CZECHIMPLANT

About cluster CZECHIMPLANT

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CZECHIMPLANT, z.s. was founded at the end of 2016 as the first medical cluster in the Czech Republic with a focus on implantology. The cluster was formed with the aim to provide a functional platform that unites leading domestic manufacturers, universities, and physicians in a combined effort to further develop the field of implantology. The fundamental mission of the CZECHIMPLANT, z.s. cluster is to encourage the development of implantology in the Czech Republic and provide optimal conditions for cluster member collaboration. Cooperation among cluster members is primarily realized via research, development, and the implementation of developmental results into clinical practice. Additional cluster activities include finding suitable means to support member activities, such as: grant programs for joint research and development; economic diplomacy projects to support member companies in penetrating new markets; support for cluster marketing activities; and developing international collaboration, including cooperation with foreign cluster organizations, programs with a regional nature, and more.

Cluster Strategy

The basic strategy of the CZECHIMPLANT, z.s. cluster is to support the development of a significant medical field and provide members with optimal conditions for collaboration. The primary goal of the cluster is to facilitate collaboration among its members in the fields of research and development, and then introduce the results of that research and development into practice; including in areas that may be legislatively challenging for medical devices. Intensive mutual collaboration, support, and experience sharing can produce unique, innovative results within the industry with high applicability potential, especially in foreign markets.

An additional focus of the cluster is the effective use of all suitable means though which member activities can be supported, such as: grant programs for research and development; support for cluster marketing activities.

International collaboration development, including cooperation with foreign cluster organization, programs of a regional nature, and more.

Cluster Vision and Benefits

As a medically-focused cluster, we pursue a vision to create a broad platform for collaboration between manufacturers, universities, physicians, and other research / professional institutions via activities that support further developments in the field of implantology. This platform will also simultaneously ensure support for development innovation, research and development, and the transfer of knowledge and research results.

In terms of competitive ability and health care standards in the field of implantology, the primary cluster benefits are as follows:

- Developmental support in the field of implantology can contribute significantly to: improvements in health care quality; increased life expectancy; improved quality of life for patients; and reduced health care costs, including aftercare costs.
- Greater international prestige for the Czech Republic in terms of implantology quality and standards, with great potential for practical applications of scientific and research results.
- Joint research and development projects in the field of implantology with a focus on: innovative, minimally invasive surgical procedures and methods; new, advanced materials using the latest findings, including nanotechnology; 3D technology, chip technology, etc.
- Increased competitiveness (particularly among small and midsized enterprises (SMEs)) in the fields of research, development, and subsequent production of new materials, new technologies and unique products, and the standards of corporate research centers.
- Increased intensity and quality of collaborations among academic, medical, and application spheres with top scientific and medical centers and institutions.
- Increased potential for cluster member involvement in international research and development projects; establishing contacts with prestigious foreign medical and research institutions; mutual exchange of experiences.
- Increased exports, especially from SMEs that supply innovative, competitive products resulting from mutual collaborations among cluster members, and/or the results of successful research and development projects in the field of implantology.
- Represent members' interests abroad via collaboration with foreign clusters of a similar nature; aid in the establishment of direct relations between Czech and foreign entities in the field of implantology; promote mutual experience exchanges, collaboration, and joint projects.

Research, Development, and Innovation

One of the primary cluster activities is to support and promote cluster member cooperation in the areas of research and development, and the collaborative deployment of these results into clinical practice. The cluster is an intermediary, or the sole custodian, of projects involving research, experimental development, and innovations supported by public funds. An inherent component of cluster activities is support for the commercialization and implementation of research and development into clinical practice.

New medical devices solutions can include:

- Nano-technology.
- New osteosynthetic materials.
- New materials for regeneration of bone tissue, composites of ceramics and organic polymers.
- Resorbable materials made of knit or nanofibrous structures
- Anti-adhesive materials or ways of functionalization of polymeric formations.
- New polymers for implantology and surgery.
- Virtual planning of operations.
- Implants with chips and other medical devices to monitor patient status and other processes (course of treatment, complications, etc.).
- Other innovative practices:
  Functionalization of orthopedic and other implants with nanofibrous layers / inserts with controlled release of active substances or to promote the formation of new tissues.

