



Research. Development. Innovation.

Welcome to RhySearch

Driving the future

Did you know that RhySearch has a unique technical infrastructure and expertise in its areas of research? Where could this be useful for you? Challenge us – let's drive the future together.

Dr. Richard Quaderer
General Manager









Focus of RhySearch

Welcome to the high-tech valley

The Alpine Rhine Valley is a transnational industry powerhouse. The region is world-famous for vacuum technology, optics/photonics and precision manufacturing. In general, 44% of jobs are in industry. As such, the Alpine Rhine Valley is strongly export oriented. In order to maintain or ideally expand this strong position, the area needs to further enhance its ability of converting novel ideas into market successes. That is exactly why RhySearch was established.

RhySearch is a public institution. It is supported by the canton of St. Gallen and the Principality of Liechtenstein.

We promote the competitive capacity of small and medium sized companies in the Alpine Rhine Valley region and beyond. We achieve this through our own R&D capabilities in Optical Coating and Precision Manufacturing. Further activities are the targeted networking of business and research with the aim of making the business location of the Alpine Rhine Valley region more attractive with the result of increasing opportunities for employment. Our mandate is to sustainably bolster the innovative power and competitive capacity of the regional high-tech business location.

We bundle the research capabilities of several research institutions. There is a vibrant informal and professional exchange of ideas and thoughts within the framework of this partnership, which benefits the entire network.



Precision
Manufacturing



Optical
Coating



Network



Innovation
Processes





Our offers

RhySearch is your partner

RhySearch takes SMEs a step further in the innovation process. We network with existing research and educational institutions, forming a technology cluster that can manage large-scale research assignments and technology transfer.

It also provides companies with a single point of contact for comprehensive research and innovation support.

In applied research and development, RhySearch is currently focusing on the areas Optical Coating and Precision Manufacturing.

Typical activities

- Initial examination of new ideas relating to innovation potential
- Feasibility studies
- Fostering innovative projects
- Managed focus groups to start large projects
- Project coordination, especially for projects with three or more partners
- Direct services in our research divisions



Optical Coating



Optical Coatings

Applied Research and Development

- Coatings for high-end and laser applications
- New coating materials
- Investigation and improvements of thin film properties when applying various treatments
- Development of dielectric materials with novel optical properties
- Research into the industrialization of new coating technologies

Services

- Prototype and small series manufacturing of dielectric coatings
- Laser-Induced Damage Threshold (LIDT) Testing (ISO Norm) and experiments
- Cavity Ring-Down (CRD) Measurements (ISO Norm)
- Variety of optical coating and characterization techniques
- Consultation and training
- and more



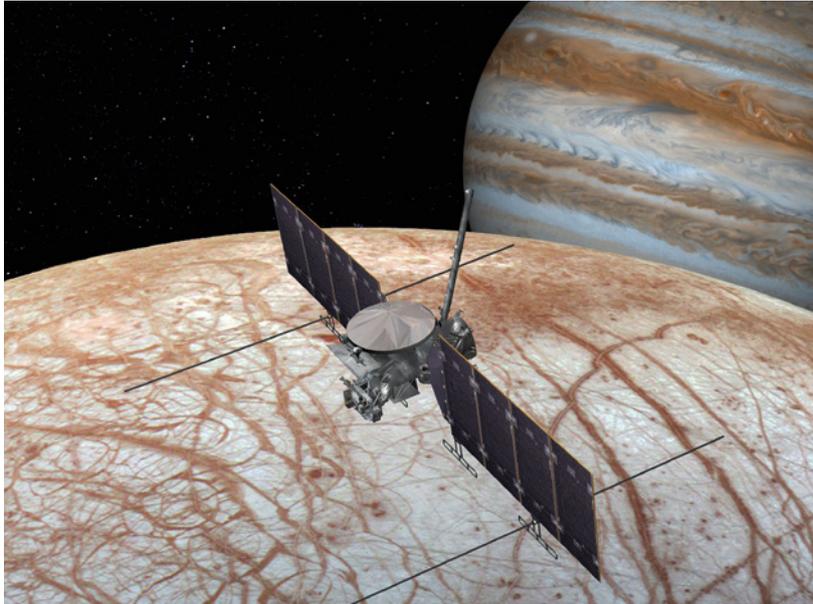
R&D for the high-tech industry

Optical Coatings – a gateway to new applications

Our experienced researchers test and develop thin films and coating systems. Analysis techniques such as Scatter Loss Measurements and coatings by Dual Ion Beam Sputtering, Atomic Layer Deposition and Pulsed Laser Deposition.

