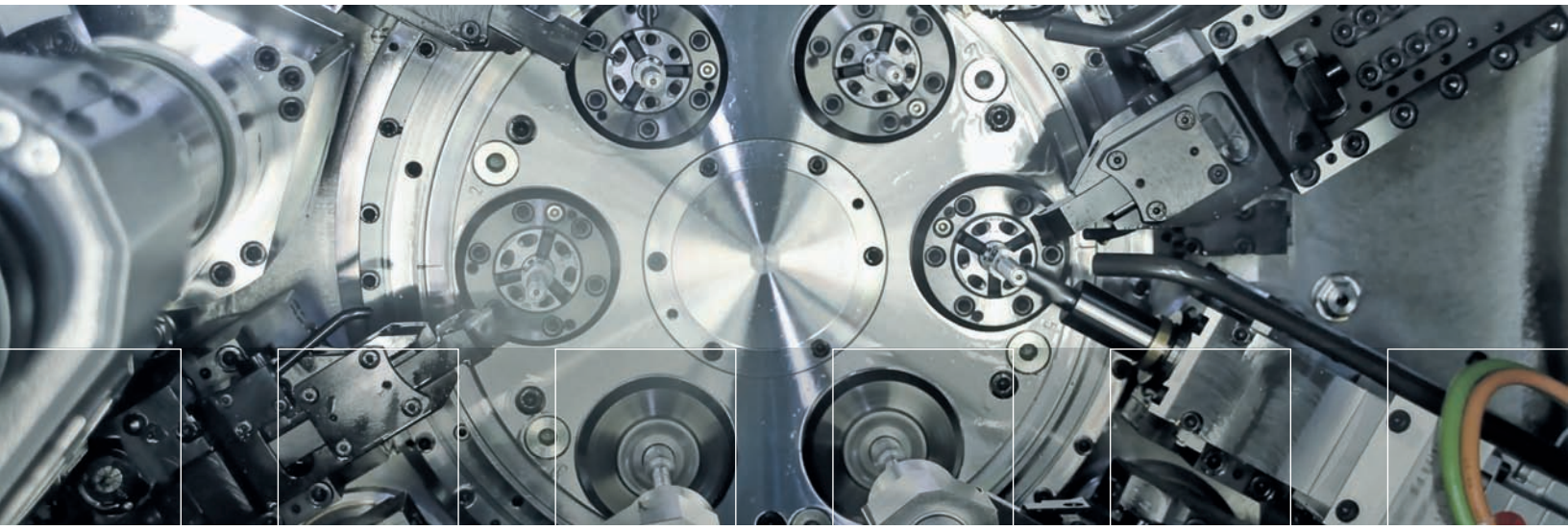
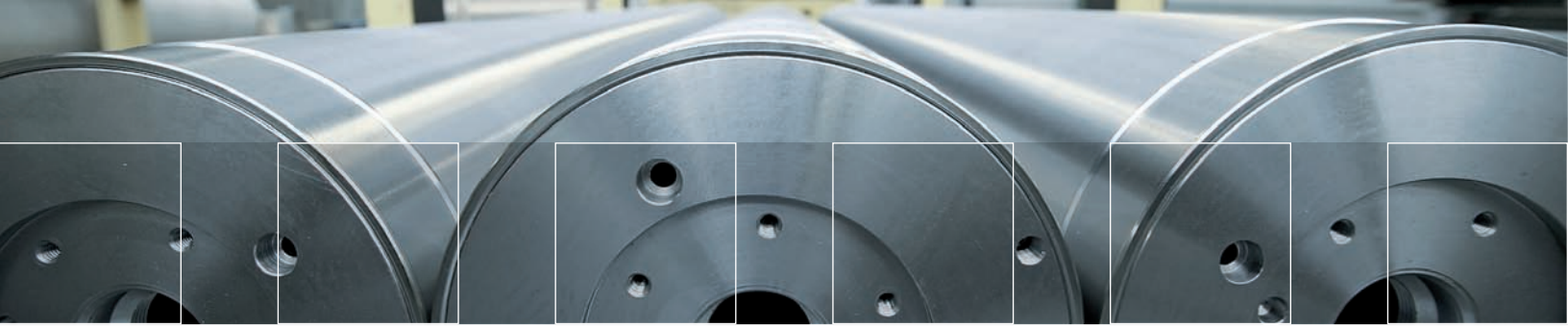
berne**capital**area