Topics of research and development projects for which we are looking for other partners and co-investigators:

Development of new medical devices for solving life-threatening and acute conditions of patients.

New medical devices leading to improving the treatment and preventive care of patients in critical conditions, improving the treatment of complications.

Results of this projects will be in faster and minimally invasive procedures for treating the patient, reducing the number of permanent consequences in patients, reducing the number of life-threatening conditions, reducing the cost of treatment and subsequent rehabilitation, a faster return to normal life.

Education and Training

The CZECHIMPLANT, z.s. cluster prepares and implements specialist training seminars or workshops in the field of implantology with a focus on:

- Knowledge transfer between academia and professional practice;
- Gathering and summarizing new information and sharing experience pertaining to legislative processes;
- Technological collaboration and experience sharing among cluster members;
- Establishing collaborations with foreign partners and clusters;
- Employee education and training based on the needs of companies associated within the cluster.

Project Consultancy

The CZECHIMPLANT, z.s. cluster monitors grant opportunities for its members, with a particular focus on grants from national funding programmes and European operational programmes. We offer cluster members the following:

- Finding suitable subsidies.
- The selection and evaluation of grant opportunities.
- Consultation and advice during project realization and budget preparation.

Marketing and Promotion

The CZECHIMPLANT, z.s. cluster promotes member companies, as well as the entire field of implantology itself, at national and international levels. To support member companies in penetrating new markets and increasing export volume, the cluster collaborates with the Ministry of Foreign Affairs in the preparation and implementation of projects in an effort to promote economic diplomacy, and also cooperates with the Ministry of Industry and Trade and its institutions (e.g. CzechTrade, etc.). Further, the cluster prepares presentation materials and participates in trade events, fairs, and exhibitions, as well as other promotional cluster and member activities.

www.czechimplant.cz

MEMBERS OF CZECHIMPLANT

MEDIN, a.s.
ProSpon, s.r.o.
SILROC CZ, a.s.
BEZNOSKA s.r.o.
ELLA-CS, s.r.o.
NANOPHARMA, a.s.
LASAK s.r.o.
3D Tech spol. s.r.o.
Bioinova, s.r.o.
UJP PRAHA a.s.
COMTES FHT a.s.
3Dim Laboratory s.r.o.
ING MEDICAL s.r.o.
GAMA GROUP a.s.
První brněnská strojírna Velká Bíteš, a.s.
ADM, a.s.
IKVAA s.r.o.

MEDIN®

MEDIN, a.s., is a Czech company with the head office in Nové Město na Moravě focusing on the production and distribution of medical instruments and implants. The company tradition started with the production of dental instruments seventy years ago. Currently the portfolio comprises four main product groups – traumatology, surgery, orthopaedics, and dentistry. The major part of the orthopaedics has been developed and manufactured by the cooperating company ProSpon, spol. s r.o. MEDIN ranks amongst the largest European manufacturers of medical instruments as regards the product range. Over one half of the turnover results from export, in particular to European countries, Latin America and Near East.

The development of the company's products includes a close cooperation with the recognized Czech and foreign physicians as the products' users and customers, and also with the research employees at recognized universities.

The comprehensive product offer of MEDIN products includes the professional seminars, workshops, and certified courses for physicians, nurses, and other medical employees in the training centre in MEDIN premises.

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ProSpon

ProSpon is a Czech company with a long-term tradition. It focuses on the development, production and sale of medical devices of Class I, II B and III for orthopedics and traumatology. ProSpon manufactures orthopedic joint replacements for all major joints, top-class oncological replacements of joints as well as parts of bones, external fixators, tools and implants for reconstruction of the anterior crossed ligament, spinal fixators, dental implants and also veterinary implants. It also uses unique titanium 3D printing. The company exports to many countries of the world, mainly to the EU and the CIS.

