



Photonics For Advanced Manufacturing Plus

by PIMAP+ partnership

**Advanced and value adding solutions
engineered and produced in Europe**



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www.pimappplus.eu



Photonics For Advanced Manufacturing Plus

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PIMAP+ is an initiative launched by 6 leading European clusters that aims to strengthen the internalization and the cross-sectoral cooperation in the fields of photonics, advanced manufacturing, metalworking and aerospace industry.

It aims to further accelerate the access to international markets for small and medium enterprises (SMEs), to support the development of business agreements and B2B cooperation and to provide a springboard for a successful access to key international markets, notably USA, Canada, China and Japan.

Under the motto "Photonics for International Markets and Applications" the joint cluster strategy has as unique value proposition:

Photonics for Advanced Manufacturing: Advanced and value adding solutions engineered and produced in Europe

This booklet aims to be an introduction to the 6 clusters ecosystems, that gather over 1.000 companies, by congregating information on the clusters and by providing information of some of their innovative companies and organizations.

PIMAP+ clusters will be the access point to the respective ecosystems. Your access point to the most innovative, high performing and advanced solutions made in Europe.

6 European Clusters



French Cluster specialised in photonics - laser and microwaves - electronics



Swedish Cluster focused on Advanced Steels



Production Technologies Cluster in Portugal



Moravian Aerospace Cluster



Lombardy Cluster for Advanced Manufacturing



Leading partner in the Finnish Photonics cluster Photonics Finland

4 Synergetic Domains

PHOTONICS

METAL & METALWORKING

ADVANCED MANUFACTURING SOLUTIONS

AEROSPACE

4 Target Markets



CANADA



JAPAN



CHINA



USA

6 European Clusters



To support cross-sectoral cooperation among cluster organisations and SMEs.



Establish cooperation agreements with international business in countries beyond Europe



Establish cooperation agreements with research intermediaries in countries beyond Europe



To foster SMEs engagement and SMEs internationalisation



To create a European identity and explore the possibility to establish a metacenter



To develop a long-term exit strategy ensuring the sustainability of the PIMAP + Project



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*Advanced and
value adding
solutions
engineered
and produced
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www.pimappplus.eu



PIMAP+ Cluster Partners

Your access point to the most innovative, high performing and advanced solutions made in Europe



ALPHA-RLH
Route des Lasers
et des Hyperfréquences

The ALPHA - Route des Lasers & des Hyperfréquences® (ALPHA-RLH) competitiveness cluster works with companies and laboratories in setting up, evaluating and funding innovative projects. ALPHA-RLH is structured around two key Strategic Fields of Activity: Photonics-Lasers (laser sources and procedures, optical components, instrumentation) and Microwaves-Electronics (integrated circuits, radiocommunication systems, radar systems), with the support of digital tools and promotes the notion of collaborative innovation.

Industrial Focus

Health | Communications-Security | Energy-Smart Buildings
Aeronautics-Space-Defense



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Triple Steelix /
Jernkontoret

Triple Steelix is a regional innovation cluster in Sweden, based around advanced steel. We work together with our world leading steel manufacturers, innovative suppliers and downstream value creating companies to develop new solutions to the markets. Photonics play important roles in the industry, e.g. in automation, instrumentation, QA/QC, digitalisation, AI and metal working. Triple Steelix is hosted by IUC Dalarna.

Industrial Focus

Steel processing, product development and applications | World class competence development
Sustainability, Resource efficiency and Circular Economy



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PRODUTECH
Production Technologies
Cluster

Being officially recognized as the Production Technologies Cluster in Portugal, PRODUTECH embodies a network led by production technologies companies, that encompasses world class R&D organizations, industry support organizations and key players from the several manufacturing sectors. The cluster gathers a critical mass of innovative production technologies companies that are trusted by global brands and industrial value chains in the delivery of the advanced production capacities and solutions that support their industrial performance, agility and sustainability.

Industrial Focus

Production Technologies | Information Technologies | Advanced Manufacturing Systems
Industrial Engineering and Consultancy | Systems Integration



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Moravian Aerospace
Cluster, z.s.

MAC is an association of aeronautics technology manufacturers. It represents 51 companies and universities. These develop, manufacture, certify and test aeronautics technologies. Its members boast a range of advanced skills and capabilities, incorporating the entire manufacturing field. Capabilities include the production aircraft up to the category of 20 passengers, which can be fully carried out via the utilisation of member companies. Firms and universities are established members of the supply chain of global aviation leaders and partake in a number of development EU projects.

Industrial Focus

Design proposals | Aircraft Instruments and Systems | Electric propulsions and drones | Composites
Manufacturing | Special Technologies and Processes | Research, education and services



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AFIL - Associazione
Fabbrica Intelligente
Lombardia

AFIL is an Italian private association, recognized by Lombardy Region as the regional technological cluster for Advanced Manufacturing. The cluster aims at promoting and facilitating R&I actions by creating and animating communities of stakeholders with the final goal to improve Lombardy manufacturing system sustaining its leadership and competitiveness. To accomplish its mission, AFIL is involved in several interregional networks fostering the connection and exchange between local and foreign stakeholders operating in the field of Advanced Manufacturing.

Industrial Focus

Advanced Manufacturing



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Business
Joensuu

Business Joensuu helps companies to innovate, grow and access new capital. Together with Photonics Finland Business Joensuu offers services for businesses, entrepreneurs and investors to whole Finland. Photonics Finland is a technology oriented association that drives the photonics industry in Finland by connecting Finnish photonics companies, research centers, and public authorities. Photonics Finland supports the development of the photonics field from basic research through to the deployment and market launch of products. It is the single point of contact for photonics ecosystem in Finland.

Industrial Focus

Photonics | Photonics technologies | Precision engineering
Forestry | Plastic and metal manufacturing



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DESCRIPTION

FEMTO EASY is a company specialized in ultrafast metrology. We have a strong expertise in the production and characterization of high energy ultrashort pulses and we provide robust and reliable measurement devices for ultrafast lasers, already in use in several state-of-the-art laboratories. Beside their intrinsic technical performances, our products are very easy to use, compact, portable and versatile, which make them the ideal tools for customer services. The products are associated with a high-quality user-friendly software which contributes to making them easy and pleasant to use while maintaining the highest performance.

CORE COMPETENCES / BUSINESS AREAS

ULTRAFast LASER MEASUREMENTS

- Temporal measurement (ROC and FROG): ROC Autocorrelators are used to measure pulse duration while FROG, Frequency-resolved Optical Gating, allows you to know the duration of your pulses, but also how to deal with spectral phase to reach the shortest possible duration.
- Spectral measurement (MISS spectrometer): A spectrometer allows you to know the spectrum for your laser, i.e. the intensity of each wavelength (or frequency) present in your laser. Our MISS spectrometer gives you a two dimensions image, one dimension being the position in one diameter of the beam, the other is the spectrum at this position.
- Spatial measurement (BeamPro): Beam Profilers are devices that allow the whole optical intensity profile measurement of a laser beam. They retrieve not only the beam diameter and position, but also the full shape of the beam.
- Frequency conversion: Nano4th is an ultra compact platform that converts your femtosecond low-energy IR laser pulses (nJ-range) into 2nd and 4th harmonics with best-in-class conversion efficiency.

OUR STRENGTHS:

- Easy-to-use: Our 2 major products can be installed in only 2 minutes with no necessary calibration.
- Accurate and alignment free: Every products are designed to provide accurate and reliable measurements, whatever the experimental conditions.
- Intuitive powerful software: The Femto Easy STAR software can run either on Linux or Windows. It is highly optimized and specifically designed.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



ROC stands for Row Optical Correlator. Based on an ultra compact and robust inline setup, the ROC allows the measurement of single-shot autocorrelation traces. Specifically designed to offer the easiest user experience, they cannot be misaligned and no calibration or tweaking is needed. They are easily transportable and rock-solid.



FROG stands for Frequency-resolved Optical Gating. It is a technique for a complete characterization of ultrashort pulses, thus it can retrieve the full time-dependant electric field, and the equivalent optical spectrum with spectral phase. FROG allows you to know the duration of your pulses, but also how to deal with spectral phase to reach the shortest possible duration.



BEAM PROFILERS are devices that allow the whole optical intensity profile measurement of a laser beam. They retrieve not only the beam diameter and position, but also the full shape of the beam. Thanks to advanced software, large resolutions (25+ Mpix) and small pixels (down to 1.6 μm) can be managed in real-time.

For additional information and solutions visit the company's website.

OUR PARTNERS





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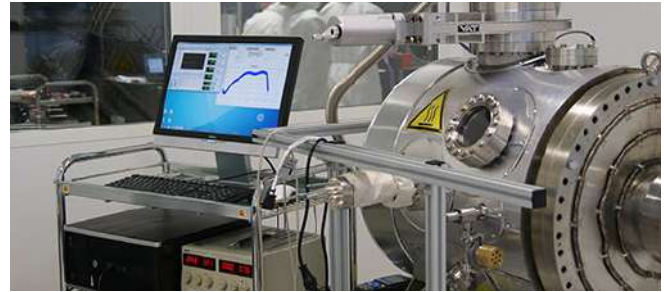


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DESCRIPTION

ISP System is a key actor in precision mechanics, mechatronics, opto-mechanics and robotics and provides innovating products to any sectors of Industry, research and medical. Established in multidisciplinary team, our project team and engineers provide you turnkey and customized solutions to fulfill all your requirements in precision equipment. Demanding on quality for over 20 years, we are specialists in precision mechanics, command and control as well as in robotics.

CORE COMPETENCES / BUSINESS AREAS

OPTICS AND OPTO-MECHANICS – Beam transport, adaptive mirrors for scientific and industrial applications

MICRO-NANO POSITIONNING - Design and manufacturing of Equipment with micrometric and nanometric accuracy (actuators, stages, etc)

SPECIAL MACHINE AND ROBOTICS – Micro-assembly machines for photonics, electronics (active alignment, fiber optics packaging, optoelectronics, etc).

MECHATRONIC EMBEDDED EQUIPMENT – Design and manufacturing of embedded actuators including electronics.

MEDICAL DEVICE – Development of high precision mechatronics and robotics equipment for medical markets (medical imaging, optical benches, robot for radio pharmacy, etc)

PRECISION FRAME - Develop and manufactures various technologies such as composite frame, vibration attenuators, structural bonding, etc

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Deformable mirror – MD-AME

The MD-AME deformable mirror can correct the optical aberrations of laser beam with aperture from 25mm up to 500mm. It is stable even unpowered and easy to maintain. An active cooled version is available for high average power lasers.



Micro-assembly machine – Photomatq PHQ-1000

The PHQ-1000 Laser assembly permits the automated assembly of laser packages such as DPSS or diode laser, passive and active alignment photonic structures, optimization of beam profile, power and polarization.



Fiber optics packaging

Dedicated automatic machines for fiber optics winding, wrapping (fiber reinforcement), fiber optics connector assembly (active alignment and gluing).

For additional information and solutions visit the company's website.

