



# German Business Delegation Singapore - Electronics & Photonics

Singapore – 20th to 24th September 2021

*Company Products and Services Catalogue*

*In collaboration with*



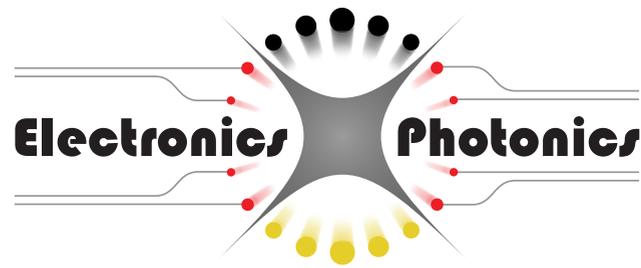
Singaporean-German Chamber  
of Industry and Commerce  
Deutsch-Singapurische  
Industrie- und Handelskammer

*Project of*



# German Business Delegation Singapore

20<sup>th</sup>-24<sup>th</sup> September 2021



## German Companies

- Beetz & Partner mbB .....
- blue automation GmbH .....
- BRANDPROTEC .....
- CDA GmbH .....
- Gigahertz Optik GmbH .....
- Heidelberg Instruments Mikrotechnik GmbH .....
- Innolite GmbH .....
- Instrument Systems GmbH .....
- Phaseform GmbH .....
- TOPTICA Photonics AG .....

The virtual German Business Delegation to Singapore is a funding project of the Federal Ministry for Economic Affairs and Energy (BMWi) with 10 selected German companies and suppliers in the field of Electronics and Photonics components and solutions. The project is carried out by SBS systems for business solutions in cooperation with the SGC Singaporean-German Chamber of Industry and Commerce.

We are pleased to invite you to our upcoming online events on innovative solutions in the fields of Electronics and Photonics and an inspiring exchange between outstanding German and Singaporean players of this sector.

Come and join us online on **Tuesday and Wednesday, 21st and 22nd September 2021, 3.30pm-5.30pm SGT** to discover exciting brands and products by outstanding German companies.

The digital pitch presentation event is taking place in the framework of the five-day virtual **German Business Delegation to Singapore from September 20th to 24th, 2021**, under the auspices of the German Ministry for Economic Affairs and Technology and with the purpose of an inspiring business dialogues and B2B meetings between small and medium-sized German companies and the excellence of the Singaporean Electronic, Photonic and Laser Industry.

This is a great opportunity for Singaporean companies and institutions to explore new business and collaboration opportunities and to discover potential synergies with the German participants. We cordially invite you to join the presentation event and to contact us for the scheduling of individual meetings.

Please find on the following pages a short company profile with further information of each of the German participating companies and their business interest with Israeli partners.



Singaporean-German Chamber  
of Industry and Commerce  
Deutsch-Singapurische  
Industrie- und Handelskammer



SBS

systems for business solutions

## Singaporean-German Chamber of Industry and Commerce

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## SBS systems for business solutions GmbH

Photonics and electronics are important technology sectors in Singapore with a considerable leverage effect on other industries as well. Technologies, products, components and system solutions from photonics and electronics are used in many industries along the value-added chains and enable users and manufacturers to increase their competitiveness through more efficient and sustainable production methods, better and faster process flows and by opening up new fields of application.

Singapore's economy is characterised by a holistic and advanced manufacturing ecosystem with a considerable international presence, where companies not only base their production facilities, but their headquarters, R&D and management functions that serve the Southeast Asian region. Many of them are active in the field of precision engineering, semi-conductor fabrication, optics, and even consumer electronics and automation. In 2020, Singapore's manufacturing sector contributed 21.5 percent to the city-state's gross domestic product. In fact, Singapore is the world's 4th largest exporter of high-tech goods. Thus, Singapore as an advanced manufacturing and industrial location offers an agglomeration of competence and know-how.

This 5-day virtual programme to Singapore is intended to foster innovation cooperation, trade and development between Singaporean and German companies/institutes in the industry. As part of the delegation, 10 companies with business operations in Germany are seeking to enter Singapore and collaborate with Singaporean companies and institutions.

The German delegation is organised by the Singaporean-German Chamber of Industry and Commerce (SGC) and SBS Systems for Business Solutions, on behalf of the German Federal Ministry for Economic Affairs and Energy (BMWi). The programme of the virtual delegation trip consists of business meetings and a 2-day hybrid presentation pitch event. Participating companies have the opportunity to present their products and services to an expert audience and to hold individual B2B meetings with potential business partners in Singapore.

We would like to thank our partners for their immense support throughout the project: The Association of Electronic Industries in Singapore (AEIS), LUX Photonics Consortium, Optics and Photonics Society of Singapore (OPSS), The Singapore Industrial Automation Association (SIAA), OptoNet e.V., OpTecBB of OptecNet Deutschland e.V. and SPECTARIS.

