

limes international



The semester magazine for international partners, students, and parents No. 14, May 2015

- **Theme: Captivating Robotics – A Wide and Influential Field**
Aalen University Receives “Family-Conscious Corporation” Title
University Aids in the Compatibility of Family and Work
Significantly Improved Device Infrastructure of the University
Professors Have Success in Bidding on Equipment Donations from Companies



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Dear limes international Readers,

Aalen University is in an upward trend. This is demonstrated by an increasing number of students – also from abroad, as an ever increasing study opportunity, the growing campus and our leading position in research under the universities of applied sciences. From the strong engagement of our professors and colleagues both are benefiting from our students in the framework of practical doctrine and in new laboratories with modern machinery. The economy in the university also has a competent and reliable co-operation partner. Aalen University participates with great engagement in the development of the region and its companies. Professors and colleagues work on future themes such as mobility, digital networking, renewable energy or health.

In the new issue of our university magazine, we closely highlight the future trend of robotics. In addition, numerous projects are currently in progress in Aalen. They do not all fit on the following pages, but limes international gives exciting and clear insight into work and shows: research (especially in future fields) and a modern, practically oriented doctrine are directly interlinked. Those who research are ahead of the curve in recent findings, integrate them in their lectures and provide students with the latest laboratories and equipment available. We hope you enjoy reading.



Prof. Dr. Gerhard Schneider
Rector of Aalen University





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theme

Captivating Robotics - a Wide and Influential Field

Robots drive, fly, swim, or run on two or more legs, they weld and stack. They work in the factory, are deployed in war and in disaster areas. All of this is already state of the art. Looking at research it becomes clear that robots will soon have control of budgets, cleaning the household, serving the guests of parties or playing football. They support in care and on the surgery table. Even the toy will lead a life of its own. True marvels of technology!

What is so fascinating about robots in contrast to “normal” machines? Machines are optimised for a specific purpose. A packaging machine packs.

It works well and quickly, but only ever that. A robot should, in contrast, be very flexible in all possible duties it can tackle, similar to a person. The impression is not by coincidence, that people always attempt to create with a robot a technical portrait in their own image.

If one follows the rationale of experts, intelligent machines in the future will not only serve as companions that make work easier, but also generate, similarly to people, both practical and intellectual productivity.

Researchers cite self-driving cars, disease diagnoses aid from immense data sets and important documents that are automatically translated as examples for the impending changes in the work world.

Machines have long been regarded as a threat to workers. This one-sided point of view is outdated. Through the technical revolution more job opportunities have been created up until today.

New processes and products create jobs, especially in the middle class. At the same time we must unfortunately break away from a myth: no robot is as flexible as a person. In the end, however, machines had been developed for a (wide) range of applications only.

Robots as Colleagues

Of course, plants with robotic support produce nowadays with almost no human assistance. This does not mean that nobody must work at a production facility anymore. There are always minds behind, for example in maintenance, troubleshooting, or in the supply industry.

The application of robots can also show that other jobs will be needed, and thus create more jobs for people. For example in Trosingen, located in the Black Forest, at the corporation Haas Grinding Machines (Haas Schleifmaschinen).

With the Haas machines, elbow joints or turbine blades for airplanes are ground. It is no longer about the construction of a workplace that works on a high-precision component.

“The customer no longer thinks in machines, he demands of us complete solutions for the production of parts,” expresses Haas owner Dirk Wember. That is to say: The plant should work flexible, exact, and at the same time cost efficient – both day and night.

The customer will thereby seek to possibly have a highly automated production line in his factory, but for Hass that means: “We must have more employees in order to meet the wishes of the customer. And only with innovation can we be sure of our workplaces.”



For the People

More and more people with restricted mobility will be dependent on aids like wheelchairs, hearing aids, or respirators due to the aging of society in the next 40 years.

A prediction shows growth rates of the year 2050 and depending on the kind of disability, up to 78% of patients will be bedridden.

3.6 million additional people will be affected by impaired mobility, according to a study by the consultation organization kon.med.

The reason is the increase of widespread disease such as osteoporosis and arthritis, informed the industrial association Spectaris on Monday before the beginning of the care trade fair Rehacare in Düsseldorf.

Currently there are around 2.2 million patients with restraining illnesses. Large chances are being seen in future medical technology for the use of robotic assistance in care.

There is, for example, a robot that assists a wheelchair user when eating or those in need of care in communication with their family or supports nursing staff. A multifunctional wheelchair, that combines a robotic arm with seven joints, should enable severely disabled people return in their occupations.

Currently machine assistance could also relieve nursing staff of physically difficult work and raise the attractiveness of the nursing profession. Certainly not all robotic assistance is already on the market; frequent “cruxes” are high costs and reliability. Besides this, the gadgetry must be simple to operate.

Humanizing Potential

“The technology has a large humanizing potential,” emphasized Daimler future-researcher Alexander Mankowsky in the Frankfurt General Newspaper (Frankfurter Allgemeinen Zeitung) - and at the same time illuminated autonomous drivers more closely: “In slow traffic, our S-Class is already part autonomous. Apart from public streets, there

are long robotic vehicles, such as ones used in agriculture.” The most important aspect is that the traffic becomes calmer and anticipatory and thereby safe.

“The majority of jams arise because people make mistakes: one drives too fast and must break, then the one behind them breaks as well and traffic comes to a halt. That does not happen with autonomous cars.” At the same time, the gains in time as well as the comfort aspects stand clearly in the foreground.

“We are speaking of dramatic changes to our mobility going along with a higher quality of life.” In any case it will be calmer – the inner-city traffic will become much slower in the coming years says Mankowsky. At the same time many more people will also utilize public means of transportation.

Access routes where people are still stuck in traffic to the next train station could be improved by automatic shuttle services.

This would, for example, allow older people to stay longer in their familiar surroundings, rather than move into a nursing home.

One thing stands fixed: Robots simplify the lives of people. However, they cannot replace your achievements and abilities as no robot can come near the flexibility of a person.

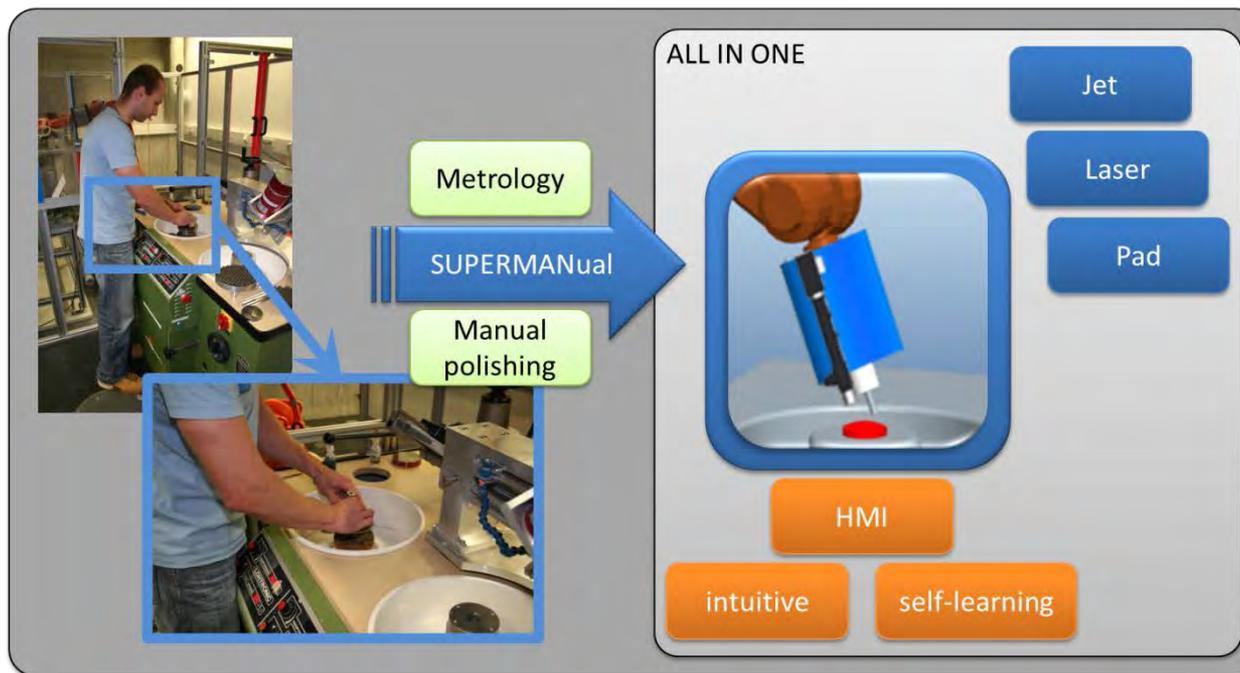
It will still be very long until robotic systems can match or even beat the flexibility, senses, motor activity, intelligence, and experience of

a person. Robots will in the coming years stay specialised: they can cut lawns quite well, iron shirts or correct exams they are not (yet) familiar with.