CERTIFICATIONS



Quality Management System
ISO 9001-V2008



Electrical Embedded Actuators and machines for Aeronautics, Space and Defense)
EN 9100

SOME REFERENCES

AIRBUS

SAFRAN

cea

cnrs

ASML

MBDA

THALES

SIEMENS Healthineers

Amplitude

cnes

nexter K.N D'S

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DESCRIPTION

Since 2006, POLYRISE has designed and manufactured optical coating for the photonics industry. Its highly experienced and skilled team of engineers in sol-gel technology and application, combined with a high production rate and efficient dip-coating processes, makes Polyrise's products the most competitive solution to support mass markets such as automotive, outdoor lighting, and sensors. With its disruptive patented wet antireflective coating, Polyrise offers a solution where none existed before. Designed for industrial purposes, our coatings deliver robust add-on features to optical fixtures, such as abrasion resistance and antireflective performance.

CORE COMPETENCES / BUSINESS AREAS

APPLICATIONS:

- **AUTOMOTIVE HEADLIGHTS:** VIEWRISE® antireflective coating on each lens of a Cooke triplet greatly reduces the stray light that superimposes on the main light beam by a factor of 30, thus helping headlights comply with ECE European regulations. In the meantime, the Light Output Ratio increases by 20%, generating electrical power savings and contributing to the reduction of CO2 emissions, for a healthier environment.
- **SENSORS:** Whether the sensor is operating in the visible or near infra-red wavelength range, the adjustable anti-reflective VIEWRISE® reduces reflected light waves and ghost images while it also increases sensor detection distance. HARDRISE® anti-scratch coating adds a protective layer to the exposed surface of the sensor. Both HARDRISE® and VIEWRISE® coatings are designed to support the wide temperature variations that vehicles encounter.
- **OUTDOOR LIGHTING:** Well-designed lighting fixtures naturally spread 2% to 3% of the light into the sky because of reflected light. VIEWRISE® antireflective coating contributes greatly to reducing this amount of undesired light and reaching the limit of 1%.

STRENGTHS

- Industrialized process
- Suitable for mass market
- Coatable on complex shape
- High production rate
- In-house chemical lab
- High controlled quality
- Optical and mechanical characterization
- Sol-gel designer since 2006

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Viewrise® is an anti-reflective dip-coating technology dedicated to mass market such as automotive headlight and suitable with any kind of PMMA, PC or glass substrates.

- Benefits:
- Reduced straylight
 - Improved Light Output Ratio
 - Regulations compliance

For additional information and solutions visit the company's website.

HARDRISE® is a range of abrasion-resistant coatings designed to protect any kind of plastic substrate. Its extremely thin thickness, coupled with a high optical clarity, makes it suitable for use with optical elements. Very resistant to climatic aging conditions, HARDRISE® maintains the appearance and functionality of optical surfaces in harsh environments. Whether application needs to be processed by dip, spray, spin, or flow coating, and be cured by IR, oven, or UV radiation, there is a HARDRISE® that meets your needs.

CERTIFICATIONS





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DESCRIPTION

SANODEV designs and manufactures innovative machines for disinfection which is necessary in many areas: agriculture, food industry, medical and the industry in general. SANODEV has developed and marketed two product lines using pulsed light technology for disinfection : AgroClean Light and LP.Box and a post-harvest treatment that destroys germs using pulsed light technology: Agro Clean Light. Pulsed light treatment is an innovative athermic and ecological process of surface disinfection which uses pulsed power technology to inactivate microorganisms by subjecting them to intense broad spectrum white light flashes for very short times (10- 6 to 10-1 second) produced by an arc lamp.

CORE COMPETENCES / BUSINESS AREAS

WE OFFER SUSTAINABLE DISINFECTIONS MULTI TECHNOLOGIES:

- Pulsed light treatment is based on the emission of a polychromatic light, by flash, covering a wide spectrum.
- Continuous UV is based on the continuous emission of ultraviolet light.
- Electric Arc is based on the emission of an electric discharge in water or in humid air in contact with the liquid to be treated.
- Microwave treatment consists in exciting the molecules and atoms of the body to be treated by the electromagnetic wave, which leads to a heating that eliminates microorganisms.
- Plasma treatment consists of electrically charging a gas to produce free electrons, radicals, positive and negative ions.

OUR MARKETS

- Agriculture
- Food industry
- Medical
- Industry

OUR SOLUTIONS ARE:

- Ecological: We favor innovative physical technologies that respects the environment
- Efficient: We offer total and reliable destruction of targeted pathogenic molecules or micro-organisms
- Tailored: We design the disinfection tool that precisely meets your needs so that it fits into your production process
- Economic: Our solutions are designed to offer greater profitability than existing solutions with a controlled cost

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



LP BOX is a compact and ergonomic machine, in "office" format. It allows disinfection of surfaces, liquids or products by eliminating the pathogens. It also makes it possible to operate the degradation of phytotoxins, mycotoxins, alkaloids, phytosanitary residues and but also to decontaminate containers or samples. Completely secure for the user, it does not require training.



AgroClean Light is a post-harvest treatment that destroys germs with pulsed light technology. Thus, with the selection of particular wavelengths, pulsed light is used for food preservation purposes by destroying pathogenic microorganisms. Our products are very simple to install and will fit directly into your professional installations. The pulsed light treatment reduces the losses due to decay and increases the shelf life of fruits and vegetables.



LightBot is a compact and autonomous robot for disinfection, secured and easy-to-use which uses pulsed light to eliminate bacteria, virus and pathogens in only one passage. Able to detect individual and objects thanks to its various sensors, it also autonomously handles its refill cycle. Applications: hospital, public transport, sales areas.

Height: 1,8 meters Diameter: 0,52 meters
Weight: 145 kg Battery: 50 minutes
Speed: 0,5 meters per second

For additional information and solutions visit the company's website.

OUR PARTNERS





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SANODEV

INNOVATIVE DISINFECTION SYSTEMS

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DESCRIPTION

Spark Lasers develops compact femtosecond and picosecond fiber lasers for biophotonics, industrial and scientific applications. The lasers combine innovative technology, high performance, compact design, intuitive plug-and-play interfaces and high reliability. All lasers are designed, developed and manufactured in France, in our headquarters in Martillac.

CORE COMPETENCES / BUSINESS AREAS

OUR SOLUTIONS

Spark Lasers designs & manufactures compact ultrafast fiber lasers for scientists and high-tech companies. We make picosecond and femtosecond lasers that are smaller, simpler to use and maintain, but offering the same level of performance as larger lasers.

- Ultrafast fiber lasers for life science & biophotonics: Spark Lasers have developed a unique range of lasers dedicated to bioimaging in particular in the field of neurosciences. The unique fiber based technology of Alcor offers unprecedented level of performance with fixed wavelength of 920 nm and 1064 nm in a very reduced format. This makes such lasers highly suitable for most advanced scientific applications.
- High energy fiber lasers for ultrafast laser micromachining: with the ideal combination of high performance, low cost of ownership and reduced footprint, ultrafast laser such as Diadem and Sirius fulfill many requirements of demanding industrial applications in the field of semiconductor, electronics, or luxury.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



**ALCOR SERIES
ULTRA COMPACT FEMTOSECOND LASER
FOR BIOPHOTONICS**

ALCOR is the most advanced femtosecond fiber laser emitting at 920 nm or 1064 nm specifically designed for Multiphoton microscopy with direct injection within any microscope for large span of applications.



**ALTAIR SERIES
FEMTOSECOND FIBER LASERS**

ALTAIR produces high average power with ultrashort femtosecond pulses (<160 fs) at high repetition rate (80 MHz standard, others optional) in an ultra compact and robust format. ALTAIR is a fiber laser providing high stability and excellent beam quality.



**DIADEM SERIES
PICOSECOND FIBER LASERS**

DIADEM is a very compact, high energy ultrafast laser for advanced micro-machining applications needing short femtosecond pulse widths, which offers over 40µJ at 30W and up to 1MHz (standard), with pulses below <400 fs from single shot to 1 MHz and a remarkable beam quality with $M^2 < 1.2$.

For additional information and solutions visit the company's website.

THEY TRUST US





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DESCRIPTION

VLM Robotics located in Gironde, France, contributes to the development of industry 4.0 by the introduction of agile robotics able to solve a major issue for manufacturers : the fragmentation of their production in micro series and the switch to mass customization. For this, VLM Robotics develops agile robotic cells : multifunction (machining, CND, gripping, gluing, additive manufacturing...), multi-technology and multi-work area.

CORE COMPETENCES / BUSINESS AREAS

OUR SOLUTIONS

Agile or advanced robotics to manage your fragmented productions and unique pieces, Multifunction for a maximum of efficiency and AV on your large product, Scalable / reconfigurable and easy to use, Connected and securised manufacturing, Solution to avoid 4D jobs : dirty, dumb, difficult or delicate tasks.

YOUR APPLICATIONS

- MATERIAL REMOVE - Machining, Sanding, Finalisation
- MATERIAL DEPOSIT - Bonding, Welding, Additive Layer, Manufacturing
- NDT - Dimensional Control, Material Health, Vision

OUR PARTNERS

VLM Robotics is a SIEMENS partner providing robotic cell controlled with CNC in Direct Control and Multi-channel for complex manufacturing processes with the following characteristics: multi-interpolation 6-20 axes, multi-data driven (simulation, sensors), complex-post pro development capacity, monitoring in process, closed loops, adaptative robotics, advanced effectors development, data collection, connected cells : instrumentation, data analytic + IA.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Double robots' cells in direct control for manufacturing and NDT in process



Manufacturing cell additive metal parts > 5 m (Polyshape)



Multifunctional machining cell for composite (Nimitech, Lauak)

For additional information and solutions visit the company's website.

OUR REFERENCES





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DESCRIPTION

IVAR Studios is a Nordic immersive studio, working at the intersection of storytelling, technology and communication within 360-video, VR and Augmented Reality. From the base in Stockholm they work with international clients such as National Geographic, Nikon, UNDP and Plan International to build new channels and create more engaging stories. Our focus is working with immersive Virtual Tours for brands and organizations world-wide. We want to bring your customers into your facilities through our digital solutions.

CORE COMPETENCES / BUSINESS AREAS

VIRTUAL TOURS - The world is rapidly transforming into a virtual-first environment. Interaction with leads, clients, visitors, students, colleagues and even family are happening on-screen. Why not invite them into your digital world? Use virtual tours to let people explore your world. A scalable and digital solution that works on every device, from your PC, laptop, tablet to the VR-headset.

VIRTUAL REALITY - Step into new worlds, as if you were there yourself. We pride ourselves to be pioneers within the virtual sphere of interactive Virtual Reality – and it's always been the core of our business. It's what keeps us up at night. VR is one of the most immersive and most fun ways to tell your story and display your idea. Perfect for interactive, engaging and educational content. Interaction enables deeper narratives and more exploration.

VIDEO PRODUCTION - Normal video or cinematic 360-video. We are experts at storytelling in video. Our work spans from regular film production and 360-video ads to complete experiences. 360 degree video is an impressive and immersive way to get your story across with more detail, more emotion and more focus on the user being a part of the story. 360 video expands the level of storytelling, creating an immersive, moving and sounding experience.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Virtual Tours from your production line

We offer a digital solution that let people step into your world, as if they were there. Using our virtual experiences online, you can combine the power of showing your real-world workflow with the scalability of the internet to harness the first digital impression people get of your company and brand.

For additional information and solutions visit the company's website.



VR-headset kit

While all of our experiences work great in a browser, using them in Virtual Reality headsets can make them even more immersive. We offer customized equipment that enable you to bring a full-fledged VR experience to events or to clients.