**SPECTARIS – German**

Industry Association for  
Optics, Photonics,  
Analytical and Medical  
Technology e.V.

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Berlin | Germany

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**Welcome for the digital GAB delegation to Singapore in Electronics and Photonics**

Singapore is a highly developed market with an increasing demand for photonics and optical components. It ranked amongst the TOP 20 export markets for German photonics with product exports worth 423 Mio. Euros in 2019. In the last years, the technological use of light became a key driver of digital transformation. In our more and more digitalized world, photonics offers highly effective solutions for sensors and data transport. Deep tech applications such as artificial intelligence, big data, additive manufacturing, robotics, the Internet of Things (IoT), and autonomous driving will require faster, more reliable, more energy efficient and more powerful photonics and semiconductor components, which makes it a key enabling technology for the digital transformation. We hope that the participants will have an ideal platform to dive into the trends and new applications of photonics which are relevant for the demand in Singapore. We wish all participants fruitful talks and interesting meetings.

SPECTARIS pools the interests of more than 400 member companies from Germany and is the German industry association for the high-tech medium-sized business sector and representative body in the areas of medical technology, optical technologies and analytical, biological, laboratory, and ophthalmic devices. Innovation and growth characterize the different industry sectors and their 235,000 strong workforce. Technologies developed here are used in almost all branches of industry, making them an important motor for the German economy.

**Photonics and Precision Technology Association**

The trade association Photonics and Precision Technology represents companies from the sector for lasers, optical components, imaging & photo technology, geodesy, microscopy, measurement instrumentation and sensor technology. The trade association Photonics and Precision Technology represents approximately 110 manufacturers in the optical technology sector.

**Foreign Trade and export promotion**

SPECTARIS is involved in numerous industry specific project activities for the support of German companies abroad, all focused on one single objective: initiation and expansion of contacts with industry associations as well as industrial enterprises in other countries. SPECTARIS is also very active in organising trade fair participation worldwide, in the removal of non-tariff barriers and providing market data and market information to its members.

**OptoNet e.V.**

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**Anke Mank**

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Dear participants of the Singapore delegation,

challenging times require enthusiastic people to enhance cooperation even more.

In this sense I'm happy to welcome so many of our photonics partners from Singapore and Germany for this delegation trip bringing together two international leading photonics regions.

On behalf of OptoNet, the Photonics Network of Thuringia, with more than 100 members from optics industry and science, I'd like to welcome all of you for a successful exchange and many valuable insights to strengthen the collaboration with all of our great Asian partners.

In May 2021 OptoNet had the honor to sign a Memorandum of Understanding with our appreciated partners from LUX photonics industry consortium in Singapore. With presentations and more than 20 bilateral B2B talks we started bringing together many innovative photonics players in a joint event.

The LUX photonics industry consortium comprises leading Singaporean universities and photonics organizations and companies in various fields of highly innovative photonics technology. This delegation trip gives all of you and our partners the chance to get deeper insights and find cooperation partners and topics for you.

Many thanks to the Federal Ministry of Economic Affairs and Energy, the Singaporean-German Chamber of Commerce, SBS Business Solutions and all Singapore organizations for their interest and hospitality.

Have a great time,

Yours sincerely

Anke Mank, Manager International Affairs

OptoNet e.V.

Beetz & Partner

Experts in patent  
and trademark law

**Summary**

The one-stop shop for European, German  
and French patents, trademarks and designs.



  
made  
in Germany

[www.beetz.com](http://www.beetz.com)

## Company profile

BEETZ is an internationally oriented patent law firm based in Munich, which has been working for a wide range of clients from various industries, especially in Asia, for almost 100 years. BEETZ assists with all specific challenges in the field of intellectual property. We develop a tailor-made approach for each company, at both the attorney and administrative levels. Each client has its own personal profile.

We work for you in Europe. We speak English, French and Spanish fluently and cooperate with all European offices or have networks of renowned correspondent attorneys. This enables us to meet the special requirements of internationally oriented clients.

Transparency is important to us: we maintain a lively exchange of information with our clients. As we are fully digitalised and connected online with most offices in Europe, we are able to forward official notices from all European offices to our clients in the shortest possible time.

Due to our many years of experience in the industry, we have established particularly effective structures. We rely on efficient, fully digital workflows and the greatest possible flexibility. Via a specially protected internet connection, you can access data and documents of all your files kept with us at any time, place orders directly via your account and much more.

We advise on all contractual issues, in particular licensing issues, in the field of intellectual property. The monitoring and administration of patents and patent applications up to all the tasks of an independent patent department are also part of our services.