Precision industry cluster

- Facts and figures
- Leading companies
- Technology transfer
- Research and development
- Education
- Official bodies and associations
- Networking and trade fairs
- Services of the Berne Economic Development Agency



Facts and figures: precision industry in Switzerland

Swiss precision industry includes machine-building, electrical industry and metal industry (MEM) and the watchmaking industry. It is characterised by a large number of SMEs that perform at the top level in the world market. As part of this, **nanotechnology** is opening up new opportunities for traditional microengineering and electrical engineering, and in surface treatments. In Switzerland, around 384,000 people work in precision industry and around 16,000 companies operate in this area of industry.

The **MEM industry** makes up Switzerland's largest industrial sector. It is responsible for 40 % of industrial value added. Switzerland **ranks eleventh** amongst the major machine-exporting countries in the world. In many product areas, such as paper processing, tooling machinery, textile machinery, print machinery and packaging machines, it is amongst the **world's leading providers.** The Swiss MEM industry exports primarily to Europe, Asia and North America.

The **watchmaking industry** has a long tradition in Switzerland. It is world leading, particularly in the **luxury segment.** The Swiss watchmaking industry provides 6.5 % of industrial value added and employs around 49,100 people in around 609 companies. The main export destinations are Asia, Europe and America.

Around 95 % of Swiss watch manufacturers are based around the foot of the Jura mountains, in the cantons of **Berne,** Geneva, Neuchâtel, Jura, Vaud and Solothurn. The watchmaking industry cluster consists of manufacturers, suppliers, designers, educational and research institutes, together with official bodies and sector-based associations. The main Swiss watchmaking centers are **Biel,** Geneva and La Chaux-de-Fonds.

Around 29 % of Swiss **expenditure on R&D** is contributed by the MEM industry. Switzerland is home of major research institutes for precision industry and nanotechnology: the Swiss Center for Electronics and Microtechnology (CSEM) in Neuchâtel; the Swiss Federal Institute of Technology Zurich (ETH); the Swiss Federal Institute of Technology Lausanne (ETHL), including its center for micronanotechnology; the Swiss Federal Laboratories for Materials Science and Technology (EMPA) in Dübendorf and Thun; the Swiss Nanoscience Institute in Basel; the Adolf Merkle Institute in Fribourg; the IBM research center in Zurich and the Paul Scherrer Institute in Villigen. The Berne University of Applied Sciences ideally combines praxis and theory in the fields of study Mechanical Engineering and Medical Technology.

Precision industry in Switzerland

	Share in Swiss value added	Number of employees	Number of companies
MEM industry	40.0 %	334,500	15,300
Watchmaking industry	6.5 %	49,100	609

Sources: BAK Basel 2009 / Convention patronale 2009

WANDFLUH ...worldwide

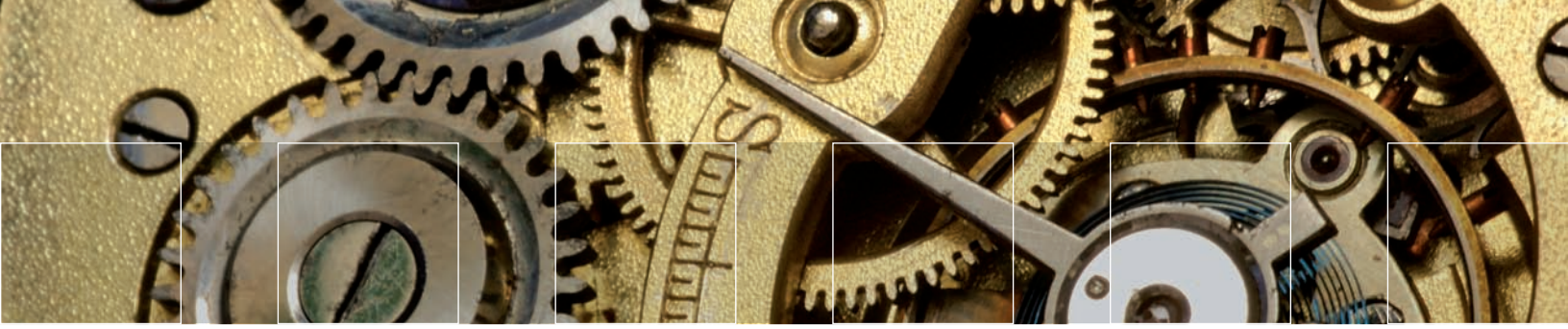
Hansruedi Wandfluh, CEO and delegate of the Board of Directors, Wandfluh AG