Live-guided Tours

Replace your regular video calls with our solution to host meetings inside the virtual tour. This means you can invite people to a video call on your own platform and give people a personal tour.



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IVAR

S T U D I O S

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DESCRIPTION

Prodaptor provides measurement and inspection related services and products to the process industry. Our business is to help our clients to solve measurement and inspection tasks and integrate new systems and functions to improve productivity and quality. We can combine existing measurement systems and sensors from our partners and network with knowledge, creativity and innovation to solve measurement tasks which have not been solved before. Thereby it is possible to create tools which make our clients more competitive and profitable.

CORE COMPETENCES / BUSINESS AREAS

OPTICAL MEASUREMENT SOLUTIONS – We have long experience in advance optical measurement for the process industry, on-line measurement of physical dimensions and shape in particular. We are used to both hot and cold conditions and high demands in accuracy as well as process speed. Boosted by our partners and global network we can solve a wide variety of measurement tasks.

PROCESS INDUSTRY – Applications include all types of process industry – but primarily steel and metal. We understand the requirements for availability, serviceability and environmental protection to solve measurement tasks for on-line inspection, closed-loop control, statistical process control and quality assurance in harsh environments.

PROJECT LEADERSHIP - Prodaptor has the ability to combine technology, market and customer benefits with experience throughout the whole chain from research through product development and integration in customer cooperation projects. Prodaptor can support with sounding board or project leader service. Some examples are:

- Find an existing or develop a new measurement solution
- Replace an existing old gauge with a modern alternative and evaluate various options and integration benefits
- Improve the use of measurement data from existing gauges

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS AND PARTNERS



Consulting services

Prodaptor can act as sounding board or project leader from start to finish. We use a project model partly based on well established models, but adapted to measurement and inspection systems for the process industry, based on experience.



Optical thickness measurement

Micro-Epsilons thickness gauges measure material thicknesses from sub-mm to 400 mm and temperatures from room to red-hot. Specular, oily and tilted strips can be measured reliably, safely, economically and very accurately.



Speed, length, width and force measurement

KELK designs and manufacture measurement equipment in steel and metal industry, recognized for the highest accuracy and reliability in the market. The measurement systems are based on optical methods and strain gage load cells.

For additional information and solutions visit the company's website.



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*Advanced and value adding solutions
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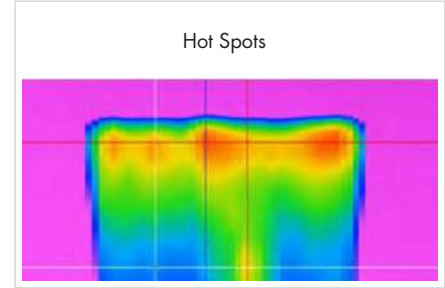
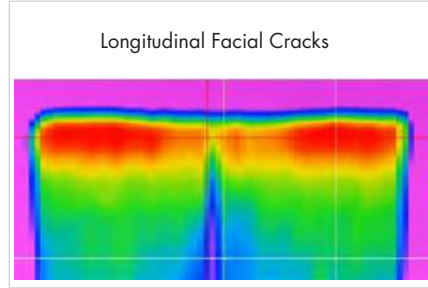
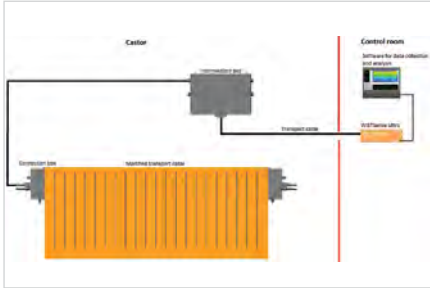
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DESCRIPTION

PROXIMION designs and manufactures customized state of the art fiber optic sensor systems for applications with extreme demands when it comes to critical environment conditions, high number of measurement points, measurement accuracy and time response. Our advanced fiber optic platform based on Fiber Bragg Grating (FBG) technology has the ability to significantly enhance performance and productivity, and can be used for predictive maintenance or process control in various industries. PROXIMION's cutting-edge customized solutions are fabricated in Sweden using our unique ability to precisely tailor FBG sensors and sensor packaging for every specific application.

CORE COMPETENCES / BUSINESS AREAS

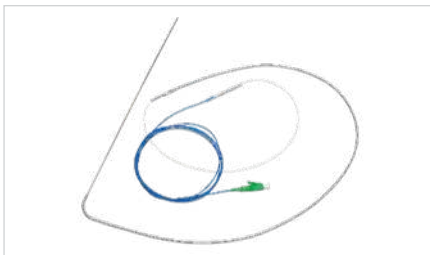
FIBER OPTICAL SENSORS - Fiber optical sensors based on FBG provide an attractive alternative to traditional sensors for many applications. They have the advantages of high accuracy, long term stability, streamlined installation, and premium performance under critical environmental conditions. Optical fiber is essentially a passive, mechanical component of a fiber optic sensor system, it contains neither moving parts nor electrical circuitry and is therefore completely immune to all forms of electrical interference and have extraordinary resistance to mechanical fatigue.

MOULD TEMPERATURE SYSTEMS – PROXIMION's system is a high-density fiber optical sensor (FOS) system that is capable of detecting Longitudinal Facial Cracks (LFC), hot spots as well as multipoint mould level. The monitoring system can visualize effects of casting speeds, mould powders and electromagnetic brakes. Single broad faces have been equipped with more than 2,800 sensor points and narrow faces with more than 400 sensor points. The system can be installed in bloom and slab casters.

SOLUTIONS AND PARTNERS – PROXIMION install and commission the sensor system at customer's site. The system consists of connection boxes, transport cables, harsh environment optical cables as well as interrogator and software. Our temperature measuring system is compatible with OEM's control systems. PROXIMION's fiber optical sensors are also installed in other industries and application such as bearings where PROXIMION has a longterm partnership with SKF.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS AND PARTNERS



WISTHeat Sensors

Customized (design and packaging) distributed temperature sensors based on FBG technology. WISTHeat sensor offer advantages such as small form factor, high spatial resolution (standard spacing 5 mm), fast response time (typically 70 ms), high reflectivity and rugged design.

For additional information and solutions visit the company's website.



WISTSense Interrogator

WISTSense Ultra is an ultra-fast industrial grade FBG-interrogator providing measurement of upto 1,000 sensors per device. The interrogator is ideal for distributed temperature sensing in industries such as: oil & gas, aerospace and heavy industry. It comes with 13,28 or 43 channels.



WISTHeat Monitor

Proximion's analysis software (WISTHeat Monitor) provides complete data acquisition, computation and analysis of all sensors in real-time. The software can be combined with WISTMould Monitor for visualization of casting condition.

CERTIFICATIONS



Certificate of registration ISO 9001:2015

OUR BRANDS



Dispersion Compensation



Optical Layer Monitoring



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DISCOVER YOUR HIDDEN PROCESSES.

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DESCRIPTION

Radarbolaget develops radar systems for through-wall measurement of expansion and distances in harsh industrial environments. The company also develops non-destructive radio-link measurement systems for measurement of moisture and material transformations. These measurement solutions are used for steel furnace optimizations and control, for moisture measurement of wood chips and pulpwood, and for calcination measurement in limestone shaft furnaces and in the cement industry. We create whole-product solutions for real-time process control with our proprietary radar and radio-link systems. It includes installation, integration, IoT-connectivity, and cloud services.

CORE COMPETENCES / BUSINESS AREAS

RADAR AND RADIO-LINK SYSTEM – DiRP (Digital Radar Processor) is an UWB (ultrawide band) radar and radio measurement sensor for innovative solutions. The old RPU-processor has been installed at over hundred steel plants around the world. The DiRP system is the latest technology with highest accuracy and dynamics. The DiRP system is commercially available for partner solutions.

STEEL FURNACE CONTROL – The radar system can be used to center, position, and measurement of expansion, displacement, and curvature of slabs, billets, blooms and steel strips. Measurements are performed through walls of insulation from the sides of a reheating furnace, or from the vault. The sensors are mounted to the metal shield outside the insulation of the furnace.

WOOD MOISTURE – The moisture level can be determined by radio-link measurement through wood chips. Water molecules are sensitive to microwave radiation, and the amount of water will delay and attenuate the radio signal during penetration. Thanks to measurement of large samples, representative moisture content can be determined with high accuracy. The measurement is fast and performed in seconds. Data are processed and stored in a cloud service via an IoT-connectivity device.

LIME CALCINATION – Material investigation of lime calcination in shaft furnaces or in cement production plants is based on radio-link measurement. Radio signals that propagates through heated lime or hot meal are sensitive to temperature, volume, and density. Radio-link measurement makes it possible to investigate the lime calcination in real-time and continuously during the burning process. Radio-based measurement of lime calcination is fast, online, and gives direct measurement at the burning moment.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



OPTIMUS-steel is a radar-based expansion measurement system for reheating steel furnaces. From expansion of slabs, billets, or blooms, the temperature can be computed. Sensors are connected to a heat control system (OPTIMUS+). Integration can be done with an external furnace control and optimization systems for real-time and long-term adjustment for heating optimization.

For additional information and solutions visit the company's website.



VELOX-B1 is a radio-based moisture measurement system in wheel loader buckets. It measure and determine the moisture level in a second and has an accuracy of 1-2 percentage points. This is the first measurement system within the VELOX portfolio. Under development are solutions for moisture measurement in trucks, sample boxes, and conveyors.



C-FLOW-limestone is a radio-based calcination measurement system. It measures and determine the calcination when limestone (CaCO_3) transforms to burned lime (CaO). In real-time, the sensors and the control system give calcination level of the limestones inside the furnace with an accuracy of 1-2 percentage points. The system is used to decrease unplanned stops, reduce rejections, and gives better control.

MEASUREMENT PRINCIPLES



Wood moisture

Limestone calcination

Steel expansion

OUR BRANDS



DiRP
 Digital Radar Processor



OPTIMUS
 Steel furnace control



VELOX
 Wood moisture



C-FLOW
 Limestone calcination



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DESCRIPTION

ADIRA is a manufacturer and global provider of engineering solutions, specializing in the production of hydraulic, electric and hybrid press brakes, shears and robotized cells and Additive Manufacturing. With over 60 years' experience and customers in the four corners of the world, we are able to provide an efficient response to the most complex challenges posed to us.

CORE COMPETENCES / BUSINESS AREAS

ADDITIVE MANUFACTURING – ADIRA's revolutionary method is based on a movable process chamber which efficiently ensures all the conditions required for the LPBF process. Solution for printing large, high quality, metal parts.

AEROSPACE, AUTOMOTIVE, ENERGY, PROTOTYPING & SUPPLY CHAIN – ADIRA's Additive Manufacturing Solution has multiple field applications in the areas of Aerospace, Automotive, Energy, Prototyping & Supply Chain.

SOLUTIONS AND PARTNERS - Through partnerships with some of the most important players from various strategic areas of the market and international manufacturers, ADIRA represents, distributes and integrates first-rate products for applications Laser Cutting & Sorting Industry. Representation and Distribution: Mitsubishi Electric. Partnerships: CEIIA, INEGI, Fraunhofer ILT, IPL, Autodesk, Materialise, Siemens, LPW, among others.