Our specific aim is to further the knowledge of these films and coatings and to develop processes for surface preparation before application of the coating.

We also provide the necessary characterisation techniques to foster applied research and innovation in companies engaging in optical coatings or laser technology.



Picture: ESA

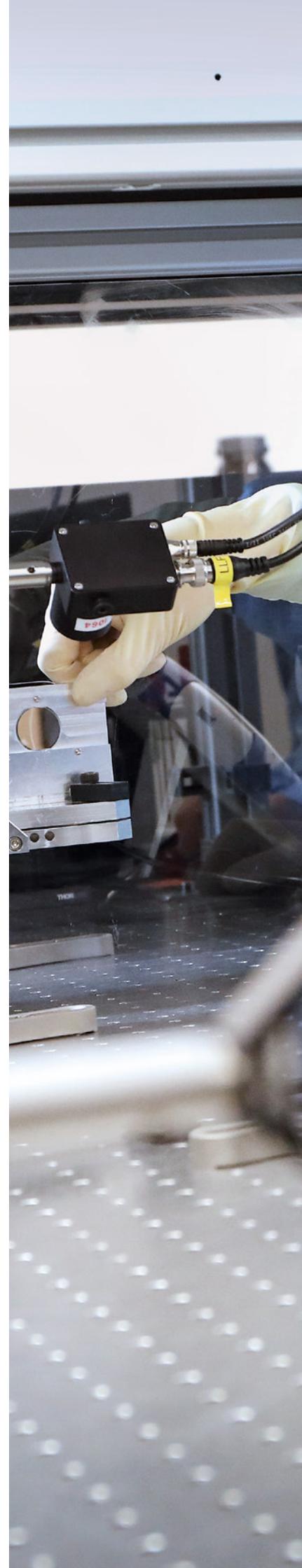
Our coatings fly to Jupiter

For a project of the University of Bern, our Optical Coating team coated substrates to be used in the Jupiter Icy Moon Explorer (JUICE) mission of the European Space Agency ESA.

The substrates are extremely fragile and unique. To coat them with aluminum oxide, we used our DIBS coating system.

The JUICE mission space probe will study three of Jupiter's Galilean moons which are thought to be potentially habitable environments, and run for ten years – from 2022 to 2032.

RhySearch's partner in this particularly challenging, yet successfully completed project was the Center for Space and Habitability of the Institute of Physics of the University of Bern.







**Precision
Manufacturing**

R&D for the high-tech industry

Precision Manufacturing – a key enabling technology

Reliable manufacturing of high-precision workpieces is the basis for many developments and new applications – whether in optics, aerospace, medical, energy or semiconductor technology.

The Swiss industry is world famous for its innovative solutions, combining precision and efficiency. To stay at the forefront of technology, a high level of innovative power and excellently skilled employees are necessary. The precision manufacturing division at RhySearch supports regional companies

with applied research and services in this field.