The future theme of robotics is so multifaceted, there are many prospects that the technology opens up. There is also still much to do.

Professors at Aalen University also work on diverse projects, whether the area of industrial robots, with automatic systems, so-called humanoid robots or service robots.

- **Monika Theiss with Prof. Dr. Arif Kazi, Prof. Dr. Matthias Haag, Prof. Dr. Ulrich Klauck, Prof. Dr. Rainer Börret, Prof. Dr. Stefan Hörmann**



Above: Intuitive Person-Robot interface controls of the robot finish.

Left: Research vision of the cooperation ‚Mensch-Roboter‘ on a complex assembly

Robots and People Work Successfully with Each Other

We cast a glance in a factory in the sector of car construction: Fully automatic robots weld car bodies. No person is present to see this. One can absolutely get at the thought that the robots in the industry have replaced humans in this situation.

Are there any at all industrial mass production sectors still dominated by manual labour? Even if it is not seen at first glance: In the area of tool manufacturing, 30 to 50 percent of the production

time of the master moulds of the die cast moulding is dominated by manual labour.

One can find many applications in the middle die cast mould compounded with plastic products, for example as PET bottles for drinks, as packaging of any kind, as decoration and covers for cars, and also as fenders and roof systems in cars.

The master moulds for all of these parts are still today processed to 90% completion by hand, that is, to the desired gloss polish.

Joint pain in elbows and shoulders are long term consequences which employees in companies complain about the most that carry out these week-long polishes. The applied research in the area of industrial robots now has consolidated goals to relieve the people that work in these areas of the dangers to health, and work to achieve coexistence of humans and robots.

Here is a project of the Centre for Optical Technology (ZOT): The research team of Prof. Dr. Rainer Börret was successful with proposal “Symplexity” under the guidance of the Fraunhofer Institutes ILT and IPT.

The EU proposal in the Programme Horizon 2020 with industries and university partners from Greece, Great Britain, Italy, Poland, and Sweden was appraised positively and recommended for the promotion. In this moment a cooperation agreement between the partners was voted on.

The contribution of ZOT built on the previous research project on the theme of robotic lustre of the centre.

Among other things, ZOT-colleague Dr. Marco Speich has, in the framework of his PhD-thesis work, developed a polishing process for steel master moulds (see page 34). This happened in collaboration with the company UVEX: The results come from use with sport and protective glasses.

The project “Symplexity” will now have to focus on people and robots simultaneously working on the same section. The robots will advance time-consuming, rough, and drawn-out work, whereas people will concentrate on more complex intricacies being thus relieved of joint-damaging activities.

This demands a completely new kind of symbiotic person-machine cooperation that will be developed within the framework of this research project by its partners and should be applied, in the end, by the industry partners. True to the motto: Not a substitute, but a cooperation.

■ **Prof. Dr. Rainer Börret**
Dean of of the School of Optics & Mechatronics, Head of the Center for Optical Technology (ZOT)

Interdisciplinary Preparations for the Future

What makes a robot into an autonomous robot? What knowledge must one have, if one wants to develop an autonomous robot? What knowledge is required to develop applications with autonomous robots? One must answer all these questions if one wants to educate students in this area.

From a search on the internet, it will quickly become clear that the robotics is not separate and enclosed from other scientific disciplines. It is rather profoundly interdisciplinary and exists (mostly) on the cooperation between mechanics, electronics and computer science.

Depending on whether one would like to build such systems or first implement problem solving or applications with them, one or the other of these disciplines is in the foreground.

The attempt at an answer of the first of the above questions could be that the capability of a mobile robot to move in its own self-dependent environment and to be able to act in it comes from what makes a simple robot an autonomous one.

For this purpose a robot must already be appointed with numerous technologies and also be appropriately programmed that its autonomous behaviour can be exhibited.

There are already many applications fields today in which a robot accomplishes amazing accomplishments. But even the closer look at such a simple task such as fixing a cup of coffee in a cafeteria shows how difficult these jobs are for a machine, however simple it appears for us as people.

Firstly, the robot must be able to understand that it should fix me a cup of coffee. In addition it must be able to communicate with me. It must then make a plan of how the task can be broken down into smaller steps or actions. This includes, for example, that it knows at the beginning where the coffee is located. One designates this as self-localisation. In order to plan the way to the cafeteria, the robot needs a model for its surroundings, such as a map. With the help of the map and suitable planning algorithm, it can now plan the most favourable way to the cafeteria.

On the way there it must constantly be aware of its position and be familiar with the recorded map, as well as with unexpected obstacles, for example be able to react to pedestrians.

The solutions for all of these functions of the long-term oriented action of infrastructure planning to respond quickly to unexpected events are summarized in specific software architectures in computer science.

Even for the already mentioned tasks, far more technology is needed in addition to the software. For communication with me the robot requires a microphone and speakers. Alternatively, communication can of course take place with a monitor and keyboard as well, which is the case of robotics in everyday life, but it is rather cumbersome. For self-localisation and perception of obstacles a robot depends on a laser scanner, ultrasound sensors, or cameras.

On its way to the cafeteria, the robot comes up against many other problems. As my office is located on the upper floor and it cannot climb up the stairs, it must take the elevator. In addition, it must be able to go through the elevator at the push of a button, it must be in the position to distinguish between open and closed doors, it must be able to press the button for the correct floor in the elevator and it must recognize when the elevator has reached this floor.



Robotics research platform Pioneer 3DX with sensors for image acquisition and navigation: 3D Camera Xbox Kinect with RGB-Camera (above), laser scanner (in blue), ring with ultrasound-distance-sensors (6 sensors are visible) and contact sensors for emergency deactivation (very bottom).

Then the way to the cafeteria is not too difficult, apart from the many students that the robot must occasionally dodge. It must, however, deviate a little every time from its original path and then correct itself appropriately. Once it has arrived in the cafeteria, it has to solve a difficult communication task for a machine: it must order the coffee and ask for the price.

Another task is to have the robot grasp the coffee mug that it does not crushed, however still gripped tightly enough that it holds it in its robot hand is not easy to solve. Then on the way back the same tasks present themselves as on the way to the cafeteria. Looking at the tasks that the robot has to solve once more and attempting to assign them to different knowledge or teaching areas, one comes at least partly to answer the other two questions posed at the beginning.

The overall behaviour of the robots that act autonomously or even appear intelligent will cover fields of teaching like “Planning and Decision Making”, “Robot Control Architecture”, or “Artificial Intelligence”. Since it perceives its environment through cameras or other sensors, the areas of “Computer Sight”, “Sensor Data Reduction”, or as a basis in addition to “Signal Reduction” come into play.

The ability to learn from data and thereby be able to adapt to its environment will convey the subject area “Machine Learning”.

Even if it is not elaborated here today, dealing with uncertainty plays a large role. In contrast to ten or fifteen years ago, knowledge has been discovered in that nondeterministic actions result for a robot were not determined by an exactly familiar state of succession, but of different states, with different probabilities of occurrences being possible. In this respect, it is also an intermediation of solid understanding in the theory of probability.