BENDING AND TECHNOLOGY - ADIRA has a wide range of cutting and bending solutions that are flexible and suited to all customer needs. The diversification of our range of productized press brakes and shears is driven by three factors: Performance + Size vs. Investment in the solution.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



AddCreator AC210

The World's Biggest 3D Metal Printer is designed to work with scalable designs, using a LPBF process and a patented Tiled Laser Melting Operation with on-the-fly printing capabilities.

For additional information and solutions visit the company's website.

CERTIFICATIONS



Sólida implementação da certificação ISO 9901:2015

OUR BRANDS



AddCreator #1
Additive Manufacturing



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Controlar
innovating industry

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DESCRIPTION

Founded in 1995, CONTROLAR specializes in industrial automation and test systems with focus on the automotive industry. Its main areas of expertise include electronics development, automotive infotainment, communication systems, assembly lines, systems integration, robotics, vision systems, quality and functional test systems, among many others. With a significant portfolio of projects, CONTROLAR resorts to technologies which are adapted to the real needs and expectations of its customers, at all stages of the project development, from concept design and planning to execution, installation and assistance. The company operates through a network of global production units and companies (Portugal, Spain, Mexico and Malaysia), regional offices, and partners (Germany and India).

CORE COMPETENCES / BUSINESS AREAS

TEST SYSTEMS – Controlar has been developing flexible test solutions for a wide range of infotainment products, such as navigation systems, car radios, instrumentation clusters, displays, etc., for more than 20 years. The company relies on an experienced and highly qualified team of technicians and engineers that bring together several skills for the development and conception of any kind of industrial test systems.

AUTOMATION SYSTEMS - Controlar develops and integrates industrial automation solutions which include the use of advanced technology, project design and the development of mechanical parts, electrical projects, programming, among others.

AEROSPACE AND DEFENSE – The company applies its testing and automation knowledge to the aerospace industry and defense in order to develop systems for validation and certification of electronic, electrical, and electromechanical components.

SOLUTIONS AND PARTNERS -Through partnerships with some of the most important players from various strategic areas of the market and international manufacturers, Controlar represents, distributes and integrates first-rate products for applications in the automation and test systems fields.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Automated Optical Inspection Test Solution

The Automated Optical Inspection (AOI) Test Solution performs functional test and vision test validation on displays and automotive clusters to ensure quality control at the end of the production line or between assembly stations.



TSIM – Test System Intelligent Machine

TSIM performs different levels of functional tests on electronic devices and components at the end of the production line to ensure correct functionality of the DUTs. Highly flexible and modular, which makes it suitable for many industries.



Automatic Assembly Lines

Controlar develops full (semi) automatic assembly and inspection lines for various types of components. With the minimum of human intervention, hand labor is only required for the supply of the devices to be tested on the different set-ups.

For additional information and solutions visit the company's website.

CERTIFICATIONS



ISO 9001: Quality Management Systems



NP4457: R&D and Innovation



ISO 14001: Environmental Management



ISO 27001: Information Security Management



Bosch Nexeed Automation



NUVX.IQ: Cloud Based RF Infotainment Testing Platform



QIO2 Industrial IOT Platform



VIS Toolkit V(irtual) I(nstrument) S(olution) Toolkit



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DESCRIPTION

EGITRON develops hardware and software solutions for the industry, within the scope of quality control and product inspection. Our activity includes all phases of the solution, from its design, manufacture, sales, technical assistance and support.

We help our customers to control the quality of their production, to ensure that the final product is delivered to the customer according to the specified characteristics.

With 30 years of existence and customers all over the world, spread over about 45 countries.

CORE COMPETENCES / BUSINESS AREAS

HARDWARE SOLUTIONS - EGITRON develops test systems for the industry, assuring the customer's product performance and quality: 2D and 3D artificial vision systems, microwave measurement technologies, automation systems with integration of any kind of sensor and subsystems (PLCs, axes, robots, motors, servomotors, IIoT, etc).

SOFTWARE SOLUTIONS - Besides the hardware competences, EGITRON as a strong software knowledge and capacity to develop all kind of software projects: laboratory quality control, statistical process control, interconnection of machines with different communication protocols and smart objects, and integrations with MES and ERP software.

PARTNERSHIPS – With different types of partnerships EGITRON can provide a wide range of expertise and solutions: Universities and scientific institutions (FEUP, INESC TEC, UMinho, CATIM, CTCORK, etc.) Integration technology partners (INFAIMON: Teledyne Dalsa, LMI Technologies, Specim, Effilux; CELTRONIC: Micro-Epsilon, Liebherr, Pepperl+Fuchs.), Representation and Distribution (Mecmesin, Minebea Intec, Somex, Kroeplin, etc.).

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



SANE - filling level analyzing system

With this system, besides accessing the filling level of the analyzed bottles, it's also possible to define filling levels for Pass/ Fail alarms, identify and reject bottles without a stopper and also measure the headspace.



PrecisionCork – Cork stopper on-line quality control and key parameters measurement

Implementation of "zero-defect" strategies measuring parameters (humidity, dimensions, etc...) with a non-destructive and a non-contact measuring systems.



WaveCork - Microwave based cork stoppers' humidity measurement system

Equipment for moisture level precise measuring in cork stoppers. Non-contact and non-destructive method and with potential application to other products. This system was developed embedding the industry 4.0 paradigm with MQTT (IIOT) communication for integration.

For additional information and solutions visit the company's website.

CLIENTS

AMORIM CORK





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EGITRON

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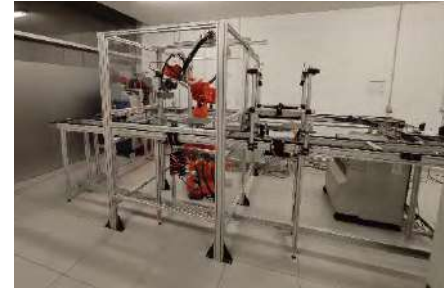
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DESCRIPTION

INTROSYS is specialized in industrial automation, grew and gained the trust of customers and partners thanks to differentiation, allowed by the processes of management and organization implemented. A market leader, operating in the international market since 2004, the company has become a reference in the field of robotic control systems, revolutionizing in the entire robotic manufacturing industry. At the forefront of technological evolution, INTROSYS is responsible for the design and development of solutions for industrial and mobile robots, process control units, human-machine interaction, perception and non-destructive quality control systems.

CORE COMPETENCES / BUSINESS AREAS

AUTOMATION SYSTEMS – INTROSYS offers innovative turnkey solutions for industrial automation, including electrical design and planning, electrical installation, virtual commissioning and PLC programming. Also, we conceptualise and build custom and integrated automation machines, adapted to our client needs.

ROBOT PROGRAMMING – We have a multidisciplinary team of engineers certified for programming a vast range of industrial robots, both offline and onsite. Our expertise addresses robotic arms, collaborative robots and unmanned intralogistics vehicles, and span across different applications such as welding, pick-and-place, vision and lidar-based guidance, palletizing and transportation.

NON-DESTRUCTIVE QUALITY CONTROL – INTROSYS values quality and trust above anything else. Thus, we develop comprehensive quality control systems based on non-destructive techniques, that are able to inspect 100% of products being processed in production lines. Our technology includes, but are not limited to, 2D and 3D imaging, hyperspectral imaging, LiDAR and eddy currents. Nonetheless, we are always experimenting with new cutting edge sensory solutions.

SOLUTIONS AND PARTNERS – During the years we grew our network of partners to include with some of the most important players from various strategic areas of the market and international manufacturers. INTROSYS has been implementing solutions for AUDI, BMW, Ford and Volkswagen for more than a decade. We integrate and develop systems from AUDI, ABB, COMAU, EBE, FFT, IDS, SICK, SIEMENS, SPECIM, ThyssenKrupp and VW, among others. To always guarantee high levels of excellence, we also constantly and proactively participate in research and development projects along with major European research institutes, Universities and other innovative companies.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



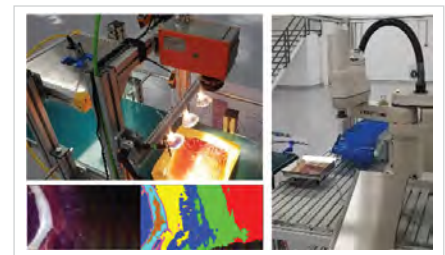
Inline adhesive bead inspection

INTROSYS develops custom solutions for adhesive bead inspection, during or after its application, with the ability to check thickness, position and continuity. The system can also be configured to correct defects automatically.



Vision-based robot guidance

INTROSYS uses vision systems and lighting techniques to ensure precise guidance for fast paced pick-and-place robots. Each setup is thoroughly studied according to customer needs and workplace characteristics, for maximum reliability.



Processed food inspection and sorting

INTROSYS applies hyperspectral imaging and machine learning algorithms to access observable chemical characteristics of processed food and guarantee compliance with quality and safety requirements. The solution can be seamlessly integrated with automatic sorting and packaging systems.

For additional information and solutions visit the company's website.

CERTIFICATIONS

OUR BRANDS

 ISO 9001:2015	 NP 4457:2007	 Siemens – Solution Partner	 ISMS Information Security Management Systems	 WCA – Workplace Conditions Assessment	 iSent® Machine sensing solutions	 F-Tools® Factory tools for optimization	 INTROBOT® Mobile field robots
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iNTROSYS

Global Control System Designers

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DESCRIPTION

With almost 35 years of know-how in robotic welding, MOTOFIL continues to be one of the market leaders in this sector. Focused on developing “turnkey” solutions, MOTOFIL’s robotic solutions are distinguished from the others by their great adaptability to any task, with proven results in various industries, such as agriculture, metalworking and automotive, which requires high precision and quality. In addition to standard solutions, we have a diverse portfolio of special solutions considering the challenges of each client. The quality of our products and the trust of our clients led to the company’s fast growth and the creation of delegations in Spain, Brazil and Mexico.

CORE COMPETENCES / BUSINESS AREAS

ROBOTIC WELDING – We have a wide range of standard systems, designed to help different industries, such as the production of agricultural machinery, structures and metallic furniture, heating systems, among others. Besides the standard solutions, MOTOFIL’s specialized team can designed any kind of robotic solution to meet the needs of the client.

AUTOMOTIVE SYSTEMS – MOTOFIL has been developing robotic solutions for the main players in the automotive industrie in the last ten years. Besides MIG/MAG welding solutions we have a wide experience in manufacturing resistance and spot welding presses.

AEROSPACE – MOTOFIL is one of the largest supplier of tools for the aeronautical sector in Portugal. We provide our clients with turnkey tooling and composite solutions, drilling templates, assembly tools, etc.

CUTTING TECHNOLOGY – More recently, MOTOFIL started manufacturing thermal cutting equipment using cutting technologies such as HD plasma, oxyfuel and fiber laser.

COMSUMMABLES - With the brand Motomig, MOTOFIL produces SG2 and SG3 MIG/MAG, Copper-Coated and Copper Free, welding wire. We are also suppliers of other welding and cutting consumables.

For full information on the complete set of core competences and business areas visit the company’s website.

SOLUTIONS



Monoblock System

This MIG/MAG welding solution is ideal to produce two or more fully differentiated products. A single structure integrates all the parts of the system making it easier to install and to change its location.



Ferris Wheel Positioner

Robotized welding cell with small footprint, based on a complete metallic structure that allows easy installation and transportation. The robots are inverted to allow better access to the welding points. All elements are built-in to protect from damage.