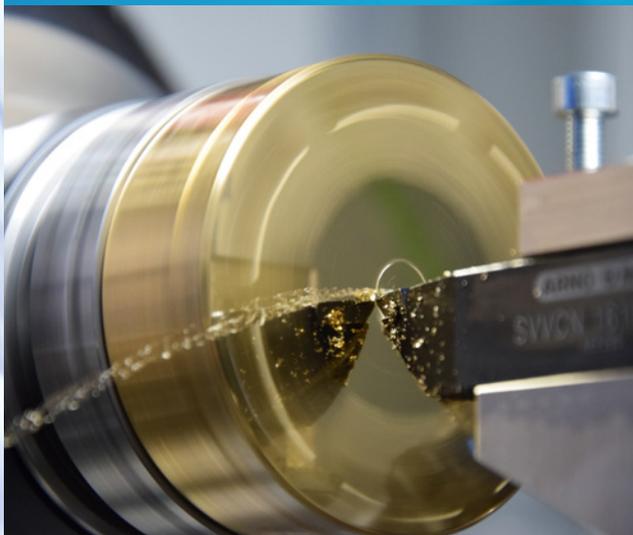
Our specific aim is to deepen the understanding of precision manufacturing and to implement the latest knowledge and technologies in close cooperation with companies for their benefit. The basis is our unique temperature-controlled manufacturing lab, which is equipped with the latest generation of machine tools and metrology. This makes RhySearch very attractive: as a partner for applied research and development and as an employer.





Our contribution to your success

- Precision manufacturing processes such as turning, milling or laser micro-machining, if required up to optical surfaces and form deviations in the submicron range
- Automation and digitalization of the process chain, e.g. inprocess measurement on the machine tool with automated NC-path correction, automated workpiece handling or machine-to-machine communication with data acquisition and analysis
- Prototype and small batch manufacturing of precision components
- Consultations and trainings
- and more





Network



Meetings, workshops and symposiums

RhySearch frequently invites representatives of the business and scientific communities to attend meetings, workshops and symposiums.

RhyTalk

Experts present a cross-industry innovation topic during a lunch-time event, hosted by regional companies and institutions.

The annual Symposium on Optical Coatings for Laser Applications – OCLA

is organised by RhySearch together with the OST – University of Applied Sciences in Buchs, Swissphotonics and the European Optical Society EOS.



Network & Innovation

Creative ideas become solutions

RhySearch aims to become a key player in transforming innovative ideas into marketable products and services, thereby contributing to sustained competitive advantages for companies in the Alpine Rhine Valley. We thrive on building strong and lasting bridges between the inception of an idea and its implementation in the market.

Our team supports customers on their journey by providing services in three domains: applied research and development, network and innovation processes.

Our customers' needs are our top priority. This is why we have established our services, based on a survey with potential customers and partners: In 2013, the numerous high-tech companies of the Alpine Rhine Valley region identified issues in the areas of optical coating and precision manufacturing as most critical ones for their businesses. Today we are proud of successfully providing outstanding expertise in these in these areas.



Innovation Processes



Current offer

For individual inventors and SMEs, RhySearch offers an Assisted Patent Search together with a patent expert from the Swiss Federal Institute of Intellectual Property IPI.

We offer a half-day Assisted Patent Search in cooperation with the OST – University of Applied Sciences on the OST Campus in Buchs SG. A patent expert, located at IPI in Bern, will provide information on patenting and you will have the opportunity to search public patent databases together.



Innovation Processes

Advance your business

As technology and product lifecycles have decreased and will become even shorter, companies need to launch their new products and services on the market as soon as possible. RhySearch offers attractive services that enable SMEs to realize innovations more efficiently.

In collaboration with selected external partners, we offer research tools and opportunities as well as providing knowledge on current issues. Our services are based on a practical approach and are designed to suit technology-driven companies.



Key facts and figures

Development of RhySearch

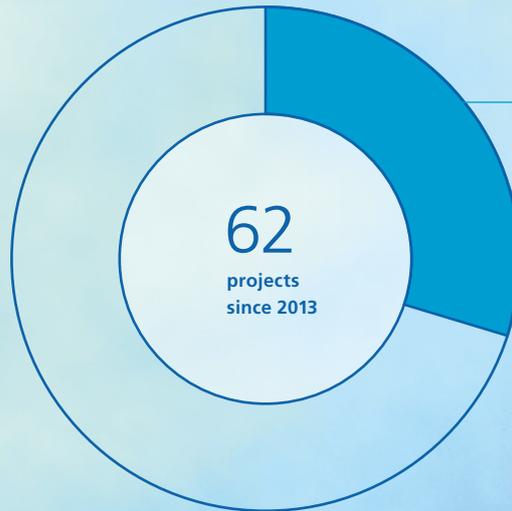
The Center has grown continuously since its foundation in 2013. This development has been possible thanks to the support of many people and institutions, especially the canton of St.Gallen, the Principality of Liechtenstein, our business and research partners, our employees and the Board of Directors of RhySearch.