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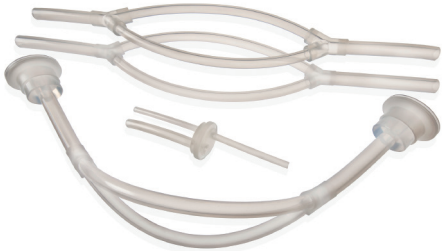
SILROC CZ®
the world of silicone

SILROC CZ is a producer of silicone products for more than 25 years. We use injection molding to manufacture a wide variety of products and components.

Thanks to our know-how and experience we can also offer to our clients the combination of silicone with other materials such as stainless steel, printed circuit boards, or plastics. Furthermore we offer design and production of custom made "ready to use" single use systems for pharmaceutical, biotech and other applications.

Production and packing is done in our certified clean room.



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www.silroc.cz

BEZNOSKA s. r. o.
Vracíme radost z pohybu

BEZNOSKA s.r.o. is a classical Czech family enterprise that has been manufacturing implants, instruments, and surgical utensils for orthopedic surgery and traumatology for more than 25 years. Our largest trading partner is the Slovak Republic, where we opened a subsidiary in Bánská Bystrica, named BEZNOSKA SLOVAKIA s.r.o. Our key trading partners are Russia, Ukraine, Lebanon, Portugal, Germany, Estonia, and other member countries of the European Union.

We closely cooperate with leading specialists ranging from orthopedists and traumatologists to metallurgists.

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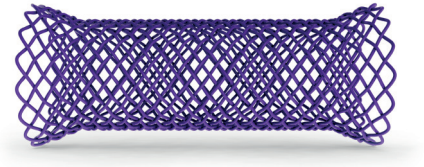
The **ELLA-CS, s.r.o.** company was established in 1991, concentrating on the production of specialized medical equipment.

ELLA-CS, s.r.o. is a producer of medical devices solely based on its own research and development and is a strong promoter of new curative or palliative methods in gastroenterology. The development and production is primarily focused on stents for the gastrointestinal tract. Our portfolio includes esophageal, pyloroduodenal, biliary and colorectal stents. Our company is the sole manufacturer of several globally unique health care devices. One of the ELLA products is a biodegradable stent which is the first implant allowing temporary stent use without the need for its extraction.



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nanopharma
MAKING NANO YOUR OPPORTUNITY

Nanopharma is a Czech nanomaterial company introducing products and technologies to both industrial and consumer markets. The product portfolio involves topical and transdermal drug delivery technologies, 2D and 3D scaffolds for drug discovery and cell culture, as well as a brand new line of dry sheet nanofibre masks called [n]fibrecare.

Nanopharma is looking for distribution as well as co-development partners looking to innovate with innovative and patented nanofibre solutions. The company offers contract research services at all product development stages with special focus on regenerative medicine, drug delivery, wound healing and implantology.

CONTACT:

www.nanopharma.cz
www.followthefibre.com
www.nfibrecare.com

LASAK

LASAK s.r.o. is a research-oriented medical technology company, established in 1991 in Prague, Czech Republic. The mission of the company is the development, production and sale of innovative healthcare products.

Currently LASAK is one of the leading Czech companies in the field of dental implantology and bone tissue regeneration. The products are appreciated in more than 20 countries.

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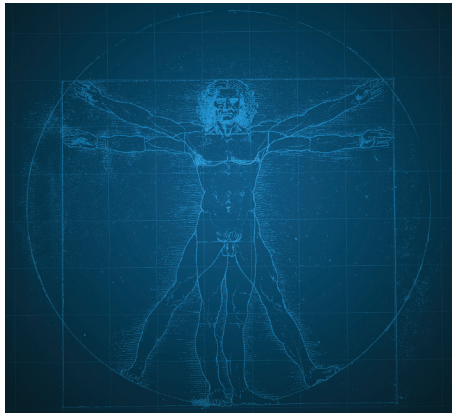
3D Tech. We are the pioneers of Rapid Prototyping technology in the Czech Republic. We are a progressive family business with a fair approach, making your ideas and dreams come true.