Classic Double Sky-Hook System

Complete chassis in a compact model with two workstations. Designed with a unique structure for easy installation and transportation. With the combination of inverted robot and orbital positioners we have an optimization of the access to the points to weld.

For additional information and solutions visit the company’s website.

CERTIFICATIONS



Sólida implementação da certificação ISO 9001:2015



Sólida implementação da certificação ISO 14001:2015



Sólida implementação da certificação ISO 45001:2018

OUR BRANDS

motofil
/automotive system

Motofil Automotive System
Automotive Solutions

motomig

MOTOMIG
Welding Wire

IDEALASER

IDEALASER
Welding and Cutting Consumables

Anadirobotic
SOLUÇÕES DE AUTOMAÇÃO

ANADIROBTIC
Handling, Sanding and Polishing



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DESCRIPTION

Specially focused in the steel fabrication industry, SARKKIS - Robotics, develops, produces, commercializes and integrates industrial transformation equipment with robotic "backbone" and offline robot programming software.

With the offline programming software by SARKKIS – Robotics and sensing inputs, the robot's most penalizing productivity constraint, programming downtime, is heavily mitigated, with results specially relevant when working with small production batches.

SARKKIS - Robotics' portfolio is customized to Client's production scenario - new equipment supply or the upgrade of equipment in operation.

CORE COMPETENCES / BUSINESS AREAS

Seamless integration with widely used 3D construction software applications (Tekla, SDS2, Advanced Steel, Aveva Bocad, IFC 2X3, IFC 2x3 EM.11) exporting CAD fabrication files (BIM, IFC, STEP,...), augmented reality by image/laser projection for supporting steel part fitting, automated/independent part positioning equipment, automatic robot programming software, anti-collision path planning generation, active error compensation of welding seams position, multi-run welding, welding process parametrization and integrated machine control... and other technological features, both equipment and software, integrate SARKKIS - Robotics offer for innovative and robotic effective productivity.

PORTFOLIO RANGE:

CoopWELD – Collaborative robotics for structural steel fabrication – a "MUST HAVE" highly efficient fabrication tool for any and all structural steel fabricators.

SPRINKLERS PRODUCTION SYSTEM – SPS160 – Robotic application for sprinkler pipes automatic fabrication.

MetroID Offline Programming software: Prompt automatic robot programming | CAD (STEP, IFC,...) | Active path error compensation

Welding: BeamWELD | PrimeWELD

Cutting: BeamCUT | TubeCUT | PlanCUT

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



CoopWELD – Fitting and Welding equipment, structural steel fabrication

Augmented reality for fitting and tack welding support, single&multi-run robotic welding with automatic robot programming software so that User may get the most out of such a simple concept, yet highly efficient, inovative tool.

SPRINKLERS PRODUCTION SYSTEM – SPS160

Twin robot synched work cell - pick, position and cut, tack weld and weld.
Automatic material stock feed-in and lead-out.
MetroID Piping software for machine control, DWG and IFC input format files.

MetroID Offline Robot Programming

Hardware being the "muscle", SARKKIS software makes the "muscle" thrive in productivity.
Welding|Cutting|LSF|Augmented Reality
STEP|IFC|CAD
Prompt automatic robot programming.
Anti-collision path planning| Error compensation

For additional information and solutions visit the company's website.

OUR BRANDS / PRODUCTS



CoopWELD
AR Fitting
and Robotic Welding



SPS160
Sprinkler Pipes
Production System



Positioning System
Positioning System



MetroID PrimeWELD
Robot automatic
programming –
Undifferentiated cell



MetroID BeamWELD
Robot automatic
programming –
Structural Linear



MetroID BeamCUT
Open section
robot cutting



MetroID TubeCUT
Hollow section
robot cutting



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SARKKIS ROBOTICS

INTELLIGENT ROBOTIS.OUTSTANDING PRODUCTIVITY!

CONTACTS

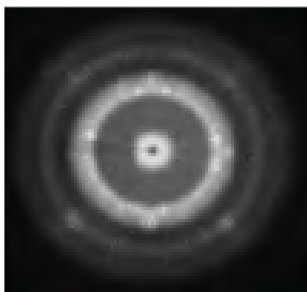
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DESCRIPTION

Advacam's expertise covers semiconductor sensor manufacturing, micro packaging, radiation imaging cameras and development of imaging solutions for industrial and academic needs. Advacam commercializes Medipix technology that is under development at CERN, Switzerland. The Camera team in Prague consists of renowned scientists, engineers and programmers with long experience in electronics design, software and application of radiation imaging detectors.

CORE COMPETENCES / BUSINESS AREAS

SENSOR MANUFACTURING – Advacam's standard offering covers pixel, micro strip and diode sensors fabricated on 6" high resistivity silicon wafers. The most thinly sensors, down to few micrometer thickness, can be fabricated using a well established carrier wafer technology. Advacam has specialized in the fabrication of edgeless pixel and microstrip sensors.

WAFER SOLDER BUMPING – Advacam uses electro – chemical plating processes for depositing solder bumps with UBM on 6"- 8" wafers. The solder bumping process is only offered for complete wafers. The wafer bumping process requires one mask layer. The process is compatible with standard 8" CMOS wafers and also with the 6" and 8" silicon sensors wafers.

FIN CHIP BONDING - The Advacam team has been involved in flip chip assembly of hybrid pixel detectors with various pitches and sized since 2002, allowing for special competences to develop over the years. Today Advacam provides commercial flip chip service for its customers. In addition to production – oriented work, Advacam also help customers with R&D projects.

OTHER SERVICES - Advacam offers several other services related to semiconductor sensor fabrication and micro packaging in order to offer single stop turnkey solution to its demanding customers.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



AdvaPIX TPX3

AdvaPIX TP3 is the world's first radiation imaging detector that operates in a list mode. This means every single hit of radiation is recorded into a continuous stream of data.



MiniPIX TPX3

The camera is miniaturized and low power radiation camera with the state-of-the-art Timepix3 chip. The Timepix3 is the CERN's latest pixel detector chip that records position, energy and time for every detected quantum of radiation.



Industrial Spectral Scanner Camera

The camera consists of either 2x10 or 1x10 Medipix3 devices. Each pixel has two integrated 12-bit digital counters and two energy discrimination thresholds. Both counters can be joined to a single 24-bit counter providing enhanced dynamic range.

For additional information and solutions visit the company's website.



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ADVACAM
Imaging the Unseen

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DESCRIPTION

Alucast is one of the largest manufacturers of aluminium castings in the Czech Republic. By using sophisticated technologies, we are able to produce a complete part including its assembly, machining (at our subsidiary Alucast machining, s.r.o.), surface finishing and required inspection methods to meet increasingly difficult customer specifications.

CORE COMPETENCES / BUSINESS AREAS

CAST ALUMINIUM ALLOYS

ALUMINIUM WELDING

HIGH PRESSURE WATERJET BLASTING - Technology for the removal of ceramic mold by high-pressure water jet belongs to extremely eco-friendly technologies both in terms of quality of the casting surface, and environmental protection.

RAPID PROTOTYPING - Making of patterns on 3D printers is common today and this technology is now owned by many companies. If the final product is to be made from plastic material (ABS), then the part made on a 3D printer is fully satisfactory.

ALUMINIUM INVESTMENT CASTINGS - We do aluminium investment casting with mechanical values and high surface quality.

MAGNESIUM INVESTMENT CASTINGS - We work on magnesium castings, from the alloys AZ91, WE43 and Electron21.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



ALUMINIUM INVESTMENT CASTINGS

We do aluminium investment casting with mechanical values and high surface quality. Lightweight, durable and with all necessary special processes included.



RAPID PROTOTYPING

If the final product is to be made from plastic material (ABS), then the part made on a 3D printer is fully satisfactory. Final part made of metal (Al, Fe, Mg, etc.), the pattern made on the 3D printer with the Rapid Prototyping technology needs to be transferred into the cast temper.



MAGNESIUM INVESTMENT CASTINGS

Comprehensive solutions in area of magnesium castings. Various applications in space, aerospace, defence and optronic sectors, where quality and weight most important factors.

For additional information and solutions visit the company's website.

CERTIFICATIONS



ISO 9001
Certified

OUR BRANDS

alucast

Alucast
Investment castings



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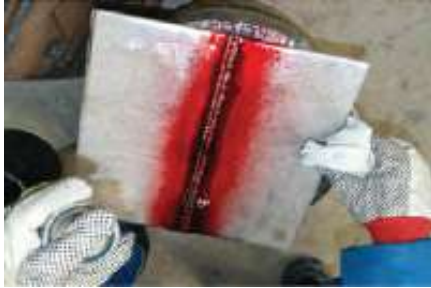


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DESCRIPTION

ATG offers complex services in NDT = nondestructive testing, which contain every standard method of testing: PT, MT, UT, ET, RT, VT, LT. The main activities include NDT training, qualification and certification of NDT workers Level I, II and III. ATG develops and offers a production of devices and equipment for NDT testing, NDT inspections for all industries, Inspection activities in industry - independent assessment of conformity, safety and quality. ATG also provides accredited activities according to the requirements of CSN EN ISO / IEC 17043 for the area of "Proficiency testing of NDT laboratories.

CORE COMPETENCES / BUSINESS AREAS

PENETRANT TESTING - This method is suitable for detection of surface imperfections. The main application is in the automotive and aerospace industry, furthermore in energy and transport industry. It is irreplaceable method for testing of non-ferromagnetic materials. This method can be used for part examination both in-process and in-service or maintenance.

MAGNETIC PARTICLE TESTING - Due to simple physical background this method is easy to perform and it is very often required during the maintenance of the plant. MT is able to detect the surface and sub-surface imperfections (cracks, porosity, inclusions etc.) in the ferromagnetic (Fe) material.

ULTRASONIC TESTING - The advantage of the UT is possibility of the process automation especially in case of simply shaped semiproducts (like pipes, plates, rods etc.). The ultrasonic testing is able to detect planar or volumetric imperfections in contact with surface as well as under the surface.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Visual Testing

Visual testing (VT) is the most common NDT method. The method is focused on detection and evaluation of the part surface condition (or properties) directly by eyes or by means of the special equipment or aids.



Leakage testing

Leakage testing is focused on the detection of the imperfections in the solid boundary-line, which allow escaping of liquids. This method is able to detect imperfections of the material failure of metallurgical.



Infrared testing

Thermographic testing is used in those cases, when it is expected that the defect of tested piece will affect the temperature distribution on the surface. The inhomogeneous distribution of temperature can be reached by many ways.

For additional information and solutions visit the company's website.

CERTIFICATIONS



NADCAP
Certification



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DESCRIPTION

With its consistent product and quality strategy, the **BD SENSORS** Group has since its founding almost 25 years ago evolved into one of the most innovative providers of electronic pressure and fill level measuring instruments industry relies on. BD SENSORS is the global address for accurate use of pressure measurement technology and hydrostatic level measuring. BD SENSORS has furthermore established itself as the problem solver bar none in the sector.

CORE COMPETENCES / BUSINESS AREAS

MACHINERY AND PLANT CONSTRUCTION - The machinery and plant manufacturing sector spans an enormously wide range of different applications. Plant control is based on reliable and accurate measurements based on sensors.

ENERGY GENERATION AND TRANSMISSION - Not only high performance, but also accuracy, durability and stability are important in the energy industry.

