

January 2018

**Specialised in Growth****Ladies and gentlemen,**

Product launches, awards, workshops made the last few months of 2017 very eventful for us and our portfolio companies. Both the specialty pharmaceuticals company AMW and GNA Biosolutions

have successfully introduced new products. We are also particularly pleased by the fact that EIT's entry into the US market was very successful. Many American surgeons are now already using the 3D-printed spinal implants.

We will be further expanding our network activities in the USA in 2018. Our long-time partner André Zimmermann has assumed responsibility for international business development and will be helping our portfolio companies gain a foothold in one of the world's most attractive medical technology markets.

I would also like to draw your attention to an upcoming event. Together with the medical technology industry initiative Medical Mountains, MBG Baden-Württemberg and SHS Gesellschaft für Beteiligungsmanagement have organized the event "Challenges and Financing Options for Medical Technology Companies" on February 27th, 2018 in Hausen ob Verena. The focus here will be on succession planning and funding opportunities for growing medical technology companies.

I hope you enjoy reading!



Hubertus Leonhardt

Topics

SHS strengthens network activities in the USA - André Zimmermann assumes responsibility for international business development

Investment campaign for Europe: EIB provides financing to AMW GmbH in Wargau

GNA Biosolutions presents a new ultra-fast PCR platform at the Medica trade fair in Düsseldorf

AOT presents its robot CARLO as part of Schweizer Digitaltag

EIT also gains footing in the USA

Tyromotion receives "Top of Styria" award

Follow-up financing for Miracor Medical

Event announcement: "Challenges and financing options for medical technology companies"

SHS at the Forum Medtech Pharma in Nuernberg

SHS at the CatCap Venture Lounge in Darmstadt

Jobs at SHS

Jobs at SHS portfolio companies

Selected press articles

ARTICLES

SHS strengthens network activities in the USA - André Zimmermann assumes responsibility for international business development



Dr. André Zimmermann, Partner at SHS

SHS partner André Zimmermann is further developing the company's network in the USA and will be focusing on what is considered to be the most attractive healthcare market in the world. As a point of contact especially for multipliers, investors and major US medical technology companies, Mr. Zimmermann will be intensifying the investment company's networking activities from Tübingen. He will be taking on this role in addition to his previous responsibilities. As such, he will remain responsible for the selection and development of portfolio companies as well as for partnerships with health insurance companies and associations. The economist with a doctorate in molecular biology has been an investment manager at SHS since 2002 and a partner since 2010.

"The US market is very large, dynamic, open for innovations and provides our portfolio companies with many opportunities for further development. The primary goal of expanding our network consists of facilitating access to the US market for our portfolio companies and all future investments, particularly in the fields of medical technology and diagnostics. André Zimmermann has gained extensive experience and expertise in this area. He will be responsible for strengthening our contacts in the USA", explained Hubertus Leonhardt, managing partner at SHS.

PORTFOLIO COMPANIES NEWS

Investment campaign for Europe: EIB provides financing to AMW GmbH in Warngau



AMW at European Investment Bank

The European Investment Bank (EIB) is providing 25 million euros to AMW GmbH (AMW). AMW is a specialty pharmaceuticals company focused on cutting-edge drug delivery systems. SHS invested in AMW in 2008 as one of its founding investors. With this new financing, AMW can intensify its development of innovative medicines, conduct clinical trials and expand production capacity at its plant in Warngau and at its subsidiary Endomedica in Halle. In addition to this, a new building for research, development and production with special manufacturing technology and state-of-the-art laboratory equipment is to be built at the company's headquarters in Warngau.

[Find out more >>](#)

KEY FACTS

Year established: 2008

Business purpose: Development, production and marketing / out-licensing of specialty pharmaceuticals.

Products: Transdermal systems (drug patches) and active implants for medical applications in oncology, neurology, psychiatry and endocrinology.

Location: Warngau (D)

GNA Biosolutions presents a new ultra-fast PCR platform at the Medica trade fair in Düsseldorf

The molecular technology company GNA Biosolutions unveiled its new product Pharos V8 on 13 November 2017 at Medica, one of the world's largest medical trade fairs. The world's first laser PCR® platform is an ultra-fast PCR instrument for in-vitro research. Pharos V8 sets new standards in the field of innovative detection technology for genetic analysis using nanomaterials. As with conventional PCR (polymerase chain reaction), laser PCR® is based on nucleic acid amplification. However, laser PCR® makes use of nanomaterials to enable controlled temperature cycles at nano scale, which can be used to accelerate polymerase chain reaction time by a factor of ten.



GNA's Pharos V8 – the world's first laser PCR® platform

"Pharos V8 demonstrates the potential of our patented technology to deliver ultra-fast results, while at the same time paving the way for our future platforms for diagnostics and point-of-care tests," said Dr. Frank Krieg-Schneider, CEO of GNA Biosolutions.