For over 20 years, we have been producing prototypes for a number of end manufacturers. We deliver high-quality, visually faithful products in short delivery times, and we have almost unlimited finishing possibilities.

Our offer for healthcare begins with processing data from CT, X-ray and MRI scanners, and continues until physical models or medical aids are made.

We can provide a number of successful references, such as knee replacement models for the Beznoska company, participation in demanding lower jaw surgeries and models of hearts with defects for paediatric patients.

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Bioinova

Bioinova, s.r.o. is a biotechnology company that is engaged in research, development and implementation of innovative approaches to cell therapy.

It develops stem cell based products as well as other cell types isolated mainly from bone marrow and adipose tissue. As part of efforts to develop new therapies for regenerative medicine, the company combines cellular products with commercially available and proprietary biomaterials. It commercially deals with the preparation of autologous stromal vascular fractions of adipose tissue for soft tissue regeneration.

Bioinova works closely with academic research institutes both in the Czech Republic and abroad.

The company is a certified manufacturer of advanced therapy medicinal products in good manufacturing practice.

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ujp praha

The UJP PRAHA a.s. company is engaged in the research of β titanium alloys with Ta, Nb, Zr, Sn to be used in stomatology and orthopaedics implants. Conventional metallurgy and powder metallurgy are used on laboratory and pilot production scales with the aim to manufacture the alloys in sufficient amounts to satisfy the needs of researchers as well as of small and medium processing enterprises.

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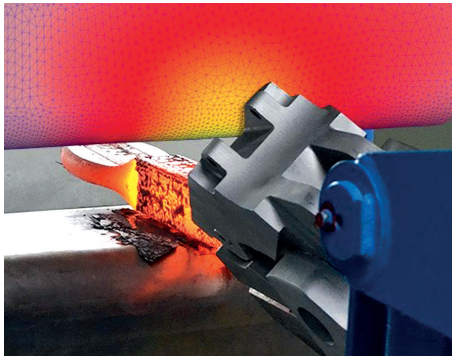
COMTES FHT®
Complete Technological Service - Forming, Heat Treatment



COMTES FHT is a private research company dealing with metallurgy, materials development and testing. The company provides industrial enterprises with tailor made solutions improving the end-use properties of machine parts, lifetime of tools etc. In the experimental metallurgical plant of COMTES FHT new alloys and their processing technologies are developed. Complex technological procedures can be optimized using FEM and physical simulation. In accredited material testing laboratories COMTES FHT performs complex analyses of material failures, mechanical properties and thermos-physical parameters of engineering materials.

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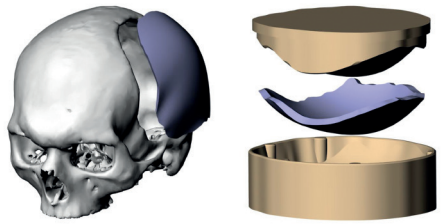
3Dim Laboratory
3D Digital Imaging and Modeling Laboratory

3Dim Laboratory s.r.o.
3Dim Laboratory is a company specializing in applications of modern computer graphics in medicine and developing innovative solutions. Founded in 2008, the company focuses on medical image processing, 3D graphics and visualization, geometry processing and 3D printing.



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ING MEDICAL s.r.o.

ING MEDICAL is a Czech technology company focused in general on medical devices and nanotechnology. In the field of implantable medical devices it provides an antibacterial nanolayer technology using silver ions and develops its own solution for biodegradable bone replacements using spectrum of lyophilisates.

The company is further active in main fields regarding medical devices:

- production of medical grade nanofibres, drug-delivery systems on demand,
- contractual R&D and design, preclinical and functional testing,
- design documentation, technical file completation,
- design of production machines purposed for specific MD manufacturing conditions.