"To manufacture high-precision components and systems you need know-how, specialist personnel and the right infrastructure. The Canton of Berne and Switzerland provide all of this. Having a place of work where other people come for their holidays also encourages creativity and motivation." **www.wandfluh.ch**

HERMÈS PARIS

Guillaume de Seynes, President, La Montre Hermès SA

"The extensive know-how in the field of precision engineering, the expertise and quality of the employees, and the presence of local suppliers were the determining factors in the decision to choose Bienne as our location. Thanks to the 'Swiss made' label and a continually expanding range of mechanical watches the Hermès Group has seen its international reputation in the watchmaking grow. The site in Bienne today employs about 100 personnel. " **www.hermes.com**



Facts and figures: precision industry in the Canton of Berne

The long tradition in the watchmaking industry has driven forward know-how used in precision industry work. It is a major advantage for the successful development of precision industry in the Canton of Berne. Many well-known watch manufacturers are benefiting from the close proximity of suppliers in the Jura region. The supplier industry has developed strongly and diversified. Its businesses are not only working in the watchmaking industry, but also in automotive engineering, medical technology, information and communication technology, energy and environmental technology.

The Berne precision industry is highly **export oriented.** Over 80 % of its production is sold abroad. America, Asia, and Europe are major sales markets. The Berne precision industry works in areas such as watches (movements, components and equipment), tooling, robotics, automation, apparatus, manufacture of screwing parts, surface treatments, microelectronics, injection moulding of plastics, and micromechanics.

The **machine-building, electrical and metal industry (MEM)** constitutes the strongest industrial sector in the Canton of Berne. It generates 46 % of industrial value added in the canton. Companies such as Tornos, Feintool International Holding AG, Festo Microtechnology, Harting, Fritz Studer, Mikron Agie Charmilles, Faulhaber Group and Schneider Electric have a presence in the Canton of Berne.

The **watchmaking industry** is represented right across the value added chain: R&D, design, production (manufacturers and suppliers) and retail are all to be found in the Canton of Berne. The high number of employees makes the Canton of Berne the **second-largest watchmaking canton in Switzerland.**

The **Swatch Group** has its corporate head office in the Canton of Berne. It manufactures its **Longines, Omega, Rado** and **Swatch** brands in the canton. **ETA SA,** one of the biggest watch movement manufacturers in the world, has a number of production sites in the Canton of Berne. And the manufacture of **Rolex** watch movements is similarly concentrated in the Canton of Berne.

Research into precision industry in the Canton of Berne is primarily undertaken by the University of Berne, the Berne University of Applied Sciences, the Arc St-Imier University of Applied Sciences, the Swiss Federal Laboratory for Materials Science and Technology in Thun.

Precision industry in the Canton of Berne

	Share in industrial value added	Number of employees	Number of companies
MEM industry	46.0 %	45,500	2,200
Watchmaking industry	8.5 %	9,903	147

Sources: BAK Basel 2009 / Convention patronale 2009

The **Federal Office of Metrology** and the official **Swiss Chronometer Testing Institute** have their head offices in the Canton of Berne. The **Federation of the Swiss Watch Industry** has its head office in Biel. The **Swissmechanic** federation, uniting SME employers, professionals and specialists, has representative sections in Biel and Berne.