Employment with autonomous mobile robots is interesting and worthwhile. As mentioned in the main article at the beginning of the magazine, robotics is seen as a technology with very large influence on the future work world and also on social life. Aalen University has many experts in the important discipline of robotics. Bundling these responsibilities has prepared the university in doctrine and research for these future domains.

■ **Prof. Dr. Ulrich Klauck**
Dean of Computer Science,
Head of the Laboratory for Image Processing and Pattern Recognition

Multi-Faceted Industrial Robots

When General Motors provided the first service robot in 1961, not many would have guessed the socio-economic changes in this institution that were to come. Defined as a freely programmable motion machines (VDI 2860), the machines now process logistics about fabrication, perform reliable multi-class assembly through packaging, and also quality-oriented and safe service – they are universal, flexible and even by “occasional use” economically feasible. Attributes which let climb sales figures world-wide – an end is not currently in sight.

With a wink not only to the young engineer, it should be emphasized that the basis for this revolutionary breakthrough (the nomenclature is true to the industry 3.0) was and is mathematical fundamentals and progress in numerically guided control and regulation technology. These were coupled with high-performance materials, sensor technology, drive technology and efficient machine elements, and are what make robotics possible.

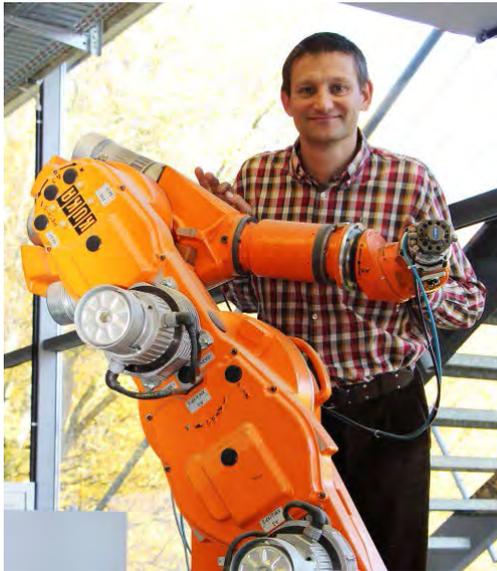
In addition, outstanding construction as well as commercial production technology protects workplaces in Europe. Knowledge areas which are communicated in practice at our university!

Why is it that in almost all industrial areas that include the use of robotics advance either naturally or eagerly? It is clear that people are not suitable for monotonized, assembly line-like work; they make mistakes, endanger the process cycle, and often themselves.

Industrial robots conduct such work tirelessly and are especially reliable. Such documented quality arguments for the use of robots even in countries with lower levels of wage. However, to improve the quality and reliability of the automated handling process, extensive sensor technology is now being used. The appropriate controls recognize mistakes and acts with goals of being able to continue the stable process.

State of the art commanding, including web links, allows quick calculation and adaptation. Simulation environments toward unerring planning and integration set safe economic input.

Articulated or Scara robots are especially universally applicable and therefore configured as such. They are scaled in sizes that are manufactured in large quantities. In the meantime, they are already industrial quality at the cost of 20,000 Euros. In addition, there is also good used equipment.



Alert, flexible, tireless: industrial robotics

Industrial robots can rightly claim to be flexible and futureproof, and without an additional cost. Identical robots support the development of medicine, can remove the die forgings from a forge, or stack cans of dog food.

Not many machines can exhibit so many different talents. In close succession, researchers find and solve increasingly new and fascinating tasks for robots. Are you pleasantly smiling? Robots are, in the meantime, milking cows – and who would have thought: the latter find it great; because now they go to the milking on their own, and rightly so. The basis is a completely normal industrial robot.

New applications are also found through the mobilization of robots. Whether supporting a forklift or on a multi-directional platform, they are always significant in logistics.

The basis is there again completely normal industrial robots that have been ported to the field of service robotics. It is not uncommon that they share the workplace with people and grasp parts directly from the crate.

Would you like another example of the increasing tasks of robots? There are safety devices that make common “guard fences” between people and robots unnecessary. Pleasure seekers have their friends strap gyrating robots to their helmets.

In industry, however, the resolution of separate workspaces opens vast opportunities. Many a mindless robot can simply make better. Supposedly, simplicity makes large difficulties for them. Ergo, the work will split but that is subject to locality or time separation.

In particular the comparison with ants that carry multiple times their body weight, industrial robots pale in comparison, and can only carry a dead weight to payload ration of 10:1, aptly speaking of the Anglo-Saxon “payload”.

Progress in light-weight construction, particularly through modern high-performance materials and computer based topological optimization, leads to significant improvement. Also until now, the common so-called open mechanism for the joint assembly will set a constant in questions.

Novel robot configurations develop with impressive values, namely with up to ten times the acceleration of gravity. All in all energy as well as costs are saved and great applications are opened. The next goal of industrial robot applications is construction and the building industry.

■ **Prof. Dr. Matthias Haag**
Mechanical Engineering / Production and Management,
Head of Robotics Lab

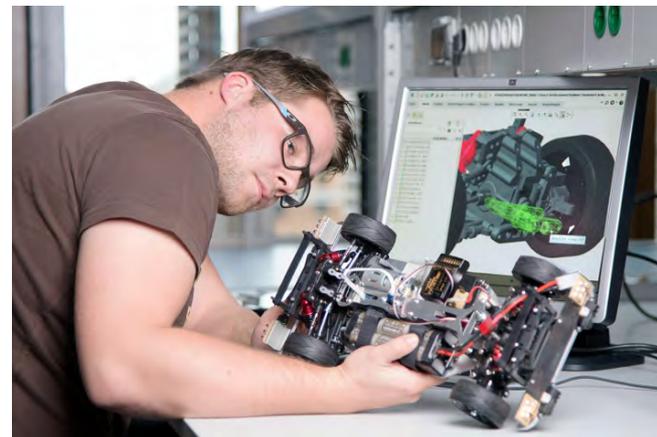
The Carolo-Cup Firmly in Sight

As if by magic, they buzz about the pavement – always ready without strange operations, they follow the road. In doing so, they tolerate the lack of road markings and drive around hindrances. They are named affectionately as “sparrows” or “Carolinchen” and they are the stars of the Carolo-Cup – the competition for automatic model cars that takes place yearly in Brunswick.

The competition is not just the fact that students put their technical ability of development of an automatic car to the test, but also about teamwork and a great amount of fun at the implementation of common goals.

The appointment of Prof. Dr. Stefan Hörmann in the School of Optics and Mechatronics in early 2014 was so to say the seed for participation of Aalen University in the Carolo-Cup. Infected by his enthusiasm, a dauntless team of students of the School set out towards the goal of entering the University’s first automatic car in the Carolo-Cup in February 2015.

“The success of the programming can be directly seen if the car is not offended, which has been great fun for me,” reported Tobias Joswig, first semester Master student in engineering pedagogics, with bright eyes. In his Bachelor thesis he had created a driving platform that he now develops in his free time. Appointed with efficient micro processing controls and distance sensors, it can already follow walls automatically and avoid hindrances. “Participation in a real competition and the opportunity to exchange ideas with others about their own interests,” is the motivation for Tobias Joswig and two mechatronics students to promote the project alongside their studies.



Tim Pfitzer plans the fitting of an incremental encoder

“Automatic robotics is a super combination of all the sub-disciplines of mechatronics. For us people driving on a street is a natural activity. The transfer to an automatic model car that completely imports its own logic in the form of software indeed represents a proper challenge,” Christoph Marx and Steffen Kümmerle sum up.