SHIPPING AND YACHT CONSTRUCTION - Plant and equipment used on ships and yachts are exposed to the harshest of climatic conditions, to rough environments and extremely high mechanical stress. BD SENSORS pressure and fill level measuring instruments will remain reliable and durable for many years under such conditions of stress.

CHEMISTRY / PETROCHEMISTRY - Chemical processes make very high demands on electronic pressure measuring instruments and hydrostatic fill level probes.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



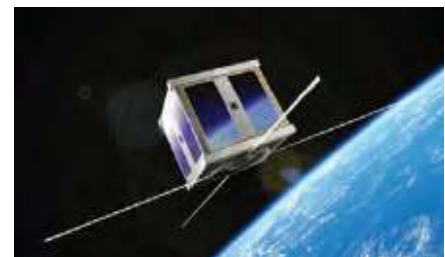
Differential pressure transmitters

For differential pressure measurement pressure ranges 0 ... 1 mbar up to 0 ... 70 bar. Differential pressure transmitters may be used for numerous fluids and gases.



Electronic pressure switches

Pressure range 0 ... 6mbar to 0 ... 2200 bar with up to 4 contacts. Intelligent pressure switch for general plant and machine construction and the processing industry.



BDSAT: Nanosatellite for experimental orbital sensor systems verification

The BDSAT project aims to create a prototype of pressure measuring equipment and to verify the functionality of this technology in open space conditions.

For additional information and solutions visit the company's website.

CERTIFICATIONS



ISO 9001
CERTIFIED

OUR BRANDS



DataFly
IoT solutions



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BD | SENSORS
pressure measurement

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DESCRIPTION

MEOPTA is an international company with a long rich tradition of developing, manufacturing and assembling world class optical, opto-mechanical and optoelectronic products.

Meopta's state of the art design, engineering, manufacturing and assembly capabilities enable it to provide the highest quality products and services to the industrial, military and consumer markets.

CORE COMPETENCES / BUSINESS AREAS

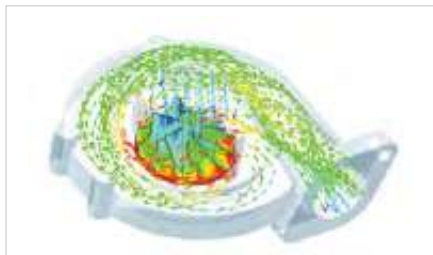
INDUSTRIAL & OEM APPLICATIONS - Meopta has a long tradition of producing high quality precision optics and mechanics for components, optoelectronic and optomechanic subsystems and full turn/key systems.

MEOPTA SPORTS OPTICS - Experience the beauty of nature in exquisite detail and vivid colors. Meopta Sports Optics will be your partner for your adventures in the nature.

MILITARY APPLICATIONS - Meopta has a long tradition of producing high quality military optics tested by many customers all over the world.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Flow simulation

Properly designing a structure to ensure a perfect seal or an active medium flow is important both for assemblies for industrial applications and sports optics.



Structural calculations

We put high level of importance to structural calculations during the development of our products.

It is necessary to map the causes and course of tension in opto-mechanical assemblies.



Design of optical assemblies

The OLS800-Tsi Handler (from the OLS Series) fits with any offline ICT (In-Circuit) testing application. Its design allows a fast and ergonomic fixture exchange, with less than 3 minutes of fixture changeover time.

For additional information and solutions visit the company's website.

CERTIFICATIONS



ISO 9001
Certification



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DESCRIPTION

MGM COMPRO was founded in 1990. Since the beginning it has been focusing on development and production of specialty electronics. In 1997 MGM COMPRO starts as one of the first companies in the world with development and manufacturing of processor-based speed controllers for electric motors. Since then customers around the globe connect MGM COMPRO with quality, outstanding features, parameters, and technical solutions.

CORE COMPETENCES / BUSINESS AREAS

PROPULSION SYSTEMS - MGM COMPRO has a long tradition in the development of electric propulsion units – from large series of systems ready for in-building to special tailor-made units, which change contemporary standards of electro mobility, e.g. in electric aircrafts, vehicles, UAVs, UGVs, boats, military applications, jet surfs and many other fields.

MOTOR CONTROLLERS - The industrial ranges of HBC and HSBC controllers represent state of the art technology of electromotor control. Electric speed controllers ranging from low to high power, low as well as high voltage are manufactured in many variants and designs to completely fulfill customer needs.

BATTERY MANAGEMENT SYSTEMS - Battery Management Systems (BMS) bring new dimension to economic effectiveness for applications using lithium-based batteries. They ensure high end management of energy storage in battery systems for various industrial applications, electric aircraft, solar and wind plants, intelligent houses and other electric vehicles.

BATTERIES - Lithium based battery cells are currently the best available energy storage technology, which is exceptional mainly for its high energy density and the capability to deliver high currents.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



ELECTRIC PROPULSION SYSTEMS

Development of electric propulsion units – from large series of systems ready for in-building to special tailor-made units, which change contemporary standards of electro mobility, e.g. in electric aircrafts, vehicles, UAVs, UGVs, boats, military applications, jet surfs and many other fields.



BRUSHLESS MOTOR CONTROLLERS

The industrial ranges of HBC and HSBC controllers represent state of the art technology of electromotor control. Electric speed controllers ranging from low to high power, low as well as high voltage are manufactured in many variants and designs.



BATTERY MANAGEMENT SYSTEMS

BMS ensure high end management of energy storage in battery systems (during charging, as well as discharging and even with very high currents) for various industrial applications, electric aircraft, solar and wind plants, intelligent houses and other electric vehicles (cars, boats, paramotors, etc.)

For additional information and solutions visit the company's website.

CERTIFICATIONS



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ISO 27001
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OUR BRANDS



MGM COMPRO



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DESCRIPTION

PWR Composite focuses mainly on CNC machining and processing of technical plastic, layered insulators of electrical insulating and technical, composite materials and metals. It has technology for plasma metal cutting, including cutting profiles and technologies for shape cutting of metals, wood, plastic. The company specializes in unit, small series production, however larger series are also possible.

CORE COMPETENCES / BUSINESS AREAS

MACHINING OF METALS - PWR provides a wide range of production for CNC machining of parts made of structural steels, stainless steels, aluminium, brass, bronze. PWR Composite combines the technical possibilities of modern CNC equipment with long-term experience in metalworking.

MACHINING OF ENGINEERING PLASTICS - A wide selection of materials is available and machining offers great design flexibility without the high costs for tools associated with stamping. This is one of the main advantages over plastic injection, where a more or less complicated mold is always required. The dimensions and construction of components can be changed relatively easily without excessive costs.

MACHINING OF INDUSTRIAL LAMINATES - Industrial laminates are not suitable for forming complex shapes, so machining is often the only practical way to produce complex parts from these materials.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Machining of metals

It is possible to achieve very precise dimensions with tolerance to a hundredth by CNC machining (turning, milling). When designing a product, it is always recommended to consult the required tolerances in advance.



Machining of Engineering plastics

Machining tolerance for technical plastic is higher than tolerance for metal parts. This is mainly due to the increased coefficient of thermal expansion for possible deformations caused by internal stresses and other external influences.



Machining of industrial laminates

Production takes place on the basis of documentation supplied by the client, preferably in the form of blueprints and 3D models. PWR Composite communicates potential bottlenecks in terms of manufacturability, usability of materials, requirements of standards, etc.

For additional information and solutions visit the company's website.

CERTIFICATIONS



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DESCRIPTION

Radalytica is the leading provider of robotic imaging solutions for non-destructive testing. Our mission is to deliver top-class, easy to use 2D and 3D robotic imaging system (RIS). We have our own research and development team consisting of top experts in the field and we are also the Universal Robots' OEM. Robotic Imaging System named RadalyX brings a safe, cost-effective and intuitive method, which overcomes the limits of common X-ray inspection. We provide a breakthrough technology into the quality inspection process and create new levels of material safety and development by our unique robotic solutions.

CORE COMPETENCES / BUSINESS AREAS

AEROSPACE – Air transport requires extremely strict safety standards. These also apply to non-destructive testing of the quality of materials used for aircraft production. The quality of these components is crucial not only for the safety of passengers, cabin crew and pilots. Radalyx can detect even the smallest defects in size of tens of micrometers. At the same time, the robotic arms allow inspection of hard-to-reach places and irregular structures from different angles. Our technology also enables the development of advanced materials with a view to alleviating the environmental burden of air transport.

AUTOMOTIVE – The automotive industry is one of the most diverse in the world. It faces many challenges, whether technological advances, electromobility or safety. Radalytica meets these requirements with its state-of-the-art robotic imaging system Radalyx, combining X-ray, ultrasound or computed tomography. It can be used for inspection of welds, casings of engine units, bodywork, petrol tanks, braking systems or anything else that requires special attention.

MEDICAL - The spectral imaging allows recognising material in the samples. This technology allows for example for recognising different tissues in biological samples, pathological changes in small animals within pre-clinical studies or impurities in materials and products.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



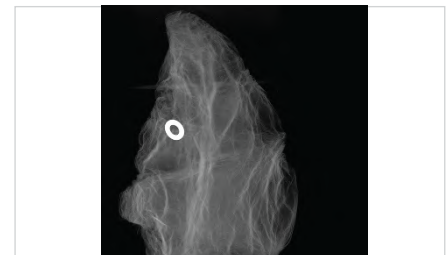
RadalyX

RadalyX is an X-ray imaging system that combines single particle counting X-ray imaging detectors for high quality images with the flexibility of collaborative robots.



Berkhof X-RAD

A new device for automatic X-ray inspection of products directly in the production line. It can be used in many industries, from food, pharmacy, electronics to aviation and the automotive industry for quality or assembly inspection.



ThyroPIX

We are working on new generation camera for thyroid gland and small organs imaging by nuclear medicine methods. The project is part of the 1. Public contest for industrial and experimental development program TREND organized by TAČR.

For additional information and solutions visit the company's website.

CERTIFICATIONS



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rd radalytica®

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DESCRIPTION

UNITES SYSTEMS is a private company located in the Czech Republic with more than 25 years of experience in development and production of dedicated test and measurement systems – ATE solutions for semiconductor devices. Company offer universal component testers for incoming inspections, high speed testers for mass production, worldwide full life-cycle support for ATEs, development and production of test applications, development to meet customers specific demands and contract manufacturing (OEM). Our testers are sold with original operational software. They can be adjusted to customers special needs.

CORE COMPETENCES / BUSINESS AREAS

HIGH VOLUME PRODUCTION

INCOMING INSPECTION

LOW VOLUME PRODUCTION TESTING

DIAGNOSTICS

- **ENGINEERING TESTING**
- **FAILURE ANALYSIS**

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



CMT – Tester

Test system based on VPC G12 interface, where signal conditioning cards are located directly from the rear side of the G12 receiver.



UNIMET 2020

UNIMET 2020 represents a unique and flexible linear and mixed signal test platform for cost effective testing of a wide range of components. UNIMET 2020 is fully compatible with SZ M3000 test system.



DMT – Tester

The DMT Tester is a modular test system that allows rapid measurement of electrical and non-electrical parameters of functional units. The system also allows basic ICT measurement with optional accessories.

For additional information and solutions visit the company's website.