Nicola Thibaudeau, CEO, MPS Micro Precision Systems AG

"MPS has ideally located business premises in Biel. With a floor space of 14,400 m^2, the building has high-precision production facilities for profile turning and truing. Each year, it produces 40 million balls with a diameter of between 0.120 and 1.5 mm. Assembly operations are performed in protected areas and clean rooms. Development of complex systems is based on ball-bearing technology and on synergies with the Faulhaber Group. The highly motivated and dynamic team comprises 220 staff members drawn from a region which specializes in microtechnology."

www.mpsag.com

Monika Löffel-Bösch, Vice President of the Board of Directors of Feintool International Holding AG

"The Canton of Berne is home to leading companies in the precision engineering industry who have established a successful position for themselves in the global competition. High capacities for innovation as well as technical expertise are particularly required in the manufacture of high-quality products. The Canton of Berne offers international companies stable political conditions, a good infrastructure, skilled employees and a network of cluster organizations."

www.feintool.com

Leading companies in the Canton of Berne

Many leading companies in the precision industry have located in the Canton of Berne, particularly highly-specialized SMEs (the list below is a representative selection).

HERMÈS PARIS
www.hermes.com

LONGINES
www.longines.com

OMEGA
www.omegawatches.com

RADO SWITZERLAND
www.rado.com

ROLEX
www.rolex.com

swatch
www.swatch.com

Adval Tech

Develops and manufactures technologies for metal stamping and forming and plastic injection moulding. The company offers moulds, special machinery, subassemblies, systems and volume components. Adval Tech has a presence in the Canton of Berne through the company Styner + Bienz. **www.advaltech.com**

Affolter Technologies SA

This company develops and manufactures cogs, movements and counters both for the watchmaking industry and for microengineering products. **www.affoltergroup.ch**

Asetronics AG

Developer, manufacturer and tester of multi-function circuit boards, electronic assemblies, electronic subsystems and electronic products and systems for the “high mix – medium volume” segment. **www.asetronics.ch**

Bystronic AG

Solutions provider for economical working of sheet metals and other flat materials, with systems and services for laser and water jet cutting and bending. **www.bystronic.ch**

Cendres + Métaux SA

Developer and manufacturer of micromechanical semi-finished and finished products in precious metals, alloys and other high-quality materials for the watchmaking and jewellery industry, medical technology and dental engineering. **www.cmsa.ch**

DC Swiss SA

Developer and producer of precision tools, solutions and systems for thread-cutting technology (cutting, forming, milling), particularly for fine-detail components. **www.dcswiss.com**

Festo Microtechnology AG

Developer of miniaturised, technically complex components and systems for automation engineering. It undertakes precision fitting of actuators and sensors for light assembly applications. **www.festo-microtechnology.ch**

Güdel AG, Langenthal

A specialist in the development and manufacture of linear and drive components. The company also builds automated production lines for the automotive industry and plants for the aircraft industry, and is involved in robot construction. **www.guedel.com**

Harting AG

Development and production of device connection engineering, electrical and electronic connectors, network components and manufactured cables for networks and machines or for power feed and data transfer in factories. The company also acts as a supplier for mechanical and engineering machinery construction. **www.harting.ch**

Mikron Agie Charmilles SA

A Georg Fischer Group company. Producer of milling, eroding and laser ablation machines. It develops simple to complex, fully automated solutions and the associated accessories. **www.gfac.ch**