A further field of activity of our firm concerns the filing of trademark and design applications as well as representation in registration and opposition proceedings.

## Products / Services

Patent and utility model law  
Patent infringement  
Product piracy  
Patent evaluation  
Trademark law  
Domain law

## References and export activities

We are obliged by national professional code of conduct not to name our clients without their explicit consent. Our firm has been serving clients from East Asia for several decades.

## Target group

Patent applicants who are active or would like to become active on the European market and would like to secure their intellectual property in Europe for this purpose.

## Competitive advantages

The fully digitalised file management allows for the shortest response times and spontaneous case discussions by telephone whenever necessary. On request, we can set up online access to a client's files held with us, eliminating the need for the client to maintain its own files.

## Purpose of participation in the project

Contact to technology owners with business interests in Europe.

# Beetz & Partner

## Beetz & Partner mbB

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Languages: English, German, French, Spanish

Project:

**Business Development**  
Delegation  
**Singapore**  
20<sup>th</sup>-24<sup>th</sup>  
September **2021**



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## Summary

- E-Plan certified and international specialist for automation technology
- Diverse field of competences and numerous experiences in the following areas: Electrical Construction, PLC and Robot-Programming, Virtual Commissioning, Building Automation
- National and international (Germany, India, USA, China)



made  
in Germany

## Company profile

The blue automation GmbH is an E-Plan Certified Company "(ECC) and an international specialist for automation technology. We work in the areas of automotive including suppliers, pharmaceutical and medical technology as well as in the field of food and beverages. Our field of competences extend over electrical construction, robotics & PLC programming, virtual commissioning as well as building automation.

In addition to our headquarters in Germany we have branches in China, India and the USA. Our team, consists of experienced specialists for automation and control technology and is characterized by openness and flat hierarchies.

## Products / Services

Hardware Construction  
PLC Programming  
Robot Programming  
Virtual Commissioning  
Building Automation

## References and export activities

BMW Group Werk Dingolfingen  
Audi AG, Ingolstadt  
Porsche AG, Zuffenhausen  
Teamtechnik Maschinen und Anlagen GmbH  
Hahn Automation GmbH  
Assembly & Test – Europe GmbH  
Harro Höflinger Verpackungsmaschinen GmbH  
Schmid Maschinenbau Engineering GmbH  
Deutsche Lufthansa AG

## Target group

Sectors of automation technology as well as mechanical and industrial engineering.

## Competitive advantages

Through our assignments in a wide variety of industries, we have already gained experiences with different machines, systems and special machines. We offer hardware construction, PLC programming, robot programming, virtual commissioning and building automation from a single source.

## Purpose of participation in the project

Our company, blue automation GmbH, wants to enter new markets and win new customers not only in Germany but on an international basis. Our goal is to qualify as an international business and to expand our professional knowledge.



### blue automation GmbH

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Languages: German, English

Project:



Supported by:



Project of:





BRANDPROTEC™

TRADEMARK CHECK

TRADEMARK REGISTRATION

TRADEMARK MONITORING

TRADEMARK EXTENSION

# Protect your brand

The comprehensive  
online tool for worldwide  
trademark protection



## Summary

A web platform that covers all central aspects  
of global trademark management – at your  
fingertips, at a fixed price.



made  
in Germany

[www.brandprotec.com](http://www.brandprotec.com)

## Company profile

Brandprotec is an innovative web platform that provides easy access to trademark protection all over the world through a global network of renowned IP law firms.

A free online check on potential conflicts with existing word marks is offered for a continuously expanding number of countries. A similarity search by experts on the spot is also possible, but can thus be limited to cases that look promising in the online check.

The total costs of different filing strategies are calculated online and in real time, depending on the countries and classes selected; multinational filing systems such as IR and EU trade marks are automatically taken into account and are also offered, if expedient. The applicant can thus adjust his country selection on the basis of the displayed costs and achieve an optimal ratio of geographical extension of trademark protection to costs. Subsequently, registration orders can be placed worldwide at the touch of a button.

Renewal and internationalization of existing trademarks can also be initiated easily and quickly.

For a steadily expanding number of countries, continuous trademark watch can be set up via search agents. In addition, we offer comprehensive trademark watch all over the world, including legal advice, at a fixed price.

It is our commitment to optimally protect the intangible asset value of a trademark worldwide.

## Products / Services

- Organization and supervision of trademark applications worldwide
- Trademark search (identity and similarity search)
- Immediate cost calculation of various application strategies
- Trademark renewal
- Trademark watch

## Target group

- Companies that distribute or want to distribute their products worldwide
- Law firms looking for an efficient partner for international trademark protection

## Competitive advantages

The only trademark platform on the net that bundles all central aspects of trademark management and is able to automatically offer a cost-optimized filing strategy, taking into account multinational agreements.