Both students of the Mechatronic / Systems Engineering Master programme work in the framework of a project for the implementation of road recognition, including a motion model for following the course of the road. “Here we work on a seminal technology. The knowledge will make it easier for us after graduation to gain a foothold in professional life and to make our hobby into an occupation,” agreed the three Master students Marcel Beckbissinger, Achim Majer, and Simon Zell. In their project they have the work of hindrance detection and avoidance. In order to meet the growing student interest, as well as taking his own research interest into account, Professor Hörmann had precisely renamed his laboratory “Laboratory for Mobile Robot Systems”.

His lecture on mobile robotic systems is offered since this summer semester in the Mechatronics / Systems Engineering study programme. “I would like to offer interested students room to experience this very promising topic,” said Hörmann. Although he explicitly includes students of other fields, such as Informatics, Electrical Engineering, and Mechanical Engineering.

Mobile robotic systems that move themselves autonomously are interesting for a variety of application areas. Parallel to technology in the automobile industry, the development of an autonomously driven car is obvious. The logistics of the familiar driverless transportation system are already equipped with their own intelligence.



Johannes Stimmer, Prof. Dr. Stefan Hörmann and Tim Pfitzer during a software test

Also robots have already been introduced in the household: They clean floors or cut the lawn in the garden. Another, lesser known, area of application is agriculture, struggling with the problem of finding personnel for the exhausting work in the fields: mobile robotic systems could adopt future multifaceted tasks including sowing, fertilization and control of plant growth, weed control, and harvests.

And this is much more sustainable and friendlier than with today's heavy machinery. However, mobile robotic systems will not be sufficiently "intelligent" for many years to come in order to autonomously navigate in an unknown environment.

People must have the possibility, if necessary, to take control of the controls of these mobile systems when necessary – preferably without having to repair something every time.

"The interaction between people and mobile robotic systems must be intuitive in a high degree," claims Dr. Arif Kazi, also a Professor of Mechatronics, and adds "In robotics, the phrase 'telepresence' has become naturalized in the following context – people have the impression that every job will be arranged for

robotics. 'Shared Autonomy' describes, in contrast, the meaningful subdivision of control between people and autonomous functions. The success of mobile robotic systems will depend on the relevance of meaningful and flexible divisions of power between people and machines."

Mobility has many faces: while the development of farm vehicles is based mostly on wheels, Mother Nature had developed the concept of legs for rough terrain (either by two, four, six or more per creature). Next to robots that move themselves on the ground, there are also such robots that fly, swim, or dive. In addition to the autonomy and intelligence of mobile robotic systems remain many diverse mechatronic challenges. For the students of Aalen University this means that for many years to come, this exciting theme of the different engineering science fields can advance together. the future."

- **Prof. Dr. Stefan Hörmann** Mechatronics,
Head of the Laboratory for Mobile Robotic Systems
- **Prof. Dr. Arif Kazi** Mechatronics,
Head of Actuating Systems, Sensors, and System Dynamics

Additional Attractive Study Offers

Aalen University offers new study programmes since the 2014/2015 winter semester: the Bachelor programme 'Business Informatics', the consecutive Master programme in 'Business Informatics', the part time Master programme in 'Business Informatics', plus both of the Master programmes in 'Technology Management' and 'Light-Weight Construction'. Furthermore, the Master programme 'Efficient Energy Systems' will be offered starting with the summer semester 2015.

"State of the art" means "business as usual" for the Business Informatics programme. Thus, the syllabi in the area of Business Informatics has been updated, so that the students of Information Systems at Aalen University will continue to bring with them the very best requirements for entry into the business world.

New affiliated subjects are, for example, cloud computing, mobile applications, E-commerce, and the use of social media.

Since the beginning of the 2014/2015 winter semester, three new study programmes in the School of Management & Business Sciences have been offered. The new Bachelor study programme in Business Informatics distinguishes itself from all others through the dual module in informatics-training, which facilitates a large proportion on praxis orientation and well-grounded training in the areas of business informatics, business economics, and informatics. In the new consecutive Master programme in business informatics "data scientists" will be trained that are outstandingly qualified and in a position to manage "the currency of the 21st century" with the help of new analysis instruments.

The third study offer of business informatics centres itself on the working person that would like to prepare for their next career change within the frame of a part time Master course. The study programme combines the pros of in-person, online, and distance learning for the transfer of knowledge.

The new Master programme in Technology Management prepares students through the union of technology and economy ideal to later occupations in the areas of research and development as well as production and executive positions. With the two fields of study, "Production and Management" as well as "Development and Management", students are able to ideally adapt their Master studies to their career planning.

The study programme Light-Weight Construction with the degree "Master of Science" conveys student's skills and knowledge for the development and production of material efficient, energy efficient and sustainable structural elements. Due to the scarcity of resources, these abilities are key skills for the future. Lightweight specialists are sought-after employees in industry and research. With the summer semester 2015 the Master programme "Efficient Energy Systems" has started. This study programme with the degree "Master of Engineering" is an interdisciplinary and cross-faculty study offer.

The graduates will be qualified building on their technical (for example, natural scientific embossed Bachelor completion), their know-how both to expand interdisciplinary knowledge and to deepen technical skills. Knowledge will be disclosed as power engineering bound with the subjects of mechanical engineering, electrical engineering, chemistry, materials science, and surface technology, as well as ecological and economic fundamentals. The graduates will be able to understand cause and effect in complex systems and networked thinking. A wide offer on elective modules allows alignment of individual areas of concentration. Through a close collaboration with professionals of the industry, hot topics are always examined. In addition to this, there exists the possibility of direct work on a multiplicity of applied research projects in the framework of project or Master degree work both at the university and in industry. Besides this, Aalen University as the strongest university of applied sciences in research in Baden-Württemberg gladly supports their junior researchers in joining PhD programmes.

■ [dw/zwi/sö/kat](#)

New Assembly & Lecture Hall at the Beethoven Street Campus

With the beginning of the 2014/2015 winter semester, the new assembly and lecture hall of the Beethoven Street area of campus of Aalen University was commissioned.

On October 2nd, Rector Prof. Dr. Gerhard Schneider and Claus Schüßler, head of "Vermögen und Bau Baden-Württemberg", signed the official relinquishment for the new building.

On October 6th, the first lesson in the lecture hall of the building took place. On the very same day, the assembly hall was commissioned with an opening senate session and the vote of Prof. Dr. Harald Riegen towards a new Vice Rector of the university as its first official function.

The first large presentation in the building and on the new grounds was the second Aalen Children's Fair on the 12th of October. On November 15th, the graduation party of the university took place for the first time in the new assembly hall.

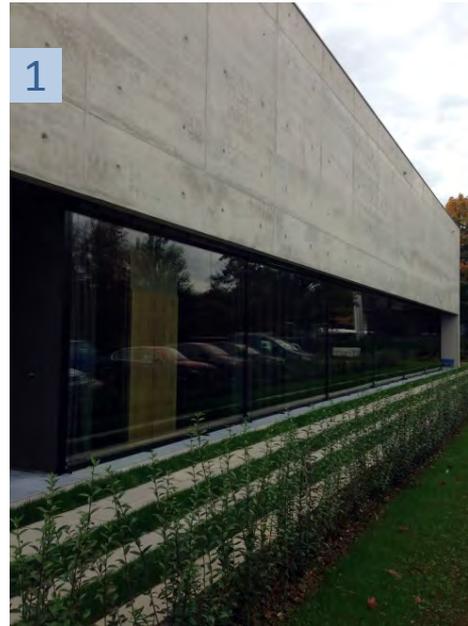


Photo 1: Simple and beautiful: the east-face of the new Assembly Hall. The building was built in form and choice of materials from a successful ensemble with the 46 year old Behnisch Construction.



Photo 2: Rector Prof. Dr. Gerhard Schneider and Claus Schüßler, head of ,Vermögen und Bau Baden-Württemberg in Schwäbisch Gmünd, at the signing of the formal relinquishment of the assembly and lecture hall building in the new Assembly Hall.

On the 27th of November, the official opening celebration of the assembly and lecture hall occurred with the presence of Rolf Schumacher, ministerial director in the Ministry for Finances and Economy in Baden-Württemberg.