Schaublin Machines SA

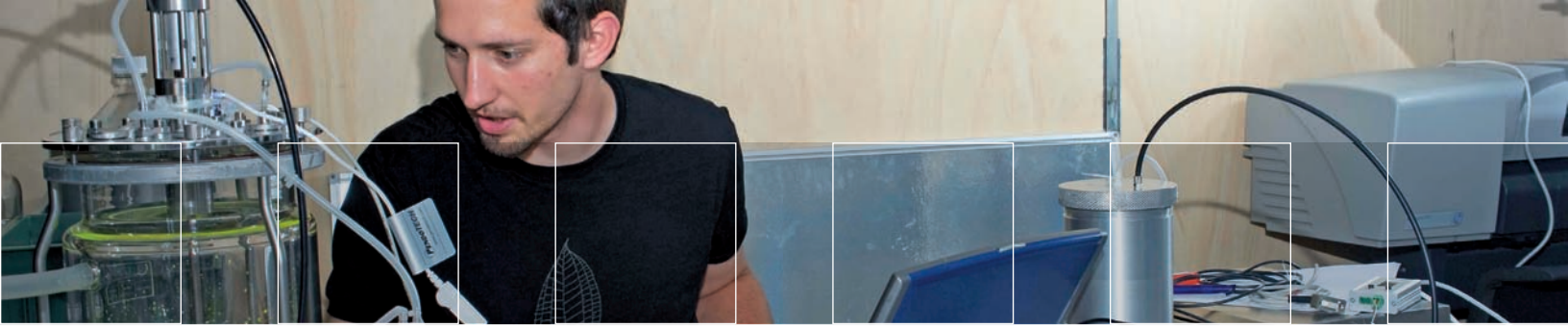
Manufacture and development of precision machines for turning and milling. Products include conventional lathes, CNC lathes and vertical machining centers. **www.smsa.ch**

SPT Roth AG

Global manufacturer of high-precision miniaturised components and tools in metal, plastic and ceramic. It produces mass-manufactured instruments, for example for chip assembly, for the watchmaking and textiles industries and for microelectronics. **www.smallprecisiontools.com**

Tornos SA

The company manufactures automatic single-spindle automated lathes, multi-spindle lathes and bar loaders controlled by software developed in-house. It is a supplier to several industries, including the watchmaking industry and medical technology manufacturers. **www.tornos.ch**



Technology transfer

The Canton of Berne is home to the Precision Cluster, which promotes networking between companies, technology transfer and higher-level training. The universities provide research services for companies to the highest standards.

The Precision Cluster

The Precision Cluster provides a platform for companies, suppliers and training and research institutions working in the field of precision engineering and microengineering. Through marketing measures and events, the Precision Cluster supports customer acquisition and pursues targeted networking. Together with innoBE, it supports companies in their search for business partners. The Precision Cluster operates on an interdisciplinary basis. As a result, it can generate valuable contacts to different enterprises in related or complementary areas. The Precision Cluster is working closely together with Micronarc.

.cluster-precision.ch

innoBE

innoBE works as an intermediary for technology transfer between companies and universities. It offers free initial consultancy for start-ups and SMEs for company set-up and innovation management. innoBE advises and supports companies in the planning and implementation of innovation projects, throughout the entire innovation process.

w.innoBE.ch

Micronarc

Micronarc is a Western Swiss cluster for microengineering and nanotechnology. It offers its members specialist events, contact brokering services and trade fair platforms. Core competences for Micronarc include close collaboration with the universities – such as the Federal Institute of Technology Lausanne (EPFL) – for technology transfer and R&D.

www.micronarc.ch

University of Berne – Unitectra

The technology transfer organization Unitectra for the Universities of Berne and Zurich provides services to support researchers in co-operations with private-sector companies and with private and public institutions.

www.unitectra.ch

Berne University of Applied Sciences (BUAS)

BUAS ensures innovation through knowledge and technology transfer. It implements R&D projects with business, provides services (studies, expert reports, consultancy) for outside bodies, offers systematic support for spin-offs and start-ups, encourages qualified junior researchers, and offers a wide programme of initial and continuing training.

www.ti.bfh.ch > Research > Knowledge and Technology Transfer

TT-Novatech

TT-Novatech in Saint-Imier/Moutier is an interdisciplinary institute for applied research and technology transfer which works in close collaboration with the Arc University of Applied Sciences. TT-Novatech fronts projects in the area of applied research and industrial development, performs mandates at the request of its economic partners and proposes support and advice activities. TT-Novatech mainly works and offers its services in the areas of mechanical engineering and machine tools, plastics processing, soft mobility, metrology and quality engineering, embedded and electronic systems, imaging and visualisation, as well as new interactive methods.

www.tt-novatech.ch

CTI – The Confederation's Innovation Promotion Agency

As the Confederation's promotion agency, the CTI provides financial support for research projects jointly developed by businesses and universities, linking up partners from both areas. The CTI supports knowledge and technology transfer via platforms and networks. Its particular areas of focus are microengineering and nanotechnology, and the engineering sciences.

www.bbt.admin.ch/kti

Präzisionscluster
Cluster précision

Freddy Lei, President, Precision Cluster

"The bilingual Precision Cluster forms a powerful network with SME members from the Cantons of Berne, Solothurn, Jura and Neuchâtel. The cluster identifies synergy and innovation potential that can be converted into commercial success."

