;
- 3 The Look: winner, Southern Shorts (Hollywood) Award for Best Animation, 2018.



#### **R&D ACTIVITIES**

Between 2016 and 2018, a total of EUR 377,230 was invested in research and development.

Projects include:

- Creation of Vilnius Film Cluster (VKK) infrastructure – VKK-2, No. VP2-1.4-ŪM-02-K-01-010. Total project value: EUR 600,000;
- Development of the Vilnius Film Cluster (VKK) laboratory – VKK-4, No. 01.2.1-LVPA- K-833-02-0007. Total project value: EUR 1.3 million.

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CREATIVE INDUSTRIES

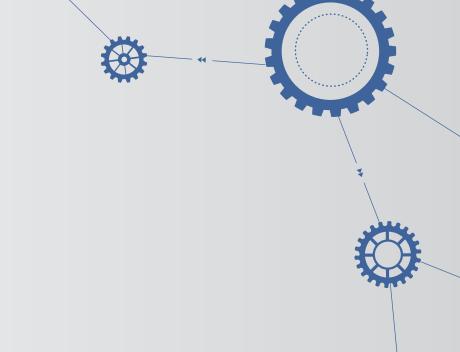
## THE BENEFITS OF CLUSTERS

Joint Specialised marketing and information sales, facilitating Operational is accessible in easier penetration synergies an easier and into other cheaper way markets ...... Opportunities Creation to fulfil large of common orders and 3 specialised participate in infrastructure for purchase the cluster tenders Greater Sharing of competitiveness common, in domestic and specialised international resources markets **.....** Exchanging specialised know-Formation ledge and information of a common, **O** on innovations specialised between companies supply chain engaged in related activities Efficient Better harmonisation conditions for of specialised innovation

staff





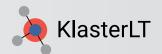


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