## Purpose of participation in the project

- Presentation of the innovative platform
- International exchange
- Discussions with potential clients
- Exchange about possibilities of cooperation with law firms



### BRANDPROTEC

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Languages: English, German, French, Spanish

Project:

**Business Development**  
Delegation  
**Singapore**  
20<sup>th</sup>-24<sup>th</sup>  
September **2021**



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# CDA

We inspire and manufacture value



## Summary

Micofunctional Solutions (Consumer Electronics, Automotive and Industrial Automation),  
Flash Memory (NAND memory media for well-known automobile manufacturers),  
Impressing Solutions (CD, DVD, Blu-ray),  
3D printing

 made in Germany



[www.cda.de](http://www.cda.de)

## Company profile

CDA's roots are in the manufacturing of optical data media, such as CDs, DVDs and Blu-Ray discs. We still manufacture these products in our ImPressing Solutions division. Since 2005 we have succeeded in developing our know-how in such a way that we have been able to open up further business areas. Today, these include Flash Memory Solutions, where we flash NAND memory media for well-known automobile manufacturers. The second strongly growing area, Microfunctional Solutions, deals with the design and production of plastic micro-optics. With these products we serve the automotive industry but also consumer electronics and automation technology. In our newest business area, 3D printing, we manufacture prototypes and small series for a wide variety of applications.

## Products / Services

Products:

- diffractive optical elements
- dot and line generators
- diffractive Diffusers refractive Diffusers
- diffractive Lenses, refractive Lenses
- MLA
- Diffusers for Head-up-Displays
- Holographic Optical Elements
- Lighting Modules
- Portable storage / External Memory
- Fixed storage/ Internal Memory
- Embedded storage

Flash Memory services: Programming, customization, quality control, rework, one-stop-shop production, complaint management, laser marking, labeling, other types of packaging solutions.

Micro-optics services: Optic design, prototyping, serial manufacturing.

## References and export activities

CDA is active worldwide and supplies well-known international manufacturers in the consumer electronics, automotive and industrial automation sectors.

In the automotive sector, we are an OEM, Tier 1 and Tier 2 supplier.

We also have a joint venture in Shanghai, China.

## Target group

Our target group is primarily companies from the consumer electronics, automotive and industrial automation sectors.

We are looking for contact with large companies, medium-sized companies and start-up companies in the areas of 3D Sensing, AR, VR and Projection.

## Competitive advantages

From small quantity manufacturing to mass production. CDA offers the complete portfolio from optic design to prototyping and serial production.

Working with various polymers allow us to offer cost effective, high quality products and guarantee our clients a short time to market.

## Purpose of participation in the project

Our goal is to find and win new customers.

**CDA**  
We inspire and manufacture value

### CDA GmbH

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Languages: German, English

Project:

**German Business**  
Delegation  
Singapore  
20<sup>th</sup>-24<sup>th</sup>  
September 2021

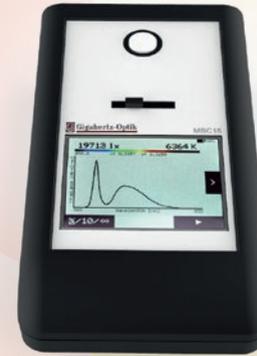
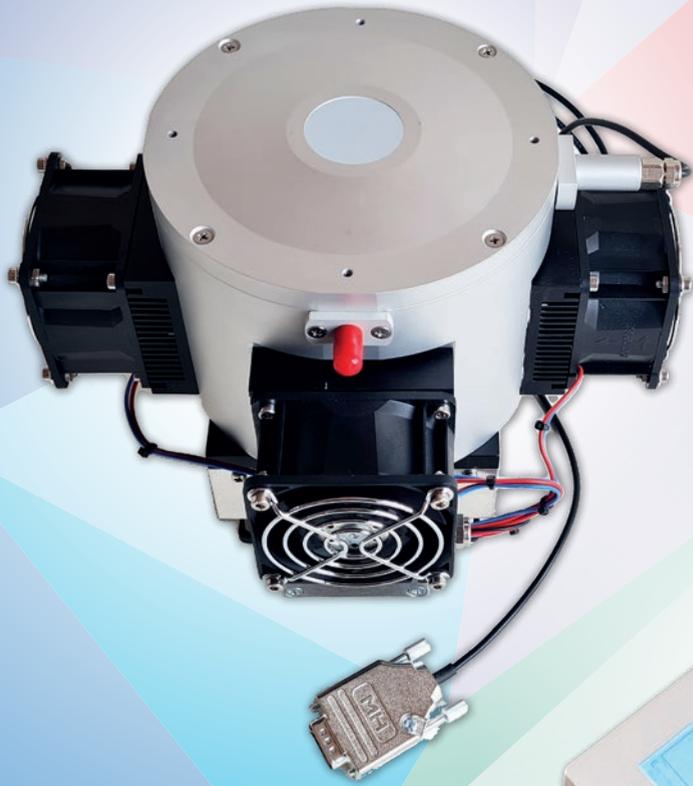