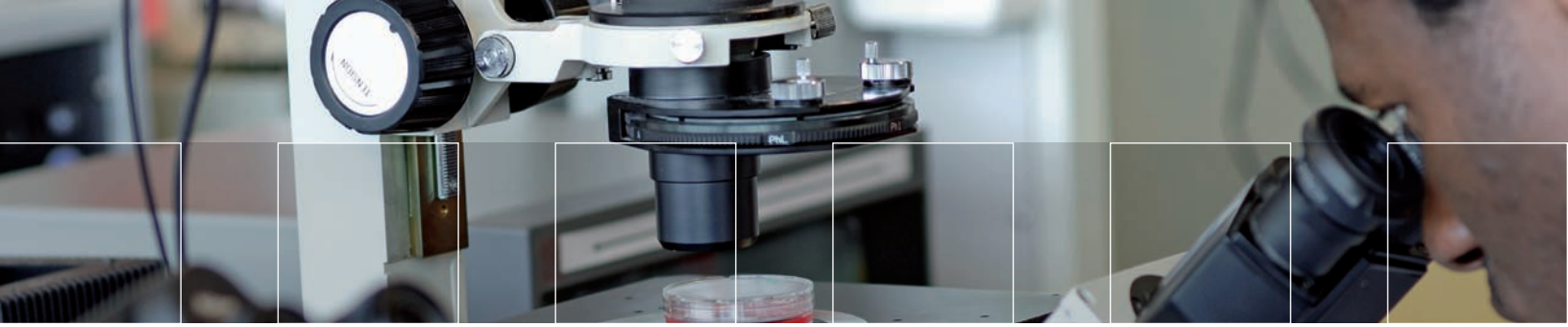
www.cluster-precision.ch

TT-NOVATECH

Hubert Droz, Director, TT-Novatec

"R&D and the TT activities are vital to companies, even more so for the microtechnology industries. The purpose of the TT-Novatech Institute, which is closely associated with the Arc University of Applied Sciences, is to front industrial R&D projects and focus on the TT process, it therefore naturally serves as a node for the Precision Cluster."

www.tt-novatech.ch



Research and development

In the Canton of Berne, it is particularly the University of Berne, the Berne University of Applied Sciences (BUAS) and the Swiss Federal Laboratory for Materials Science and Technology (EMPA) in Thun which conduct research in areas relevant to the precision engineering industry. The Swiss Center for Electronics and Microtechnology (CSEM) in Neuchâtel is the key institute in Switzerland in this field.

University of Berne: Physics Institute

The Physics Institute comprises three departments – climate and environmental physics, space research and planetary sciences, and high-energy physics. Each department is dedicated to a separate area of research. The Laboratory for High-Energy Physics is a member of the CERN ATLAS experiment, being conducted at the European Organization for Nuclear Research (CERN) in Geneva. The Space Research and Planetary Sciences Division is well known for its international comet research.

www.space.unibe.ch
www.climate.unibe.ch
www.lhep.unibe.ch

Berne University of Applied Sciences (BUAS): engineering and information technology

The BUAS engineering and IT department engages in R&D in co-operation with businesses, other universities and national and international research communities. One particular feature is that SMEs lacking an in-house research department are able to convert ideas to innovations, working together with BUAS researchers. BUAS engineering and IT is researching in the field of production engineering at the institutes of mechatronic systems, print engineering, and applied laser, photonics and surface technologies, and at the Berne Institute for Risk and Extreme Events Analysis. These institutes examine the technologies, processes and methods which contribute to improving production processes and working materials, and to manufacturing innovative products.