Next to the new (divisible) assembly hall, there are also two lecture halls with space up to 180 people and two lecture halls with space for 90 people. The larger lecture hall in the basement can at the same time also be divided into two smaller lecture halls. While the lecture halls are already being used for lectures, the assembly hall is reserved for larger presentations.

The previous assembly hall in the Beethoven Street building (room 133) in the meanwhile will be redefined with the beginning of lectures for the 2014/2015 winter semester as a lecture hall. There, lectures will now take place predominantly.



Photo 3: The Northwest view of the new building including the courtyard.

Photo 4: High ceilings, ageless design – the staircase of the new building

Photo 5: At the southern face of the building there are two lecture halls for up to 180 people and two for up to 90 people. The largest hall in the basement is separable.

In the new assembly hall, there are seats for 600 people. If the foyer is also used, the maximum number of people that can be seated is 720. For breaks and exam preparation, areas of studying and relaxation are available to students.

Overall the new building, in form and material selection, constitutes a successful ensemble with the nearby 46 year old Behnisch building.

The assembly and lecture halls wait not only on an ageless design. It also houses the most modern media equipment that comes from the development association that sponsors the university.

This allows, for example, the live broadcast of presentations that take place in the assembly hall on monitors in the foyer or in the lecture hall.

■ **Heiko Buczinski**
Department of Project Management and Communication



Photo 6: The previous assembly hall in the Beethoven street building will be renamed the “Audimax” at the beginning of the Winter Semester 2014/15.

Photo 7: The inscription where the operating hours are displayed



Photo 8: On October 6, 2015 the first lessons took place in the new lecture and assembly halls.

International Accounting on Site

The “Accounting Practice Series” (Praxisreihe Rechnungslegung) has already taken place, this time at Aalen University. This top-class practice orientated event dealt with collective activities of DHBW in Stuttgart, the HfWU Nürtingen-Geislingen, and Aalen University.

The goal of this unique practice oriented event is the exchange of themes that are of central importance in the accounting practice.

The speeches this year concentrated on select themes of the International Financial Reporting Standards (IFRS). These international accounting rules are particularly relevant for international operating corporations gaining more and more in periods of the increasing world-wide networking for middle-class relevance.

The head of the series of lectures, Prof. Dr. Reinhard Heyd of the study programme International Business, welcomed a large audience at the presentation.



Prof. Dr. Reinhard Heyd (International Business) and consultant Dr. Werner Gleißner (Managing Committee FutureValue Group AG)

Each of the speeches was accompany by an active discussion of the consultants and audience, who also provided attending students an interesting insight into the problem of accounting in business practice. After the accounting practice series at Aalen University was a complete success, there will now be a twelfth presentation series at the university HfWU Nürtingen-Geislingen next year.

■ js

Aalen is Founding Member of the Sales Engineers Network AASE

Together with 13 universities from Europe in the study programme International Sales Management and Technology an academic combination for sales engineering, the Academic Association of Sales Engineering (AASE), was formed. The goal of the union is to work more closely in the areas of teaching, research and public relations to establish and develop the profession of sales engineering.

Members of the cooperation are exclusively university representatives who are active in the teaching of technical sales. Thus, the AASE is consciously demarcating from marketing oriented sales programmes. Dr. Jobst Görne, professor in International Sales Management and Technology, was chosen as the head of the task force in research. “The participants of the research group agreed that the area of ‘Sales Engineering’ must be remoulded academically,” stressed Görne. Thomas Röhr, Professor the School of Business Engineering in Belfort, France, heads the task force education: Here, new didactic techniques are thought to be developed for sales engineering study programmes.

With the creation of the Bachelor study programme “International Sales Management and Technology,

Aalen has become one of the first universities to offer a sales specific programme. Since last year, the technically adapted Master study programme “Leadership in Industrial Sales and Technology” has been offered. “Here practical engineers are trained for the distribution of technical systems,” explains Ludger Schneider-Störmann, Professor at Aschaffenburg University and president of the newly founded cooperation. A panel study arose from the first collective publication of the AASE. It reflects the situation of sales engineering in corporations from Germany, Austria, and Switzerland.

Prof. Dr. Jobst Görne (left) and Prof. Dr. Arnd Borgmeier (right) with the AASE colleagues



■ gö/kat

Current Research News

IMFAA on the Metallography Meeting in Leoben

The 14th International Metallography Meeting took place this year at the Montan University in Leoben, Austria. Once again, the focus was on new methods for microstructure characterization of different materials such as metal, ceramics as well as laminated plastics and composite materials. The Institute for Materials Research at Aalen University (IMFAA) presented current research results in four lectures.

Tim Schubert spoke on the theme of analysis in 3D metal-printing manufactured construction components, while Sandra Gorse spoke on aging phenomena in lithium-ion batteries.

Results of the ZAFH combination SPANTEC-light cutting development of light-weight materials were presented by Dr. Lisa Weissmayer as well as Dr. Dieter Meinhard. Also, Prof. Dr. Gerhard Schneider has assumed the title of president of the Technical Committee for Materialography of the German Association for Material Science for the next four years. **Contact: timo.bernthaler@hs-aalen.de**



The participants of the IMFAA at the Metallography meeting in Leoben

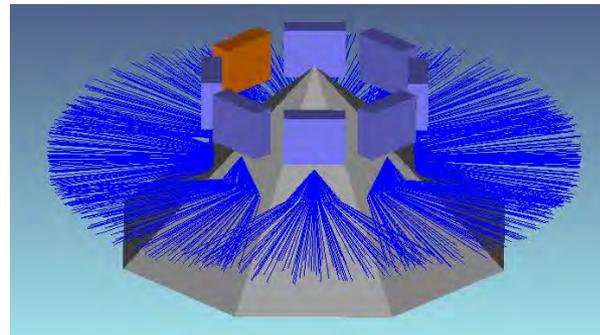
Current Research News

Millions of Funding from Federal Programme

In the last call for proposals of the Federal Programme of Research at Universities of Applied Sciences were, like in the previous year, three successful draft proposals from Aalen. And this is after the requirements for an application were tightened again. The focus of the programme is on the qualification of engineers within the frame of innovative research and development projects in cooperation with industry and partners from the sciences.

The recently approved programme of both Professors Dr. Dagmar Goll and Dr. Gerhard Schneider of the IMFAA is running since October 2014. In the four year project with the acronym PRISMA, the properties of custom made soft magnetic materials should become better. These should be highly efficient in use with electric motors and generators in the future.

The open theme programme “FHprofUnt” promotes joint research projects of professors in their first three years after their appointment. Within this programme the two research projects of Aalen professors Dr. Andreas Heinrich and Dr. Timo Sörgel have started this year. The project “ImiSens” of Professor Heinrich will develop new customizable miniaturized sensors for the optic-tactile form measuring technique.

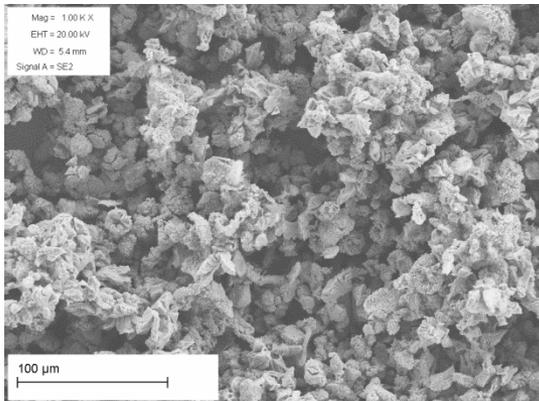


Optical design of a manufactured 3D sensor

Current Research News

Prof. Dr. Christian Faber of Landshut University and the corporations Carl Zeiss and Micro-Epsilon participate in this three year network research project. In the project “GaLiLeA” of Dr. Timo Sörgel aiming at electroforming hybrid lithium-alloy anodes, a novel structure is to be implemented which improves the capacity, cycle stability, and energy storage density in lithium and lithium/sulphur batteries.