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## Summary

Manufacturer of Optical Measurement  
Equipment in UV/VIS/IR  
Detectors and Light Sources  
State of the Art Technology enables Absolute  
& Traceable Measurement



  
made  
in Germany

## Company profile

Manufacturer of optical measurement equipment

Gigahertz Optik GmbH is a globally positioned company which manufactures and offers solutions in the measurement of optical radiation in the UV/VIS/IR range.

The product portfolio includes easy-to-use spectroradiometers, broadband measurement systems, integrating sphere systems, high-end spectroradiometers, automated measurement systems and individual customer solutions. Besides hardware also software and services are offered, developed and produced in Germany. Services are provided by our measurement laboratory, which extends over 300 square meters with highly educated staff. Our customers use our products either in research, quality assurance, production control or directly in the final application.

## Products / Services

- Broadband Detectors (UV, VIS, IR)
- Spectroradiometers (UV, VIS, IR)
- Handheld Light Meters
- Spectrophotometers & Analysis Laboratory Systems
- Transmission, Reflection, Absorption Measurement
- Integrating Spheres
- Calibration Light Sources
- Uniform Light Sources
- Measurement Services / Calibration (ISO 17025)
- Customized Products & Services

## References and export activities

Export is more than 70% of our business. We are offering high level technical support to our business partners abroad.

## Target group

SEMICONDUCTOR INDUSTRY:

Chip Level Testing, UV Hardening Control in Lithography Process and PCB Manufacturing

LASER & LED MANUFACTURER:

Production Control (Optical Power and Spectral Information)

VERTICAL FARMING:

LED Measurement in Greenhouses

## Competitive advantages

- High level of customization
- Broad product portfolio in UV-VIS-IR range
- Expertise in optical measurement (> 30 years)
- Accredited calibration laboratory (ISO 17025)
- Solution oriented thinking

## Purpose of participation in the project

- Finding Customers
- Establishing business relationship with companies who are specialist in certain market segments / target groups (e.g. distributor, light source manufacturer, etc.)
- Learning more about the business in Singapore and cultural particularities



## Gigahertz Optik GmbH

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Languages: German, English

Project:

**Business Development**  
Delegation  
**Singapore**  
20<sup>th</sup>-24<sup>th</sup>  
September 2021



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## MLA300

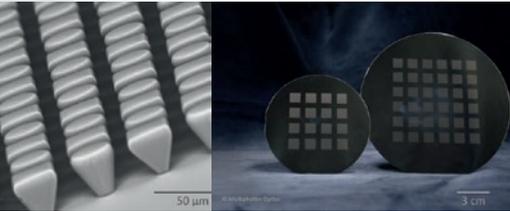
The Maskless Aligner for Volume Production

## ULTRA

The Semiconductor Laser Mask Writer

## NanoFrazor Explore

Revolutionizing Nanofabrication

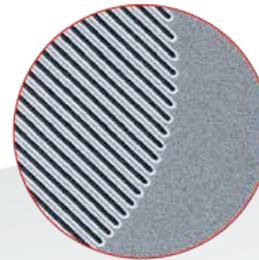
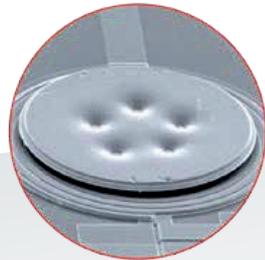


## LithoProf3D®

### Summary

Design, development and manufacture of high-precision maskless laser lithography systems for nano- and microfabrication.

made in Germany



## Company profile

Heidelberg Instruments is one of the leading international players in the design, development and manufacture of high-precision maskless photolithography systems for micro- and nanofabrication. The systems are tailored to meet specific customer needs in the academia and industry. Multiphoton Optics, a Heidelberg Instruments company and pioneer in 3D laser lithography via two-photon polymerization (TPP), closes the gap between conventional laser lithography - the basis of the company's strong core business - and the nanostructuring technology (t-SPL) offered by Heidelberg Instruments nano division.

Key facts: Founded in 1984, ~ 300 employees, more than 1,000 installed systems worldwide, represented in 7 countries at 11 locations, global partner network on all continents.