CERTIFICATIONS



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OUR BRANDS





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DESCRIPTION

Additive Italia is a company specialized in simulation driven engineering and generative design focused on Additive Manufacturing for metals. With an avant-garde idea of engineering and proficient embracing of the latest technology, we help the industry to develop a new approach that anticipates and plans the future. A complete suite of advanced software empowered by cloud computing and 3D printing systems made for prototyping and production of metal elements enable optimization, efficiency, high performance and customization.

CORE COMPETENCES / BUSINESS AREAS

A NEW VISION OF INDUSTRY, MANUFACTURING AS YOU NEVER IMAGINED IT - Add-it wants to foster the next industrial revolution mixing advanced computing and engineering with the newest generation of industrial 3D printing technology dedicated to metals. At the heart of the project is the merging of simulation driven engineering with generative design technologies. Thanks to a suite of advanced software Add-it is able to develop more effective and coherent technical solutions aimed to production of lighter and more performing parts, focused on their functions and bypassing techniques and materials limits in traditional manufacturing also for medium and large volumes.

SPECIALISTIC CONSULTING – Thanks to its technological partnerships Add-it offers a complete range of consulting competences for analysis, development, prototyping and industrialization of metal components. Through an ecosystem of digital technologies and high-level engineering skills, Add-it brings to fruition the benefits of simulated driven engineering and “democratize” the Additive Manufacturing revolution in the industrial production scenario.

RESEARCH DEVELOPMENT AND TRAINING - Add-it is a hub for present and future engineering competence in AM, a place for knowledge fostering, sharing and dissemination, a think-tank attracting the most lively and flexible minds in the AM engineering and open to anyone interested in the new challenges coming from the evolution of metal manufacturing and its most advanced applications. Thanks to the solid co-operation with many university engineering departments Add-it is where knowledge coming from research and frontier experimentation, science, applied research, technology and manufacturing industry is constantly cultivated and made available to each contributor.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Studio System+ by Desktop Metal

Metal FDM printing technology based on metal sintering, dedicated for prototyping and R&D activities. Useful solution to validate geometries and small production batches in the product development phase, in anticipation of the adoption of Metal Binder Jetting mass production systems.



Metal Binder Jetting

Forthcoming adoption of Metal Binder Jetting systems, 3D printing systems based on the creation of parts through the selective deposition of a polymeric binder on a bed of metal powder and subsequent sintering. Actually not in house.



Sapphire by VELO3D

Possible collaboration with VELO3D, a manufacturer of printers with latest generation laser melting system. VELO3D differs from classic powder bed laser technologies thanks to its unique ability to print geometries with angles up to zero degrees. Actually not in house.

For additional information and solutions visit the company's website.



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Add+it

Additive Italia srl

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DESCRIPTION

GFM is a solid industrial company with 40 years of experience and specialization in the design, prototyping, production, machining and assembly of precision mechanical components in all types of steel, alloy and special super alloy.

The use of the latest technologies and machinery, as well as a highly qualified and specialized team, has enabled GFM to consolidate its identity and strengthen the loyalty of important customers worldwide, mainly in power generation and aerospace sectors.

More recently, GFM has created a technological unit (ATC) within the production area for the development of knowledge and specific technical skills on Additive Manufacturing technologies, with the aim of supporting customers during feasibility studies and process validation, experimental development of prototypes and pre-competitive analysis of components.

CORE COMPETENCES / BUSINESS AREAS

GFM is an international leader in the production of mechanical components for gas turbines, steam turbines and energy generators, according to customer design and specifications. Thanks to EN9100 certification, continuous investments and consolidated experience, GFM is able to provide precision machining services and to manage the entire supply chain for **aerospace applications**.

ENGINEERING - Design and industrialization of precision mechanical components and complex assemblies. We use 3D modelling software such as Catia and Siemens NX, and CAD-CAM software integrated in a single platform to simplify the transition from the model to the production of the components, passing through the programming of CNC machines.

PRODUCTION AND MACHINING - Prototyping, production and assembly of precision mechanical components. A large in-house fleet of machinery and collaboration with companies qualified and specialized in the different types of machining processes allow GFM to have an extensive production capacity, both in terms of complexity and size.

LASER TECHNOLOGIES - We are able to perform some operations on sheets up to 10 mm with laser technology. We are also able to weld different materials with thicknesses up to 4-5mm.

ADDITIVE MANUFACTURING - GFM has developed knowledge of various additive technologies in the field of metals, both direct energy deposition (DED) and selective laser melting (SLM). These technologies and their combination with traditional processes allows GFM to offer freedom in the development and engineering of materials and processes, reducing lead times and therefore also costs.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Lasertec SLM 30

ATC has 2 SLM machines, particularly suitable for complex components that place the emphasis on weight reduction, functional optimization and customization. Superlattice structures can be produced in various materials, such as stainless steel, titanium, aluminum and tool steel.



Metallographic Laboratory

GFM has expanded its quality control department with instruments to perform destructive tests on specimens and micrographic analysis on additive products.



Lasertec65 3D Hybrid

In addition to the deposition of powder on machined pieces, this machine allows the reworking of the pieces to obtain the geometric tolerances and surface finishes typical of a machined piece. It operates with 5 axes continuously allowing the creation of complex pieces, but with production speeds up to 10 times higher than those of the SLM.

For additional information and solutions visit the company's website.

CERTIFICATIONS



Compliance to
ISO 9001:2015
standards



Compliance to
ISO 9100:2016
standards



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DESCRIPTION

A Private consortium of companies, founded in Bergamo in 2007, aimed at interdisciplinary research in the field of mechatronics for applications in different industrial sectors. Intellimech represents, due to its size, one of the most important private Italian initiatives in the sector, counting on the participation of an important number of companies of various sizes coming from different industrial sectors and operating in a wide territorial area covering the whole of Italy.

CORE COMPETENCES / BUSINESS AREAS

Technological scouting: The first phases of the operational approach of Intellimech are aimed at a technological scouting on the issues considered of greatest importance for companies. Technological scouting aims to lead to the definition of pre-competitive projects tailored to the needs of members. The meetings with companies represent a fundamental step for the choice of shared projects as they allow to concretize the technological areas in specific industrial needs. Intellimech has a strong vocation for organizational problem solving as a whole.

R&D: Intellimech realizes prototypes of mechatronic devices for innovative infra-sector applications of interest to the Consortium members. Participates in regional, national and European calls for proposals in the field of mechatronics involving consortium members as pilot cases.

System Integration: The increased competitiveness of the market forces companies to provide products and services with increasingly higher quality standards at lower costs. As a consequence, the company innovation focuses on the development of integrated systems that allow to increase the overall efficiency and improve the quality intended as customer satisfaction. Intellimech deals with the development of integrated systems, developing custom solutions according to the individual application.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS

What we do



Applied research and development specializing in **mechatronics**.

Our Services

<p>Shared Projects</p> <p>Joint R&D projects related to mechatronics for latest technology methods with results shared amongst the member companies.</p>	<p>Grants</p> <p>Get access research grants and subsidies from the European Union. Participation in national and European activities related to mechatronics, with the involvement of members as pilot cases.</p>	<p>Custom Consulting</p> <p>We provide custom consulting solutions in mechatronics for all companies, not our members only. Take advantage of our decades of knowledge and experience working with manufacturing problems.</p>
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For additional information and solutions visit the company's website.

CERTIFICATIONS



Compliance to ISO 9001:2015 standards



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INTELLIMECH®
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DESCRIPTION

Lab3D Engineering is a growing company, with a variety of 3D printer models and materials to meet every customer need. The company is divided into 3 sectors, the design of elements on customer directives, prototyping to have a concrete idea of the piece and mechanical processing to make the structural pieces. Our **MUST HAVE** are the quality, the timing of implementation and the low costs of the products required.

CORE COMPETENCES / BUSINESS AREAS

DESIGN OF THE MODEL – We design with our customer about their project, give some advice about the material to use and choose the right machinery process.

PROTOTYPING OF MEDICAL DEVICES – Prototyping medical device is very complex because you **MUST** use the right material for the health. We use **MEDICAL ABS** to create our prototype. We have another materials for medical device call **Healthfil**. One of this materials is **Fortis**, ideal for busts, corrective corset and upperleg tutors.

JEWELRY – We made jewelry with our 3D printer. The resins are totally castable and in the burn out cycle we don't have any residue. We made jewelry in gold, silver, bronze, brass and platinum.

AUTOMOTIVE AND AEROSPACE – We work with automotive and aerospace company, the main parts are printed by LCD/SLA technology. Very small pieces, strong and high quality.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Zortrax M200 Plus

Area : 200*200*180

Single extruder

Material: Pla,Abs,Petg and Flex material

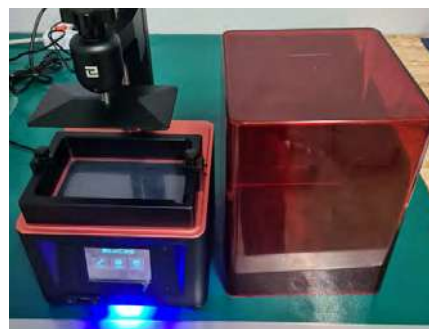


Zortrax M300 Plus

Area : 300*300*300

Single extruder

Material: Pla,Abs,Petg and Flex



Creator By BlueCast

LCD Technology

Area 67*120*150

Material: Strong resin, Flex, Castable resin

For additional information and solutions visit the company's website.



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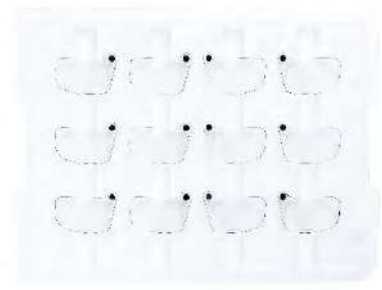
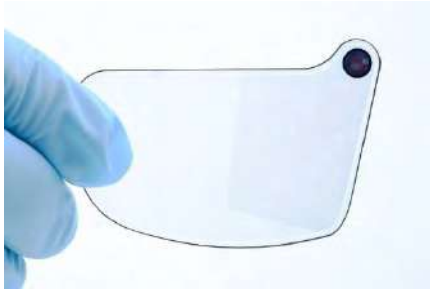
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DESCRIPTION

DISPELIX Oy is an internationally recognized company, specialized in augmented reality display modules and waveguides, with our own self-developed unique methods of making the best see-through displays available on the market. We were recently listed among the most promising startups in the world by Bloomberg, being the only company from Finland on the list. Dispelix Oy was founded 2015 and is a fast-growing company with 60 employees. We have four locations now including offices in Joensuu, Oulu, the Head Quarters in Espoo and Dispelix USA Inc. in the United States.

CORE COMPETENCES / BUSINESS AREAS

MISSION – Dispelix is focused on design, development and manufacturing of the highest performance waveguide displays that meet the strictest demands. Together with our partners, we solve the most complex problems enabling our customers to create AR solutions that change our view of how we experience the world.

TARGET MARKETS – Any technology company who requires AR displays for consumer or enterprise use. Dispelix focuses on OEM, ODM, and Platform Owner customers.

STATEMENT OF NEED – To reach consumer and enterprise customers, AR devices need to be small, light, and deliver the highest quality experiences. Dispelix has solved these AR display challenges and has developed an ecosystem of partners to allow our customers to build AR devices specifically designed on the market needs.