Pharos V8 is the company's first market launch and more are planned in the next two years.

GNA Biosolutions GmbH is a molecular technology company headquartered in Martinsried, Germany, which specializes in applications for medical diagnostics, bio-security, food security and life sciences from samples to results. SHS has held shares in the company since 2015. GNA Biosolutions GmbH mit Sitz in Martinsried ist ein molekular-technologisches Unternehmen, spezialisiert auf Anwendungen in der medizinischen Diagnostik, Biosicherheit, Lebensmittelsicherheit und Biowissenschaften, von der Probe bis zum Ergebnis. SHS ist seit 2015 am Unternehmen beteiligt.

KEY FACTS

Year established: 2010

Business purpose: Development, production and distribution of molecular diagnostic tests (POC/PON) and devices that are at least 10 times faster based on laser PCR technology to accelerate time-critical diagnoses (e.g. in case of infections) for the benefit of the patient.

Products: PharosV8

Location: Martinsried (D)

AOT presents its robot CARLO as part of Schweizer Digitaltag



The inventor and his robot: Alfredo Bruno and the bone laser Carlo

The robotic surgery company AOT received the opportunity to present itself and its robot CARLO as part of the Schweizer Digitaltag (Swiss digital day) platform. As part of implementing the 'Digital Switzerland' strategy, Federal Council member Johann Schneider-Ammann visited AOT last summer. He was impressed by the extraordinary robot CARLO and its technological edge over foreign competitors. The strategy centers around the consistent use of opportunities for digitalization to further increase Switzerland's attractiveness as a place to live and as a location for innovative future-oriented business and research.

AOT is a spin-off of the University of Basel and develops, produces and markets a robotic laser system for bone surgery. The robot CARLO replaces saws, milling machines and ultrasound with an innovative cold bone laser. The robot is controlled digitally using navigation software and assists the operating surgeon, while significantly reducing the duration of the operation as well as the subsequent healing phase. The scientific community is also enthusiastic about CARLO. The system has repeatedly been distinguished with various innovation and pioneer awards including the CTI Swiss Medtech award in 2015. SHS has held shares in AOT since 2015.

Watch on You Tube: <https://www.youtube.com/watch?v=TjrQ4Umcl6Q>

KEY FACTS

Year established: 2010

Business purpose: development, production and marketing of computer assisted laser systems for bone surgery

Products: CARLO (Cold Ablation Robot-guided Laser Osteotome) (surgery system)

Location: Basel (CH)

EIT also gains footing in the USA

After receiving FDA approval for its EIT cellular titanium implants, 3D printing specialist EIT has now successfully entered the US market. The first operations have been conducted using EIT implants in the United States. The American surgeons are very pleased with the handling and the products are gaining wide acceptance as reflected in an tremendous increase in the order volume.



"We are happy to have had the opportunity to worked with renowned surgeons at NASS (North American Spine Society) right from the product launch. The market response and acceptance is exceeding our expectations," says EIT's CEO, Guntmar Eisen.

EIT is a German manufacturer of medical devices, which focuses exclusively on the development of innovative technologies for spinal application using additive manufacturing. EIT Cellular Titanium® is a 3D-printed porous titanium structure that closely resembles natural bone according to scientific findings with respect to the ideal pore shape and size, and stimulates rapid and intensive bone formation. SHS has held shares in the company since 2016.

KEY FACTS

Year established: 2014

Business purpose: Development and marketing of 3D printed fusion implants and instruments for spinal surgery applications. External implant production based on selective laser melting (SLM 3D printing) and regional distribution cooperations.

Products: Cervical cage, lumbar cages as well as an innovation portfolio comprising minimal-invasive access, customizability and other spine innovation projects.

Location: Wurmlingen (2016, D), established in Tuttlingen (D)

Tyromotion receives "Top of Styria" award



Alexander Kollreider (2nd from left) at the award ceremony (photo: Harry Schiffer)

In early December, several companies from the Styria region were honored at the business gala "Top of Styria" and Tyromotion was among them. Alexander Kollreider, co-founder of the Graz-based high-tech rehabilitation specialist accepted the award for "Innovation" on the company's behalf.

Tyromotion is one of the world's leading manufacturers and distributors for robotic- and computer-based rehabilitation equipment. In November the young company had already received the export award in the "Small Business" category at the Styrian export day event. SHS has held shares in Tyromotion since 2016.

The yearly magazine "top of styria" has been published since 1994 and includes a ranking of the top 100 largest companies in Styria. Since 2000, a renowned jury has been selecting outstanding entrepreneurial personalities. The magazine also serves as a platform for renowned economic experts and business leaders to write about current and fundamental economic issues.