## Products / Services

The Heidelberg Instruments systems and technology pool comprises high-precision maskless aligner (MLA), laser lithography systems for direct writing of 2D and 3D microstructures to mask-making, and thermal scanning probe lithography (tSPL) for advanced nanofabrication. Multiphoton Optics' 3D laser lithography systems (TPP) enable the high-precision production with high throughput of complex functional microstructures in a single process step. The fields of applications are in micro-optics and microsystems technology, electronics, photonics, advanced packaging applications, MEMS, micro-mechanics and biomedical engineering.

In the Process and Application Labs (PAL) located in Germany, Switzerland and China, the engineers train and collaborate with customers to make the most of their Heidelberg Instruments equipment.

## References and export activities

With more than 1,000 installed systems worldwide in more than 50 countries, Heidelberg Instruments products satisfy customers requirements in research and development as well as in the industry.

Heidelberg Instruments is organizing the sales activities as direct sales via own branches located in Americas, Europe and Asia, or via a global distributorship network, and represented in Singapore, by Regional Business Network Private Limited.

## Target group

Our focus interest on the Singapore market is the initiation and further development of sustainable cooperation with universities and application-oriented research and development institutes as well as manufacturers in the industry from the electronics, semiconductor, photonics and micro-optics sector. Further interest is on micromechanics as well as biomedical engineering and life sciences.

## Competitive advantages

With more than 36 years of innovation, and the extensive know-how in developing customized lithography solutions in the upper mentioned industries and applications fields, we support our customers from the very first design idea, via prototyping and small pilot series to industrial volume production.

## Purpose of participation in the project

Especially in the electronics, semiconductor and photonics industries, we are seeking for establishing new contacts to business partners and end-customers in the industry, as well as to partners in research and development and with universities. Our focus interest is on all projects, where maskless lithography and 3D laser lithography via two-photon polymerization (TPP) will contribute with a more optimized solution.



## Heidelberg Instruments Mikrotechnik GmbH

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Project:

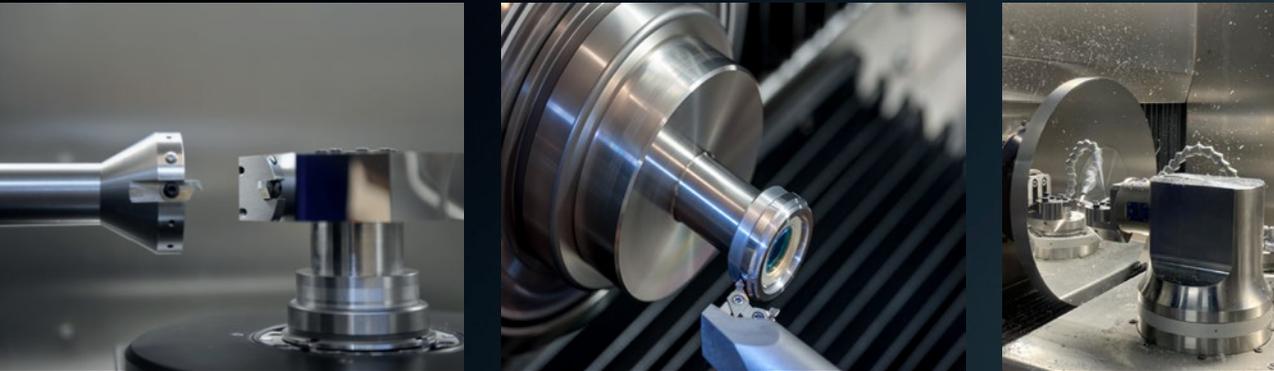


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# Ultra Precision Machine Tools



## Summary

Innolite GmbH – Driving productivity in ultra precision technology. Your expert partner for ultra precision machine tools, molds and optics.



  
made  
in Germany

## Company profile

Innolite GmbH – Driving productivity in ultra precision technology.

Since 2008 we produce polymer and metal optics and mold inserts for optical components. Moreover Innolite develops and produces there own ultra precision machine tools. Besides diamond turning we are specialised in the various fields e.g. direct cutting of steel and center turning of lenses.

## Products / Services

- Ultra precision machine tools
- ILSONIC (Cutting directly in steel)
- ILCENTRIC (Center turning of mounted lenses)
- Support in optical design
- Mold inserts for optical components
- Polymer optics
- Metal optics

## References and export activities

Main customers work in the field of:

- Smartphones (OEM and TIER1)
- Medical devices
- Military
- Automotive lighting
- R&D

Worldwide activities. Main markets are Asia, Europa and Northamerica

## Target group

- Photonics business in general
- Smart devices (OEMs and Tier1)
- Lighting especially for automotive
- Aerospace
- Optical medical devices

## Competitive advantages

- Fulfilling of highest demands on surfaces and accuracy
- Great know-how along the optical value chain
- Development focused on customer needs

## Purpose of participation in the project

Focus on an area with an outstanding know-how in optics



### Innolite GmbH

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Languages: German, English

Project:

**German Business**  
Delegation  
Singapore  
20<sup>th</sup>-24<sup>th</sup>  
September 2021



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## Summary

Spectrometers and 2D cameras for light and radiation measurements. Processes for highest accuracy and precision in customer's production and lab. Global application and service based on tightest metrological standards.



made  
in Germany



**Your Experts for  
Light Measurement Solutions**

## Company profile

Founded in 1986, Instrument Systems has since grown into one of the world's leading manufacturers of high precision spectrometers, complex systems and software solutions for spectral light measurement. Our name stands for innovative, top-class light measurement technology and unrivalled specialist knowledge over an extremely broad range of applications.