INTEGRATED SOLUTIONS – Dispelix is the world's premier waveguide display OEM offering the highest quality displays and know-how along with complete solutions partners who represent the entire supply chain and AR ecosystem, including: waveguide manufacturing, projection technologies, product reference designs, electronics, content creation platforms, and more.

For information, please visit www.dispelix.com

SOLUTIONS



Waveguides for LED Projectors

The DPX 30-50° waveguide design for LED-based projectors delivers bright and sharp AR imagery with a supreme color balance. The DPX 30-50° waveguide design is compatible with DLP, LCoS and microLED projectors, delivering multiple field of views and extremely high image quality for enterprise and other professional use cases.



Waveguides for Laser Projectors

The DPX30° LBS waveguide design for laser beam scanning is the thinnest and lightest full-color waveguide display in the AR wearables industry. It is fully integrated with RGB LBS projectors from our technology partners, delivering the performance required for all-day-wearable AR glasses without sacrificing product design.



Custom Waveguide Development

Dispelix designs, develops and licenses custom waveguide display technology to its strategic customers. Dispelix offers its strategic customer the most advanced design, simulation, optimization, and manufacturing for the highest performing diffractive waveguide in the AR wearables industry.

DISPELIX ON SOCIAL MEDIA





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dispelix

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DESCRIPTION

Hypermemo Oy is developing industrial gas laser technologies for brittle materials processing. We started in 2014, and have built a sophisticated R&D facility and a fantastic team. At the end of 2015, our development activities were supported by Finnish Public Funding Body TEKES (currently "Business Finland"). The joint government/private funding helped us develop a breakthrough high-frequency short-pulsed CO₂ laser, and to demonstrate flat and Gorilla glass laser cutting without the need for postprocessing. In 2018 the company has received a Horizon2020 SME Instrument grant and in 2020 EIC Accelerator funding. The company is currently targeting smart/coated, architectural, automotive, and laminated glass processing sectors with its GLAZER technology and GLAZER-based industrial solutions.

CORE COMPETENCES / BUSINESS AREAS

We finally bring 21st-century tech to glass processing. GLAZER is based on our unique patented laser, matched with our automation technology for 3D glass machining, ready for the Industry 4.0.

The major product idea behind GLAZER: a multi-purpose CNC technology for many glass types and processing operations. Digitally reconfigurable to adopt new processes and materials. New process => new software update => agile manufacturing 3 times less equipment footprint, 90% less consumables, 80% less waste.

Hypermemo is the world's pioneer in short-pulsed Q-switched high-power CO₂ lasers, which actually work.

Existing gas lasers can't work in short-pulse Q-switched modes. The reason is the high energy absorption in electro- and acousto-optical modulators, which makes them overheat and collapse in lasers with more than 10W of average power output. We have solved this issue and developed the GLAZER technology, which is backed by 10+ years of scientific research and equipment development. GLAZER provides around 15 times excess of the peak power over the average power, with a pulse frequency of 10-60 kHz and a pulse duration of 200-400 ns. This allows converting the CO₂ laser into a highly versatile tool for brittle materials processing.

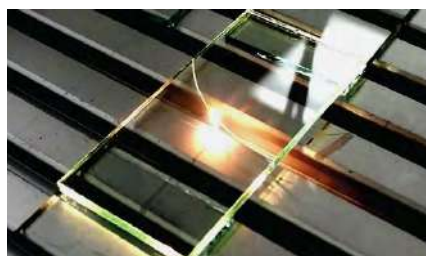
For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



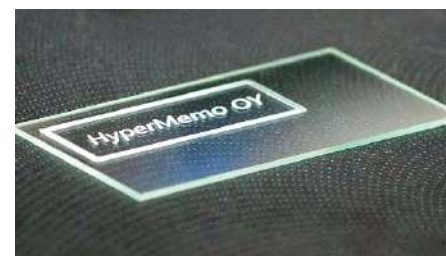
Architectural glass processing

A piece of flat construction glass (including laminated glass) is cut, chamfered and drilled on the same table, then offloaded directly to the finished goods storage.



Automotive glass processing

GLAZER highly versatile laser tool can change the way auto glass parts are manufactured: curved cuts, chamfering and marking are made at one table. Which means dramatic reduction of equipment footprint, maintenance costs and pollution. An average-size auto mirror can be fully processed in less than 10 seconds with up to 300 mm per sec cutting speed. The contactless laser tool generates no chips, no deformation and no fluttering, which means higher quality and durability of the glass part.



Smart glass processing

Smart windows are the key to decreasing energy losses in buildings. This is achieved by controlling light transmission in the range from 0 up to 98% by smart glass coatings. However, the current glass cutting technology destroys these soft and thin smart coatings, leading to processing rejects levels of up to 80%. This makes the price of smart glass 2-6 times higher than that of ordinary glass, thereby hampering its entrance into the market. The GLAZER technology allows processing smart glass in a contactless, precise and clean way. We have increased production capacity by 3 times compared to traditional methods and have brought rejects level almost to zero.

For additional information and solutions visit the company's website.



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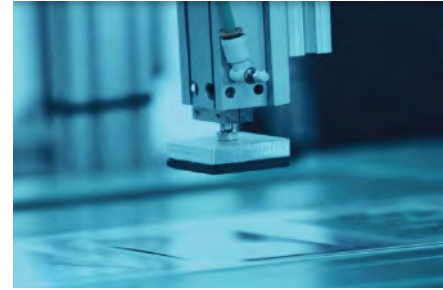
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DESCRIPTION

Nanocomp is a global forerunner in micro- and nanophotonics design and manufacturing. Nanocomp focuses on the manufacturing of micro- and nanophotonics products for consumer electronics, laser sensing and special lighting sectors. The production is based on roll to roll process, which is the most cost and time efficient means for mass production of film optics. Nanocomp is offering film optics solutions with micro- and nanostructured surfaces. Nanocomp has been focusing lightguides development for consumer electronics, which have highest performing, ultra-thin and flexible lightguides (enabled by R2R and special microstructures).

CORE COMPETENCES / BUSINESS AREAS

DESIGN - We at Nanocomp offer micro- and nanophotonics design expertise with more than 20 years of experience in diffractive and refractive optics. We stand out from the competition by exceling in design for manufacturing (DFM) and by providing flexible design and simulation support.

TOOLING - Modern manufacturing technologies with electron beam lithography, direct laser beam lithography as well as diamond turning enable highly accurate tooling of nano- and microstructures. Nickel electroforming enables cost effective copy tools for mass production, while preserving nanoscale accuracy.

PRODUCTION – UV roll-to-roll imprinting is the cutting edge mass manufacturing technology for micro- and nanostructures, offering cost efficiency and nanometer accuracy. In the roll to roll process the patterning of nano and -microstructures is printed on a UV curable lacquer on the substrate film.

MATERIALS - Nanocomp uses commercial thin plastic foils together with in-house developed UV-curable lacquers. This enables production of unique products for optical applications by UV-R2R embossing technology. Material performance in varying enviromental and weather conditions is ensured by extensive testing.

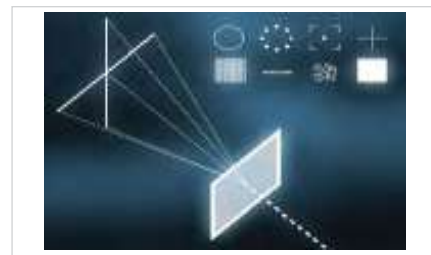
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SOLUTIONS



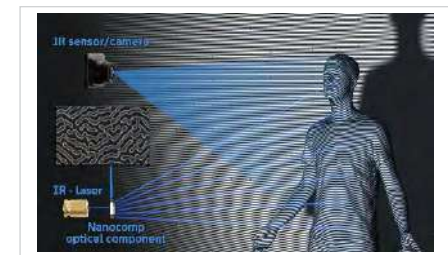
Display illumination

Nanocomp designs and manufactures frontlight and backlight guides for illuminating non-emissive displays. Nanocomp light guide film is a perfect pair for thin and flexible displays or for any non-emissive display.



Laser measuring and sensing

Advanced features based on micro and nano photonics enables use for measuring applications that require high accuracy and functionality e.g. ambient light or motion detection sensors, self-leveling laser line systems, industrial optical sensing and other optical sensors.



3D sensing

Film components are thinner and lighter in weight as well as lower in cost when compared to traditional glass components. Additionally by choice of material and its properties, components can be flexible or rigid. Customized solutions can be done accompanied with extensive simulations, providing great results on complex challenges.

For additional information and solutions visit the company's website.

CERTIFICATIONS



ISO 9001:2015



ISO 14001:2015



ISO 14001:2018



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NANOCOMP

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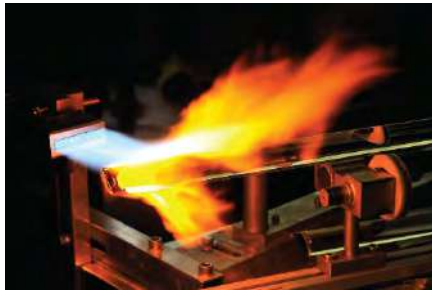
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DESCRIPTION

Oplatek is the leading North-European photonics solution provider with over 35 years of experience. We provide optics, fiber optics and optomechanics design and manufacturing services for our customers. We have a unique combination of optics manufacturing technologies in-house. Our biggest customer segments are manufacturers of medical devices and analyzers, testing and quality control devices for processes, high power lasers, optical cables and other optical instruments.

CORE COMPETENCES / BUSINESS AREAS

OPTICS MANUFACTURING – We draw silica fibers in two fiber drawing towers and manufacture thin film coatings, both metallic and dielectric in three coating chambers. We manufacture molded glass optics also in high volumes. We produce all the metal parts in our CNC workshop. We use all these capabilities and machinery for manufacturing of optical assemblies or even devices for our customers.

OPTICS DESIGN – Our in-house design expertise is versatile. We design optics with Zemax and Comsol softwares. For thin film coating design and simulation we use Essential McLeod software, and for optomechanics Inventor platform. By putting together all the mentioned design expertise we can support our customers in their R&D of optical devices.

SOLUTIONS – By putting together our optics design and manufacturing expertise we are able to assist our customers and create innovative photonics solutions.

CO-OPERATION PARTNERS – We have versatile machinery and expertise in-house but at the same time we have extensive supplier network who support us. We are also continuously collaborating with universities and research institutes and want to support the development of the field of photonics. We are active members of both domestic and international photonics organizations.

For full information on the complete set of core competences and business areas visit the company's website.

SOLUTIONS



Light Delivery and Sensing

For sensor manufacturers, optical fibers essentially fulfill two main functions: on the one hand, they transport the light to and from the measuring point („light supply“). On the other hand, optical fibers can also be used directly as the sensing element within the sensor („fiber sensors“).

High Power Laser Components

Material processing industry (welding, drilling, cutting, marking...) is driving an increasing demand for fiber lasers. Oplatek can serve any laser technology with high power laser components that help laser manufacturers and system integrators to customize their solutions to the specific industrial application.

Lighting Applications

Oplatek manufactures non-imaging optical elements in different materials: glass, metal, and plastic including optical coatings. The complexity of the component shape can thereby vary in a project, from e.g. a simple optical window up to demanding free-form mirrors.

For additional information and solutions visit the company's website.

CERTIFICATIONS



ISO 9001
ISO 14001

OUR BRANDS





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Manufacturing Innovative Photonics Solutions!

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