www.ti.bfh.ch > Research

Swiss Federal Laboratory for Materials Science and Technology (EMPA)

EMPA is an interdisciplinary research and services institute for materials sciences and technology development within the ETH domain. EMPA's research includes work in the fields of nanotechnology, energy technology, environmental engineering, construction engineering and medical technology. EMPA is currently developing a laser center for coating technologies in Thun that is also open to use by industry partners and customers, for instance for large-surface microstructuring of materials. Furthermore the nanostructures on surfaces, the safe fabrication of dry nanopowders as well as the mechanical material properties from the nanoscale to the macroscale using experimental, analytical and computational techniques are being investigated in three laboratories.

www.empa.ch

Swiss Center for Electronics and Microtechnology CSEM, Neuchâtel

CSEM, the most important Swiss establishment for microtechnology, works in applied research, in product development, prototype development and small-volume production, and technology consultancy. It conducts R&D primarily in microtechnology and nanotechnology, microelectronics, system engineering, microrobotics, photonics and in ICT. CSEM provides services for customers in industry. In addition, it develops its own commercial activities with existing enterprises and through establishing spin-offs and start-ups.

www.csem.ch

Swiss Foundation for Research in Microtechnology (FSRM)

FSRM offers consultancy services to companies, specialist congresses, and studies and expert reports in microtechnology. It runs the Micronarc networking organization set up by the cantons of Berne, Fribourg, Geneva, Jura, Neuchâtel, Vaud and Valais.

www.fsrm.ch

Bern University of Applied Sciences

Lukas Rohr, Director, BUAS engineering and IT

"Precise, innovative and reliable – our education and research has its finger on the pulse of the economy."

www.ti.bfh.ch

EMPA
Materials Science & Technology

Prof. Dr. Gian-Luca Bona, Director, EMPA

"The innovative materials research and advances in technology at EMPA contribute to taking the limits of the precision industry to the boundaries of what is physically possible."

www.empa.ch

Training

The dual system of training in Switzerland makes it possible to have training closely linked to the actual needs of business. In addition to the traditional pattern of school-based education and training, many craft-based and industrial employees are being trained hands-on in practice. Depending on the sector, the practical element of the training is around 70 %, with the underlying theoretical principles being taught as the other part of the training.

Berne University of Applied Sciences (BUAS): engineering and IT

The BUAS engineering and IT department offers bachelors' and masters' courses, together with courses of further training.

- Bachelor's courses in automotive engineering, electrical engineering, mechanical engineering and microengineering
- Master of Science in Engineering

www.ti.bfh.ch

Arc University of Applied Sciences in Neuchâtel, Delémont, Le Locle and St-Imier

The Arc University of Applied Sciences offers the following courses:

- Bachelor course in Microengineering and Industrial Design Engineering
- Master of Science in Engineering
- Master of Advanced Studies (MAS) in Watch Design, in Intelligent Manufacturing Systems and in Rapid Application Development

www.he-arc.ch

Commercial-industrial vocational college Berne

GIBB offers courses of training, in subjects such as polymechanics, electronics and metal construction engineering as well as courses leading to professional qualifications (commercial or engineering).

www.gibb.ch

Berne Jura Commercial and Technical College

The Berne Jura Commercial College offers courses of training in subjects such as automation, microengineering, industrial design, electronics, mechanics, micromechanics and polymechanics. **www.ceff.ch**

Biel-Bienne Vocational Training Center

The technical college which forms part of the BBZ offers:

- Courses of training in micromechanics, electronics, microdrawing, watchmaking and applied mechanics
- Courses leading to professional qualifications
- A course of study qualifying as a technician (HF) in electrical engineering

www.bbz-biel.ch

Interregional Center for Continued Training (CIP)

In the engineering and training center for the threaded and toothed parts industry in Tramelan, CIP offers training, technical support and work on customer-specific orders. **www.cip-tramelan.ch > ctdt**

Official bodies and associations

In Berne, companies can get in touch directly and in a non-bureaucratic way with official bodies carrying out regulatory tasks.