KEY FACTS

Year established: 2007

Business purpose: Development and distribution of robot-assisted and computer-assisted therapeutic devices for the rehabilitation sector, primarily for stroke patients

Products: Amadeo finger-hand-therapy, Diego arm-rehabilitation, Myro interactive therapy, Pablo hand-arm-Rehabilitation, Tymo therapy board

Location: Graz (A)

Follow-up financing for Miracor Medical

In a series D round of financing, the medical technology company Miracor Medical Systems has received 25 million euros in fresh capital. SHS Gesellschaft für Beteiligungsmanagement was joined by Earlybird Venture Capital, Delta Partners, BioMedPartners and Peppermint VenturePartners as exiting investors as well as the Belgian and Walloon investors SFPI, SRWI and Meusinvest as new investors.



The capital from the financing round will be used for further development of the PiCSO Impulse system. PiCSO is a treatment technology that can significantly reduce damage to the heart muscle resulting from a heart attack or congestive heart failure.

"The new capital provides Miracor with promising opportunities. We will use the financing to perform a clinical trial in Europe, to obtain FDA approval to conduct a large trial in the US, and to develop PiCSO's position on the European market", said Miracor Medical's CEO, Olivier Delporte.

SHS has held shares in Miracor since 2011.

KEY FACTS

Year established: 2008

Business purpose: development and distribution of a therapy that reduces damage to the heart muscle following an attack or congestive heart failure

Products: PiCSO Impulse System (consisting of an impulse catheter and impulse console, which automatically controls the impulse catheter)

Locations: Vienna (A) and Manchester (UK)

INSIDE NEWS

Event announcement: "Challenges and financing options for medical technology companies" on February 27th, 2018 in Hausen ob Verena

Together with the medical technology industry initiative Medical Mountains, MBG Baden-Württemberg and SHS Gesellschaft für Beteiligungsmanagement have organized the event "Challenges and Financing Options for Medical Technology Companies". It will take place on February 27th, 2018 in Hausen ob Verena, Germany. The focus here will be on succession planning and funding opportunities for growing medical technology companies. In addition to this, experts will be presenting interesting case studies. We look forward to seeing you there!

[Here](#) you find further details on the event and possibilities for registration.

SHS at the Forum Medtech Pharma in Nuernberg



Dr. Matthias Schier, managing director of Forum Medtech Pharma (center) with the guest speakers

Medical equipment manufacturers are increasingly faced with the challenges posed by complex projects, complicated financing and regulatory requirements. To be successful in this environment, Medtech players have to have a variety of skills and expand their networks.

SHS's managing director Hubertus Leonhardt explained in his presentation how the financing of innovation projects can work. He spoke about the high costs of investment – an issue that should be considered from the outset in the planning of new projects. Of another important issue, Hubertus Leonhardt explained, "especially when it comes to medical technology, the financing has to match the phase that the company is in". In the start-up phase, for example, venture-capital financing makes sense, but after market penetration starts, mezzanine capital or private equity could be more appropriate.

SHS at the CatCap Venture Lounge in Darmstadt

SHS once again took part in the annual CatCap Venture Lounge, which took place this year at Merck in Darmstadt, Germany. The CatCap Venture Lounge regularly invites investors, entrepreneurs and consultants from the field of life sciences and brings together young founders. The young entrepreneurs pitch their business cases to investors. Together with colleagues from the areas of venture capital and corporate venture capital, SHS investment manager Cornelius Maas evaluated several interesting companies that took part in this year's pitch contest.



Cornelius Maas (2nd from left) at the Venture Lounge

CAREER

Jobs at SHS

Junior Investment Manager (m/f)

Have you recently received your Master's degree in the field of business, business law, engineering or science? Are you also interested in corporate finance and have you gained practical experience in this area as part of your studies? Would you like to be involved in challenging, dynamic, and entrepreneurial activity as part of an experienced team? Then apply today. We look forward to hearing from you. [Read more >>](#)

Managing Director / MBI candidate (m/f) for medical technology, succession solution

We are regularly seeking executives who would like to become entrepreneurs with us and drive the performance of companies. Together we develop a corporate vision and strategy, which you then put into action with our support. [Read more >>](#)

Internships for students

Are you studying business, economics or engineering? We offer you the opportunity to apply your previously acquired knowledge as part of an experienced team of SHS professionals. You will benefit from a project-oriented, flexible working atmosphere, a flat hierarchy and diverse employment opportunities offered by SHS throughout the entire investment activity cycle. [Read more >>](#)

Master's thesis at SHS

Are you writing your master's thesis in business, economics or engineering? We offer you the opportunity to write it as part of a six-month internship with our company. We would be happy to help you define a current topic in the area of venture capital / private equity. Contact us. [Read more >>](#)