## Products / Services

The range of our products includes complete systems of spectrometers and 2D measurement cameras with the required accessories, software, calibration and application support.

Applications are in all areas of lighting and radiation. This includes turnkey solutions for display development and production, LEDs and VCSEL, optical sensing, gesture recognition and 3D sensing as well as automotive areas.

Our standard product and software portfolio solves most common applications for broad use. Specific tasks are solved by customized solutions.

A worldwide service network is available which is based on a solid metrological backbone. This enables continuous long term use of the equipment even in new applications.

## References and export activities

A network of partners and related entities provides application support and in region service to support our equipment. Our customers include major electronics OEMs, display and LED manufacturers as well as well known automotive companies. Worldwide national labs and research institutes rely on our products for high end measurements.

## Target group

The range of customers includes virtually all areas of light and radiation measurement. Both lab and production applications are served with measurements of radiance, luminance, color and related applications.

Our users are from research and development, application testing, quality assurance and production. Industries are broadly covered and include electronics, automotive, optical material, LED and lighting.

## Competitive advantages

Our customers can rely on our solutions to ensure the highest quality of their products. Key to their success is the precision and reliability of our products that enable repeatable measurements. Our application experts ensure tailor made solutions with metrological support traceable to global national labs.

## Purpose of participation in the project

Instrument Systems has several decades of experience in the Asian market. This includes relations to some of the larger companies in Singapore. However, Singapore has grown to one of the main technology hubs in Asia for many groups worldwide. A thorough evaluation of the local environment shall expand the business and explore the next steps.



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Languages: German, English



Supported by:



Project of:





## Summary

Phaseform provides refractive adaptive optics components and -systems for the use in optical applications and life-science microscopy to increase resolution, contrast of imaging applications.

Phaseform is a spin-off company from the University of Freiburg in Southern Germany.

made in Germany



## Company profile

Phaseform designs and manufactures refractive, ultra-miniaturized, high-fidelity adaptive optics components.

We aim to bring our easy-to-use and easy-to-integrate products to a wide range of imaging and beam shaping applications in Life Science & Microscopy, Vision Science and Ophthalmology, Material Science & Semiconductors, 3D Micro and Nano Printing, AR/VR/MR and amateur astronomy.

We is a startup company established in 2020, spun-out of the Department of Microsystems from the University of Freiburg in Southwestern Germany.

## Products / Services

Adaptive optics (AO) refers to a powerful range of image correction techniques with proven benefits for a large range optical and life-science microscopy methods.

Phaseform's refractive wavefront modulators for adaptive optics (AO) are based on novel optofluidic microsystem technology that we call Deformable Phase Plates (DPP). Its unique features combine the advantages of deformable mirrors and transmissive liquid crystal spatial light modulators enabling a new class of ultra-compact, high-efficiency, transparent wavefront modulators.

## References and export activities

-

## Target group

Life-science infrastructure (e.g. microscopy centers)

Researchers in optics, adaptive optics, life-science microscopy and -imaging ophthalmology

## Competitive advantages

Small component that dynamically reduces high-order optical aberrations

Increased resolution, contrast and brightness, for imaging applications

Can be easily integrated into any optical system

## Purpose of participation in the project

Establishment of relations to:

- researchers in life-sciences, optics, adaptive optics, microscopy users, -societies, -centers
- manufacturers of microscopic or ophthalmologic equipment
- distributors and re-sellers of optical components, systems, and assemblies
- providers of optical materials and services

Learning about SG research/industrial ecosystem

Potential manufacturers:

MEMS, Optofluidics, Semiconductors, Electronics



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Project:



Supported by:



Project of:





Laser Rack Systems



Flexible Multi-Color Laser Combiner for Microscopy



Gas laser replacement for lithography and holography



Amplified Lasers



## Summary

World leading developer and manufacturer of high-end laser systems for scientific and industrial applications being in business for over 20 years. Our portfolio includes diode lasers, ultrafast fiber lasers, terahertz systems and frequency combs.

made in Germany

## Company profile

Founded in 1998 near Munich (Germany), TOPTICA became one of the leading laser photonics companies by aiming for, and consistently delivering high-end specifications. TOPTICA's diode lasers are appreciated for excellent coherence, wide tuning range and ideal beam profiles.