CONTACT:
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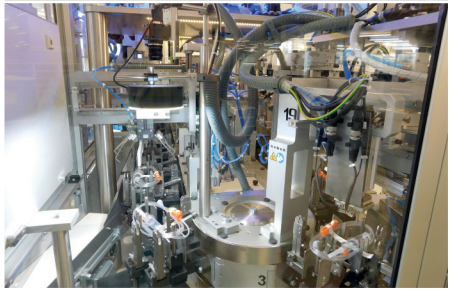
GAMA®
Your Experience



GAMA GROUP a.s. as a manufacturer of medical devices brings the complete solution covering design, development, prototyping, validation, manufacturing (IM, extrusion, assembly, packaging) and EO sterilization, all „under one roof".

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PBS Velka Bites

SINCE 1814

PBS is a pioneering engineering company. With a history that goes back 200 years, it is one of the oldest brands on the global market. PBS Velká Bíteš is a globally recognized hi-tech manufacturer of power units and other equipment in the field of aviation. PBS is also a leading European company in the area of precision casting, and in particular it operates as a highly reliable supplier of castings for the power, transportation, aviation, glass and surgical industries. The company provides professional galvanic surface treatment and highly precise machining, even for difficult-to-machine materials such as titanium alloys.

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Dentapreg

constructive composites

ADM (Advanced Dental Materials) was founded in 1995 to explore ways of adapting strong and dependable aeronautic materials and pioneering their use in dentistry.

Today, Dentapreg continues to grow with customers worldwide. Europe, Israel, South Africa, and Australia – dentists, lab technicians and their patients all across the globe now enjoy the advantages of Dentapreg products.

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The unique properties of Dentapreg® are achieved thanks to perfectly balanced highest-class components and advanced manufacturing technologies. It is composed of glass fibers, which were originally developped for the strength requirements of a space shuttle, and a special blend of light-curing resin that is compatible with all light-curing composites.

IKVAA

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Universities:

ČVUT Praha
VŠCHT Praha
OU Ostrava
VŠP Jihlava
VŠB-TOU Ostrava

FACULTY OF MECHANICAL ENGINEERING CTU IN PRAGUE

CVUT, Biomechanics

Located at the Faculty of Mechanical Engineering, Czech Technical University in Prague, the Division of Biomechanics operates well-equipped laboratories dedicated to research and teaching. Specifically, we investigate fundamental mechanisms underlying mechanical functions of musculoskeletal and cardiovascular systems and how these principles can translate to improvements in joint replacement, exoskeletons, and smart technologies. With our state-of-the-art facilities and close collaboration with academic, clinical and industrial partners, our research team conducts biomechanics and biomaterial research using both experimental and theoretical modeling approaches.

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UNIVERSITY OF CHEMISTRY AND TECHNOLOGY PRAGUE

VŠCHT Praha

The University of Chemistry and Technology, Prague (UCT Prague) is the largest educational institution of its kind in Central Europe with a tradition spanning almost two centuries. UCT Prague is known for the depth and breadth of its educational and research activities in almost all branches of chemistry, chemical technology, materials science, biochemistry, biological sciences, food chemistry, water treatment and other chemistry-based fields of study. UCT Prague cooperates with more than 100 universities and institutions worldwide. The laboratories of UCT Prague provide high-quality equipment for use by students, professors, and research staff members and are equipped with modern instrumentation.

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UNIVERSITY OF OSTRAVA

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College of Polytechnics Jihlava

The **College of Polytechnics Jihlava** provides education as well as applied research, development and innovation services in various fields of study and focuses on meeting the needs of the regional labour market, the needs of companies, corporations and public administration. The Department of Technical Studies provides education of courses related to electrical engineering and computer science, particularly in the degree programmes Computer Systems, Applied Computer Science and Engineering for Industry. The academic staff members participate at many research activities, including the design and implementation of an electronic lung model or research on information coding and processing in nervous system. The research objective is to further our understanding of the mechanical characteristics of human movement, to improve our understanding of the cardiovascular system, and especially to apply the principles of mechanical engineering to the design, analysis and development of implants.

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VŠB – Technical University of Ostrava

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