Employees

The number of employees has increased considerably in the past years.

2013	2021	2025
2	20	~30



26
projects funded
by Innosuisse

Projects

RhySearch fulfills the criteria of Innosuisse for non-commercial research centers.

Innosuisse projects (2013 to 2021):

Total project volume:
CHF 15.4 million

Total research subsidies:
**CHF 7.0 million, thereof
CHF 3.8 million for RhySearch**

Infrastructure

12.2

million CHF
investments in high-tech
infrastructure by the end
of 2022.



Board of Directors and Management Team

The innovators behind RhySearch

**The management together with a committed team handles
the operational side of RhySearch.**

Board of Directors

Werner Krüsi, Chairman
Dr. Hans Ebinger
Dr. Roland Herb
Dr. Markus Hofer
Heiko Korndorf

Management Team

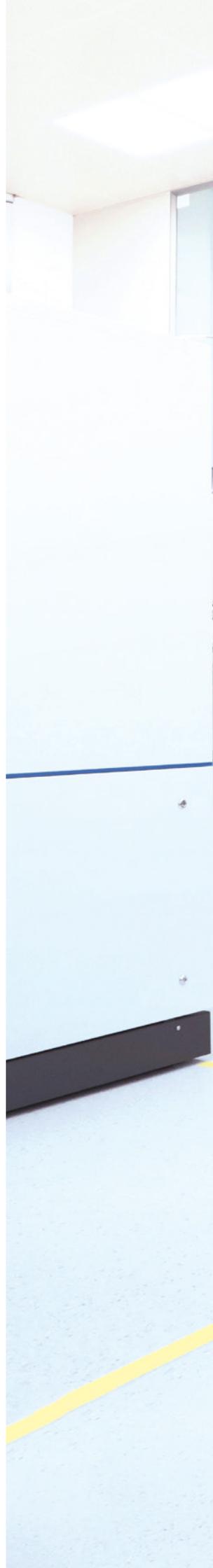
Dr. Richard Quaderer
General Manager

Dr. Roelene Botha
Division Manager Optical Coatings

Dr. Thomas Liebrich
Division Manager Precision
Manufacturing

Bärbel Selm
Division Manager
Network & Innovation

Danijela Djordjevic
Finance & HR





Dr. Thomas Liebrich

Bärbel Selm

Danijela Djordjevic

Dr. Roelene Botha

Dr. Richard Quaderer



The RhySearch network

Strong partnerships to benefit clients

RhySearch cooperates closely within a network of research institutions. Our cooperation partners strengthen the competencies and innovative approaches already present in the Alpine Rhine Valley. This cooperation intensifies the informal and personal exchange of ideas among the researchers and other parties involved. Potential synergies are exploited to develop new products and services together with the industry in the region and beyond.

Our strategic partners:

EMPA (Part of the ETH Domain)

inspire AG

OST – University of Applied Sciences

University of Liechtenstein

In May 2013, a support association was set up in business circles with the task of increasing the awareness of RhySearch and firmly establishing the research and innovation centre through the pooling of industry-specific interests.

Our member associations:

AGV Arbeitgeberverband Rheintal

**AGV Arbeitgeber-Verband Rorschach
und Umgebung**

**AGV Arbeitgeberverband
Sarganserland-Werdenberg**

IHK St.Gallen-Appenzell

**Liechtensteinische Industrie- und
Handelskammer (LIHK)**

Wirtschaftskammer Liechtenstein

**Startfeld, Netzwerk für
Innovation und Start-ups in der Region
St. Gallen Bodensee**



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Roland Korner, Triesen
René Ruis, Zurich (Picture on page 19)

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RhySearch
Das Forschungs- und
Innovationszentrum Rheintal

Werdenbergstrasse 4
9471 Buchs
Switzerland

T +41 81 755 49 50
info@rhysearch.ch
www.rhysearch.ch