TOPTICA's 340 employees take pride in developing customized systems. In close collaboration with several universities and institutes, latest scientific discoveries are frequently incorporated into commercial products. With a global distribution network, TOPTICA provides exceptional service worldwide.

## Products / Services

TOPTICA develops and manufactures high-end laser systems for scientific and industrial applications. Our portfolio includes diode lasers, ultrafast fiber lasers, terahertz systems and frequency combs.

TOPTICA's lasers and systems are widely used in three core markets:

Quantum Technologies - Research labs and companies all over the world apply our lasers and laser systems for groundbreaking research and applied systems.

Biophotonics - Our diode laser engines and ultrafast fiber lasers are valued in many applications such as Confocal Microscopy, Multi Photon Imaging and many more

Materials and Metrology - TOPTICA provides high end lasers to demanding applications such as SEMICON metrology, Lithography, 2 Photon Polymerization etc.

## References and export activities

OEM customers, scientists, and over a dozen Nobel laureates all acknowledge the world-class exceptional specifications of TOPTICA's lasers, as well as their reliability and longevity.

TOPTICA has a strong presence in Asia with offices in China and Japan and our distribution partner Precision Technologies in Singapore.

## Target group

Our systems are used for demanding applications in biophotonics, industrial metrology and quantum technology.

TOPTICA is a well established provider of high class laser solutions for Academic as well as Industrial partners.

## Competitive advantages

TOPTICA is renowned for providing the widest wavelength coverage of diode lasers and ultrafast laser sources on the market, providing high-power lasers even at exotic wavelengths.

TOPTICA provides: unique customized laser solutions to high volume reliable laser production

## Purpose of participation in the project

TOPTICA, together with our long-term partner Precision Technologies, would like to widen the customer base in Singapore. We do hope that this project helps us to broaden our opportunities especially in the Industrial (Manufacturing, Metrology, Quality Control etc.) side of our business.



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Languages: English, German

Project:

**Business Development**  
Delegation  
**Singapore**  
20<sup>th</sup>-24<sup>th</sup>  
September **2021**



Supported by:



Project of:





**Singaporean-German Chamber  
of Industry and Commerce**  
Deutsch-Singapurische  
Industrie- und Handelskammer

The Singaporean-German Chamber of Industry and Commerce (SGC) is part of a network of 140 offices of the German bilateral Chambers of Industry and Commerce abroad (AHKs) in 92 countries. The AHKs are institutions of German foreign trade promotion.

The SGC is one of the largest national Business Chambers in Singapore with a membership of close to 550 representatives from a variety of industries from Germany and Singapore. The SGC is a valuable and well-established networking platform and well connected with authorities in Singapore and Germany. Through its active industry committees SGC gives a voice to businesses.



**SBS**

*systems for business solutions*

SBS systems for business solutions is a 1999 established private consulting agency, with two decades of experience in the planning, development and implementation of international projects. Moreover, the company offers services such as workshops, events and individually organized B2B-meetings, as well as individual strategies for market entries and assistance for the coordination of international teams for the German-speaking and Italian market.

Since 2006, SBS has been organizing hundreds of internationalization projects from delegation trips abroad to big virtual conferences on behalf of several German ministries and other foreign governmental

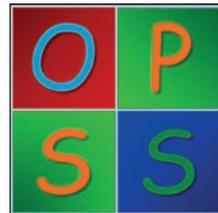
With its distinct service unit and trade fairs arms - DEinternational and Fairs & More respectively - the SGC builds a primary source for receiving reliable information on the German and Singapore business environment as well as bilateral trade relations.

DEinternational serves clients in their business needs e.g. searching for business partners, organizing business missions and business trips, finding staff members and providing market analysis.

DEinternational has worked in many areas such as Energy Efficiency, Start-Ups, Education, Industrie 4.0, Finance, Research and Development and many more. Moreover, the SGC provides services in the public interest of the Federal Republic of Germany.

institutions. In addition, SBS has been honored by the Italian Ministry of Economic Development with the title of “Temporary Export Manager”. A highly-skilled team of project managers with multinational backgrounds, based in Berlin and Rome, is sensitized for the topic of cultural differences and therefore knows how to approach difficult cultural issues. In fact, SBS applies cross-cultural thinking and designs custom-made solutions that overcome intercultural borders to find the right partners for their clients. Thanks to a strong partner network and more than 600 German and international clients, SBS is able to facilitate a successful market entry in the most emerging and attractive markets worldwide.

## *In collaboration with*



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# Business success through cross-culture thinking

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