Federal Office of Metrology (METAS)

METAS realises internationally agreed units of measurement and calibrates reference measuring instruments for use in statutory and industrial metrology. It supervises the deployment of measuring instruments in the fields of commerce, traffic, public safety, health and the environment. It makes its services available to research, industry and commerce, and runs the Swiss Calibration Service (SCS). **www.metas.ch**

Official Swiss Chronometer Testing Institute (COSC)

As an independent testing institute, the COSC tests chronometers manufactured in Switzerland. COSC was founded by the cantons of Berne, Geneva, Neuchâtel, Solothurn and Vaud, together with the Federation of the Swiss Watch Industry. **www.cosc.ch**

Federation of the Swiss Watch Industry (FH)

The Federation of the Swiss Watch Industry (Fédération de l'industrie horlogère suisse FH) has its head office in Biel. The members of the FH include 500 Swiss watch manufacturers and suppliers. The FH is a platform for its members, and it pursues the joint interests of the sector. It represents the Swiss watchmaking industry in respect of bodies and organizations involved in business and standardisation in Switzerland and abroad; for example, it is engaged in protecting the industry's interests in relation to domestic and foreign legislation. The FH has offices in Hong Kong and Japan. **www.fhs.ch**

SWISSMEM

SWISSMEM is a body which brings together the Swiss machine-building, electrical and metal industries, together with the associated technology-oriented sectors. It represents sectoral concerns to politicians, national and international organizations, employee representatives and the general public. For companies, SWISSMEM offers a wide range of practically oriented services. **www.swissmem.ch**

SWISSMECHANIC

SWISSMECHANIC is the independent federation for MEM enterprises. The professional groupings for the mechanical engineering, electrical engineering and electronics sectors are affiliated bodies, as are sectoral and trade organizations for Switzerland. The Berne/Biel SWISSMECHANIC section is active in the Canton of Berne. Today it numbers around 80 members. **www.swissmechanic.ch**

Networking and trade fairs

SIAMS – the specialist trade fair for microengineering

SIAMS is the microengineering industry's meeting place for customers, suppliers and manufacturers specializing in quality products. It is held every two years in Moutier, in May. Exhibitors at the SIAMS show investment products such as tooling machines, tools, assembly equipment, surface treatment equipment and automation equipment. Exhibitors similarly present supplier industry products based on expert know-how, particularly in turned part manufacture, mechanical machining and assembly. SIAMS organizes the specialist mediSIAMS trade fair for companies working in medical engineering.

www.siams.ch

The Precision Cluster

The Precision Cluster provides a platform for companies, suppliers and training and research institutions working in the field of precision engineering and microengineering. Members meet regularly at organized events and for a constructive exchange of ideas.

www.cluster-precision.ch

Berne Cluster Day

The annual Berne Cluster Day provides an information and networking platform for technology companies in the areas of innovation, knowledge transfer and technology transfer. The Berne Cluster Day is particularly suitable as a springboard for company co-operations and business opportunities. It is held annually in May.

www.berneinvest.com > about us > events

Our services

The **Berne Economic Development Agency (BEDA)** will provide you with free support and assistance in your search for a location and for setting up business in the Canton of Berne.

- Conducting individual evaluation visits
- Granting tax holidays and other financial benefits
- Procurement of grants for research and development activities
- Support in the search for a location and for procuring real estate and land
- Information on and clarification of questions relating to work and residence permits, social security, building approvals, etc.

In order to make your start in the Canton of Berne simple and straightforward we will provide you with useful contacts for

- government bodies and federal institutions
- educational institutions
- sector and cluster organizations
- financial service providers and risk capital
- advisors and solicitors
- other corporate networks

The BEDA is a one-stop shop for companies wishing to relocate to and expand in the Canton of Berne.

Publishing details

BEDA
Berne Economic Development Agency

Münsterplatz 3, CH-3011 Berne
Tel. +41 (0)31 633 41 20
Fax +41 (0)31 633 40 88

Robert-Walser-Platz 7, CH-2501 Biel
Tel. +41 (0)32 321 59 50
Fax +41 (0)32 321 59 51

info@berneinvest.com
www.berneinvest.com

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