Novel cathode structure makes batteries more efficient (Project Professor Sörgel)



LALS 2014: Biophotonics – The World as a Guest

The organisation of an international congress is a large challenge. Together with Professors Dr. Raimund Hibst and Dr. Rudolf Steiner of the Institute for Laser Technology in Medicine and Metrology at Ulm University, Prof. Dr. Herbert Schneckenburger organised the international conference “Laser Applications in Life Sciences” (LALS 2014) for the first time. Around 300 participants, and under 140 speakers from 35 countries, met in Edwin-Scharff-Haus in New Ulm. The organisation put an academic, high-quality conference programme to all areas of bio-medical optics and bio-photonics on its feet. In addition to the extensive academic exchange was to make personal contact. So conference participants also visited Aalen University. Professor Schneckenburger sums up: “The months of overtime in preparation were rewarded with many interesting encounters and a worldwide thank you.”



Current Research News

New Project on Renewable Energy

The national energy strategy projects that the amount of renewable energy will be raised from today, at 16 percent, up to 80 percent in the year 2050. This demands the development of new technologies for production, transportation, and storage of energy. As part of the Central Innovation Programme for SMEs (ZIM) project proposals from Professors Dr. Martina Hofmann and Dr. Christian Neusüß that can contribute to addressing the energy transition have now been approved. This is to investigate whether or not synergy arises through the combination of purification and biogas plants that guide increases in efficiency concerning use of energy and cost effectiveness. Professor Hofmann developed resource saving components for biogas plants, while Professor Neusüß analysed the biological methanation and the reduction of possible pollutants.

The application took place within the frame of the cooperation network biomastec (coordination: EurA-Consult AG Ellwangen) that would like to develop the new technologies for the efficient use of biomass.

Successful DFG-Project Continued

The DFG-Project of Prof. Dr. Thomas Thierauf of the School of Electronics & Computer Science about the theme of “Derandomisation with Polynomial Identity Tests and the Isolation Lemma” will be funded through the German Research Community (DFG) for 3 further years. The project is carried out in the framework of the programme “Cooperation with Developing Countries”. The cooperation partner is Prof. Dr. Manindra Agrawal of the Indian Institute of Technology in Kanpur, India. The goal of the project is to find efficient deterministic methods for probabilistic algorithms that will be used for current polynomial null testing, explains Professor Thierauf.

Current Research News

PhD for Marco Speich of ZOT

Dr. Marco Speich has finished his doctoral studies at the Center for Optical Technology (Zentrum für Optische Technologien; ZOT). His doctoral work was overseen by Prof. Dr. Rainer Börret and Prof. Dr. David K. Harrison of Glasgow Caledonian University, Scotland.

In Speichs work, a new semi-automatic method is described by which optical quality steel can be polished. The research project runs together with the company UVEX and the University of Saarland and is supported by the Bavarian Research Foundation.



Dr. Marco Speich (ZOT) with dissertation and an optical quality polished steel part-

people

Prof. Dr. Michael
Kaschke



Prof. Dr. Michael Kaschke Appointed to National Scientific Council

Prof. Dr. Michael Kaschke, chairman of the Board of Governors of Aalen University and the Management Board of Carl Zeiss AG, has been appointed retroactively, starting February 1st 2014, by the Federal President of Germany as a new member on the National Scientific Council.

The appointment occurred due to a joint proposal of the Federal Government and the Governments of the German Federal States.

The National Scientific Council is an important scientific and political advisory body in Germany. It

advises the Federal Government and the Governments of the Federal States in regards to questions and structural development of science, research and of higher education and contributes to the assurance of international competitiveness of science in Germany.

“For me it is a great honour, now to be able to advise, as a member of the National Scientific Council, the development of science, research, and education in Germany.”

■ cz/rs

Three Questions with Prof. Dr. Dagmar Goll

Since this winter semester, Dr. Dagmar Goll has been the chair of the project “Physics of Magnetic Materials” of the Mechanical and Materials Engineering Departments, sponsored by Robert Bosch GmbH. After many years of active research work on the area of magnetic materials at the Max-Planck-Institute for Metal Research in Stuttgart, at the Center of Magnetic Recording San Diego and since 2010 at the Institute for Materials Research Aalen (IMFAA), Dagmar Goll will now be active in the teaching at Aalen University.



For many years you have been active as the head of the “Magnetic Materials” in the IMFAA. Are you happy with your new tasks in teaching?

In the past I have already taken on tasks in teaching, for example at Stuttgart University as an assistant professor, at Aalen University for foreign students as well as in academies for continuing education. I have therefore gladly accepted the call of professorship, because it opens up the good possibilities that my research expertise and international contacts in industry and research institutes now yields to students. I would like the students to first embrace current questions of applied research and to introduce them later to activities in research and development of industrial enterprises. The lessons offered by me are “Theory of Elasticity”, “Functional Materials for Primary and Useful Energy”, and “Advanced Materials” as well as suitable material science internships that illustrate contributions to materials engineering that are essential to future issues of humanity. A well-informed physical and material scientific knowledge base combined with insight in possible application errors forms the premise that the students in their later professional life are successful in the area of materials and can give their optimal input in creative systems.

In which projects are you currently active in?

Together with a team of doctoral candidates, scientific colleagues and students, Prof. Schneider and I are researching the area of magnetic materials for the successful advancement for a high-power conservation of energy at the IMFAA. High performance magnets in particular possess large innovative potential in the areas of resource-saving mobility (drive trains of electric motors) and renewable energy (generators of wind engines). For a sustainable use of the magnets in these areas, it is important to better understand their inner workings, the so-called microstructure, and the results from properties of tailor made materials which assure quality even more.

We are searching for others by means of developed high-throughput methods, specifically to “gold”, that is entirely new magnetic materials. Therefore, we have been able to build a good infrastructure in the last few years. This allows, in addition to the synthesis of laboratory magnets and their comprehensive characterization, evaluation and construction at a high academic level. The research projects are exclusively externally funded and were promoted by BMBF, AiF, and BW-EFRE (delivery volume: 2.35 million Euros since 2010).

The IMFAA closely works on the project together with industry partners (such as Robert Bosch GmbH, automobile industry, and magnet industry) and research partners (such as KIT Karlsruhe, MPI Intelligent Systems, Bochum University and Darmstadt, Fraunhofer Freiburg).

How are students able to take advantage from your research?

In addition to the attendance of lectures and internships the students are invited to participate actively in the IMFAA research projects. The admittance to these projects is available at any time, and can even act as a final project or doctoral work. Our network of international industrial enterprises and research institutions facilitates especially interested students that would gladly have an internship semester both in Germany and abroad.

Through the active collaboration of these students in the research projects of magnetic materials, students receive immediate practical experience in magnet manufacturing and potential operations in magnetic materials that facilitates their entrance into the professional world.

■ Katja Nowtny

Demographic Change and Roles of Optometry

The aging of our society, also designated as demographic change, has a direct and strong influence on the activities and occupational profile of optometrists. In the demographic pyramid, the number of people over sixty years old is constantly rising, and as a result, the number of people with visual impairments and eye disease has increased.

At the same time, there are always fewer and fewer eye doctors that are willing to settle as specialists outside of large cities. Successful optometrists position themselves as competent contacts and care for those customers that not only receive perfect glasses and/or the ideal contact lenses, but also recognize eye disease. As a result, the optometrist will be the initial contact for all seeing problems allowing for an early detection of a slowly entering loss of sight caused by old age. The concluding diagnoses and therapy remain up to the ophthalmologist.

One possibility, according to qualifications, is an in-service training study programme. This possibility opens up, for example, Aalen University with the part time Master's programme M. Sc. in Vision Science and Business (Optometry).

There professors of renowned American Colleges of Optometry and with practical experience teach the students. A very high goal of the Master's students is to be able to better advise their customers with the knowledge acquired while in the Master's programme.