Master's thesis at SHS – Digital Health

Are you a student in the field of Economic Sciences or Engineering or one of the Natural Sciences? We offer you the opportunity to write your Master's thesis on the exciting topic of Digital Health as part of a six-month internship with our company. [Read more >>](#)

Jobs at SHS portfolio companies

Vice President of Marketing & Sales US (m/f)

Company is a dynamic, fast growing company that enables break-through diagnostic tests. Among Company's customers are leading clinical laboratories in the United States. To better serve those customers and expand the business in the United States Company is looking for a VP Sales & Marketing of Company's US affiliate located in Boston who should later serve as President of the US affiliate. [Read more >>](#)

Senior Production Manager (w/m) 100 %

ndd Medical Technologies are leaders in lung function testing equipment. To strengthen their Supply Chain Team in Zurich they are looking for a Senior Product Manager. [Read more >>](#)

COO (m/w) / Side Manager Rosenheim branch

puracon is a competent full-service-partner for validation, packaging and logistics of medical technology. In a fast growing global healthcare market they are searching for their manufacturing location in Rosenheim with approx. 6.000 qm incl. 500 qm clean room a site manager. [Read more >>](#)

CFO (m/f) member of the management board

Your area of responsibility will include monitoring of growth, internal and external accounting, controlling, taxes and legal issues. You will co-ordinate contact with investors, banks and auditors. You will also support the company in negotiating strategic business agreements. [Read more >>](#)

Senior Development Engineer (m/f) for Medical Technology

SIS MEDICAL AG is a globally active, innovative and fast-growing medical technology company. To strengthen its research and development department in Frauenfeld, SIS is looking for a solution oriented and creative personality for the position of Senior Development Engineer. [Read more >>](#)

CEO (m/f) Focus: Research and Development, Clinical Affairs and/or Regulatory in medical technology

Do you have experience as a managing director or are you currently in the "second row" and want to make the next step. Experience with project management of product developments, clinical trials, and/or approvals in the cardiovascular environment are desired. You should speak fluent English. [Read more >>](#)

PRESS REVIEW

Selected press starting December 2017

A selection of relevant articles about us and our portfolio companies:

Kleine Zeitung, 4 December 2017: "Großer Schritt für den Grazer Reha-Experten" (A big step for Graz-based rehabilitation experts)

The SHS portfolio company Tyromotion has developed "Omega", a new product for treating the lower extremities. It is particularly focused on improving the walking ability of stroke and paralysis patients. Together with SHS, Tyromotion intends to continue development of its product portfolio and market presence. [Read more >>](#)

Laborpraxis, 8 December 2017: "Multiple Sklerose: Wie NMR und Machine Learning die Diagnostik verbessern können" (Multiple sclerosis: how NMR and machine learning can improve diagnostics)

The journal Laborpraxis examined the collaboration between the SHS portfolio company numares AG and Oxford University. The company and the university are working together on an in-vitro test to improve the diagnosis and treatment of multiple sclerosis. Using nuclear magnetic resonance spectroscopy and machine learning tools, innovative diagnostic tests will be developed to identify metabolic relationships arising from MS. Among other things, Dr. Maximilian Zucker, head of development at numares AG, spoke about the use of artificial intelligence in the development of the test. [Read more >>](#)

Technology Networks, 8 December 2017: "How Software Based Technologies Help Developing Precise and Effective in vitro Diagnostics"

In an exciting interview, Dr. Phillip Pagel, CMO of numares AG, spoke about the limitations of in-vitro diagnostics and how they can be overcome using software based technologies. He also discussed how numares is combining artificial intelligence and nuclear magnetic resonance spectroscopy to develop diagnostic tests. [Read more >>](#)

Investitionsfokus

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| Branche: | Life Sciences (Medizintechnik, Diagnostik, Angewandte Technologien, Industrielle Biotechnologie/Pharma; keine Medikamentenentwicklung) |
| Geographischer Fokus: | Deutschland, Österreich, Schweiz |
| Beteiligungsanlässe: | Wachstumskapital, Eigenkapitalstärkung, MBO/MBI, Gesellschafterwechsel/Nachfolge, M&A-Finanzierung, Spin-Off |
| Unternehmenssituation: | Wachstum/Expansion, Nachfolge/Unternehmensverkauf, Internationalisierung; Betriebsergebnis kann wachstums- oder technologiebedingt auch negativ sein |
| Transaktionswerte und Investitionshöhe: | Transaktionswerte: bis zu 100 Mio. €; Investitionshöhe SHS IV: 2-20 Mio. €, mit befreundeten Co-Investoren bis zu 50 Mio. € |
| Beteiligungsformen: | Mehrheiten oder Minderheiten, Eigenkapital & eigenkapitalähnliche Instrumente |