Karl Amon, member of the scientific advisory board of the study programmes, cannot see any conflict with the medical professions. "Quite the contrary," says Amon. The well-trained optometrists will achieve a higher degree of targeted secondary health care: "That means that the eye doctors first are appreciative, because they are then able to concentrate more on surgical and medicinal therapy." The largest benefit of future-oriented direction of the profession has the general population. Long-term area-wide and comprehensive primary health care will thereby be provided in the sectors of eye disease and visual impairment.

■ Prof. Dr. Anna Nagl
Dean of Studies, MSc. In Vision Science & Business - Optometry

Study Abroad Week Drove MBA Students to St. Petersburg

More than 30 students and alumni of the in-service training MBA programme of the Graduate School Ostwürttemberg explored the Russian metropolis of St. Petersburg for a week. In addition to the daily courses at the Polytechnic University, the students of the General Management study programme were able to make contacts with corporations and take a visit to the House of German Industry.

In the previous year, the programme took place at the Hungarian capital city of Budapest, and this time the study abroad week of the Graduate School Ostwürttemberg travelled to St. Petersburg. The study trip took place in the framework of the course “Regional Knowledge – East and Middle Europe”.

The study trip received both courses and an insight in the culture and history as well as economic features and current development of the country. The students received a first look at the tightly entangled relationships of German and Russian corporations in the House of German Industry.

Likewise revealing and fascinating was the visit of the firm “Balitka”. The brewery is the largest brewery organisation in the Russian Federation and markets their beer in 38 countries around the world. The engineers in the group were impressed by the highly-modern production hall. The MBA students that lived in the student dormitory on the grounds of the university received a special authentic look at student life at a university with more than 30,000 students and were shown the impressive beauty of the city during the “White Nights”, in which the sun barely sank.

■ gso



international



All New Student Mobility – with Implications

With the new generation of the Erasmus Programme ERASMUS+ (“Erasmus Plus”) for the years 2014 through 2020, the flagship programme for student mobility in Europe, a rethinking of the theme must take place in the heads of all involved parties. And indeed it is regardless whether from the perspective of the student or the mentoring staff and professors. This begins with the planning of mobility and goes up to the care of the students. This affects not only mobility with European universities, but also ones outside of Europe as many countries outside of Europe may become involved in the ERASMUS+ programme.

In addition to addressing some of the administrative and financial challenges for the international offices of the involved universities, the new ERASMUS+ Programme requires, for example, new application deadlines for the students. Due to changes in the budget terms there is now at Aalen University one main application deadline for students wishing to study abroad at a partner university: both inside and outside of Europe (here with few exceptions): February 1st for a desired exchange in the subsequent university year. On February 1st, 2015, for example, students had to apply for an exchange semester in the Winter Semester 2015/2016, but also for one in the Summer Semester 2016.

In addition there will always be two additional dates to assign free places that are still available. Those are on May 1st for the following Winter Semester and Summer Semester as well as November 1st for the following Summer Semester. Accordingly, we urgent recommend to apply (early!) to the main application deadline for the chance to preserve a place at one of the most sought-after partner universities.

A consequence of the new application deadline is that the students must still deal with a distinct study abroad semester earlier than their third semester of study. Those that begin their third semester in the summer and in the framework of a required internship of their study programme in cooperation with the International Relations Office are already too late to meet the deadline of application by February 1st for a semester abroad in the following (fourth) winter semester. The study programmes and their departmental coordinators thus need additional specific information sessions on the theme of studies abroad. These have recently been placed at the heart of Rector Prof. Dr. Gerhard

Schneider: “The entire world is open to you. But you will also need language skills and intercultural competence in order to empathise with other cultures.

The aspects of language knowledge and intercultural competence in the new ERASMUS+ programme have become even more important for all participating universities. The preparation of mobile students will be given a special meaning. The EU Charter of the participating universities includes the corresponding passage: The participants will report, in addition to their student mobility, online in the new Mobility Tool Databank direct to the EU, whether these requirements have been fulfilled. So the universities are automatically evaluated on a regular basis through this external source.



The same is true for at Aalen University with numerous “incomings” exchange students from partner universities of Aalen University. They also must report their residence to the EU. Besides the obvious academic equality and the identical scientific services, the foreign mobile participants are to be integrated into everyday life at the university and appropriately supported linguistically. They also require suitable advisory and support services that must willingly step outside of the existing offers of the International Relations Office.

At this point, the actions of the faculties and study programmes are in fact being researched in special measures since they can best help the international quickly integrate into their new fields of study. In some study programmes, there are already models that enable foreign arrivals to “pick up” time at a low expense. An outstanding example can be seen in the “Skype Interviews” held by the Optometry Department before arrival and in International Business taking close care of students directly after arrival. The International Relations Office is available to the study programmes in order to work out effective measures such as these.

The faculties have workshops, which were initiated and go through the Rector’s Office, that have begun to sharpen their internationalisation strategies. Special attention will certainly be given in the context of the internationalisation goals of Aalen University that are contained in the new structure and development plan of the university. Students should be offered suitable possibilities for a semester abroad with existing or new university partnerships without need to extend studies. In return, Aalen should not only offer more English study programmes for the arriving international students, but also create additional care structures, so that residence in Aalen will thereby be also a complete success in future.



Being Open to Unusual Destinations

As linguistic founding, it is understandable that students are initially interested in the classical Anglo-Saxon countries, whether it is for a study or practice based foreign stay. Not without reason, the USA (Rank 1) and Great Britain (Rank 3) remain in the Top 6 destinations of students at Aalen University. At the same time there are countries such as South Africa (Rank 5) and the Scandinavian Sweden (Rank 6), where those with good English skills will succeed in business and study easily too. Though among those in the Top 6 are also Spain (Rank 2) and China (Rank 4). And this is no accident. Both of these countries are among the Top 30 trading partners of Germany in reference to the existing export and import sales in 2013 (Source: Statistical Federal Office 2014). If we turn to the other countries on the Top 30 list we see the following: Beneath are countries that are also of great importance for the German economy and in which Aalen University maintains partly numerous partnerships. The following countries are examples: France, Belgium, Poland, Russia, the Czech Republic, Hungary, Turkey, Norway, the Korean Republic, Romania, and Finland. Who thinks of these countries when one wants to study in English?



Standing Out From the Crowd

It should be repeated that with the introduction of the new Erasmus Plus there are also new application deadlines introduced for the students. Those who do not meet the main deadline of February 1st for their desired destination in one of the Anglo-Saxon locations do not need to grieve; Just the opposite. We actually recommend beginning to think about not so near destinations in mind. On the one hand, there will be important trading partner countries. On the other hand, they offer extraordinary intercultural experiences and thereby an opportunity not only to raise the profile of those involved, but also tests their flexibility, that of both the mind and body, to gain an openness to engage in entirely new things and to express their adaptability.

Place yourself in the position of a human resource manager. There are 100 candidates on hand, all showing social and intercultural competences to a certain degree, and this goes as well for engineering candidates. Extensive and deep expert knowledge is brought by all applicants. Practical experience and a good knowledge of English are in any event so called “must haves”. What remains after reviewing the applicants? 90-95 applicants with an overseas stay in the USA, the UK, and possibly Australia? Or rather the other five applicants with experience in important countries in middle and east Europe such as Poland, Hungary, the Czech Republic, or Romania? Or from an Asian country such as Korea? Or in an always important BRICS country (Brazil, Russia, India, China, South Africa)?

Around 100 University Partnerships Worldwide

Aalen University offers its students excellent opportunities. In the area of Management and Business Studies students have the possibility to attend English lectures at universities in Hungary, the Czech Republic, Croatia, or Turkey. At the same

time there is also the possibility of study in the Scandinavian countries of Finland and Norway. Also the students of engineering are offered various programmes. There are English taught lectures in Korea, Malaysia, or China in their area of study. Computer science and mechanical engineering students are able to make a study abroad semester in a Baltic country such as Lithuania. There are numerous examples of the roughly 100 partner universities of Aalen University, altogether located in 40 countries. The International Relations Office can gladly inform in detail which possibilities are in which country and which universities.



Always Important too: internships abroad

In looking at internships abroad, it is important to not always have streamlined thoughts. Many students would naturally like to go to a large company and in the custom of Anglo-Saxon countries. Dare to go a different way. There are scores of small and medium sized businesses that are internationally active and are market leaders in their area. Only as a consumer you do not know their name. These firms also have a non-negligible demand on qualified employees and senior management with corresponding international experience as well as the appropriate intercultural competence and are ready to give students a chance through an internship abroad. Certainly the firms reward the courage to go through such an extraordinary way.

Do also not hesitate if you still doubt your certainty of a foreign language. That should be no obstacle to collect foreign experience. In such cases it might be more advantageous to concentrate rather on large corporations in which you will meet many other interns with whom you may exchange experience.

In all other circumstances we recommend to go the extraordinary route. German corporations operate not just in the Anglo-Saxon realm, but in many countries and are always on the lookout for junior staff with the special “something”. Dare to give your profile that unique selling point.

■ **Pascal Cromm**
Director International Relations

International Staff Training Week in Vigo

The Universidad de Vigo in Spain, partner university of Aalen University, is proud of their culture. The Galician language course for exchange students, among other things, shows that. “There is no reason for concern as courses are held in Spanish or English”, smiles Miguel Vázquez, Director of the Language Centre at Aalen University. He has visited the university for a week and participated in the International Staff Training Week.

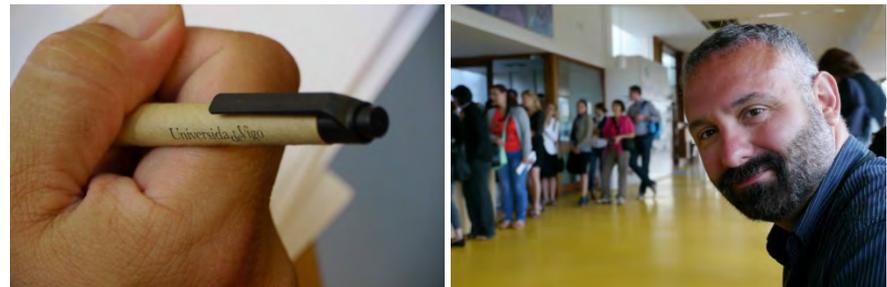
The emphasis was on “Multilingual Universities: Preparing EU Citizens for a Global Society” and on the particular theme of “Foreign Languages”, Vázquez compared notes with directors of other international offices and language centres. The colleagues confirmed that inky a small part of courses were held in Galician.

“Aside from that, it was very interesting to hear that we are all similarly busy with the same processes,” continued Vázquez. “Altogether more than 60 colleagues from all over Europe will come to the congress in Vigo”. If someone wants to summarize the findings of this informative week in a short sentence, one can say that the English is winning as most important, but also the languages of individual countries should be encouraged.

This also reflects the basic idea of a united Europe. That is to say: promoting identity, but also an open to a combination of language and culture.

Aalen University registers an increasing number of incoming-data. Also a small success of the work of the International Relations Office (see page 36) “We offer tailor-made German courses for all interested students,” emphasised Vázquez. The number of courses has considerably risen in the previous years for this reason. This is a sign not only in favour of the increasing attractiveness of Aalen University, but also of Germany in general: “We are on a very good path. We would indeed like our efforts to send students abroad to remain strong. The partner university Vigo offers ideal possibilities to realize their experiences in Europe – and there is also the means of funding present.”

■ vaz



News regarding “Bachelor Plus”

Bachelor Plus is a project promoted by the DAAD and funded through the Federal Ministry of Education and Research (BMBF) programme to promote internationalisation in Bachelor degree programmes. After the study programmes of International Sales Management and Technology and Business Studies SME had already successfully qualified in the first phases of funding, a further application has now been approved. With it, students have been able to be supported at a partner university since the 2014/2015 winter semester.

Students obtain a monthly stipend as well as continuing support in travel expenses and insurance. In addition, participation in the Bachelor Plus Programme is confirmed by a certificate. The study programme International Sales Management and Technology currently resides in the third and last funding period. Therefore, until the coming 2016 summer semester, students are able to benefit from it. With the programme “Bachelor Plus – International Procurement” the study programme offers selected students with the possibility to acquire competence in the areas of purchasing, sales services and international business.

Additional training will take place at both of the abroad partner universities. Students will have their choice of either the Turku University of Applied Sciences (TUAS) in Finland or the Poznań University of Economics (PUE) in Poland; both are distinguished national and international institutions. The goal of the programmes is for students to train at the interface between sales and purchasing.

BABE KMU – **B**Achelor Plus der **B**Etriebswirtschaft für KMU (Bachelor Plus for Business Studies SME) – currently is in the second funding period. Currently two KMU students are studying at Emporia State University in the USA. Other partner universities include the Central University of Technology Bloemfontein (CUT) in South Africa as well as the Vaal University of Technology, also in South Africa. Students have the opportunity to choose from the following study areas: Hotel Management, Sport Management, Hospitality Management, Organisational Management, Financial Accounting as well as Business and Law.

■ mal/jw

With UStA to Berlin

Last semester the independent student association UStA of Aalen University organized an excursion to Berlin for international students. In three days the students were given great insight – including going on a guided tour through Berlin-Friedrichshain or at the “Berlin Classic Tour”. This led to the Chancellor’s Office at the Bundestag, then it went towards the direction of the Brandenburg Gate.

At every one of the stations, the tour guide impressed the students with historical information and lore of each building and their functions. At the “Monument of Remembrance for the Book Burning”, it was clear how interested the students were about the historical background of the Nazi dictatorship. They provided many questions and made notions about the actions of that time. The last station of the tour was the “museum island” with many world-famous and valuable museums. In a Mexican restaurant, the evening slowly came to an end. The next day the group visited the “Memorial for the Murdered Jewish of Europe”. Also during this visit came many more questions about the time of the Nazi dictatorship. Afterwards there was a tour through the Bundestag.

The second day ended with a bulk of the excursion participants with a visit to an Indian restaurant.

The third and last day they went to the East Side Gallery and Charlotteburg Castle. With many photos and impressions in tow, the group met later that day for their trip back to Aalen.



rom

Excellent Relations with Malaysia

Since 1997 there has been a cooperation programme between the south-Asian country Malaysia and the state of Baden-Württemberg. In the framework of this programme, Malaysian awardees successfully complete their engineering studies at a Baden-Württemberg university.

Aalen University is there from the beginning. Especially supporting the programme was the position of Aalen's honorary senator of the university and chairman of the Binder Optik AG, Honorary Consul General of Malaysia, Dr. Helmut Baur.

From the invitation and initiative of Dr. Helmut Baur, a traditional Malaysian Evening took place this year. All currently studying Malaysian Scholars at Aalen University were invited, as well as the Rector and the representative of the International Relations Office.

The prorector for international affairs, Prof. Dr. Alexander Haubrock, also welcomed the professors in retirement, Rector Dr. Dr. Ekbert Hering and Rupert Schempp. Lastly came in his function as honorary representative of the GIZ, the organisation of tasks of the Ministry for Science, Research, and Art in Stuttgart that takes care of the awardees during their study in Germany.

One particular guest of honour was Consul Muhammad Syarqawi, who arrived from the Malaysian Consulate in Frankfurt am Main.



cro

Summer, Sun, Sint Maarten

Dear Limes Reader,

Sint Maarten. Hardly anyone has said anything about it, and I have to be honest, I have not either. However, when one uses Google or the like, it becomes immediately clear who or what Sint Maarten is.

One can see many photos of airplanes that fly just a few metres over the heads of the beach goers. The grounds of the Princess Juliana International Airport are on this island. By chance I found a university here where I was able to study.

When I revealed my plans, my circle of friends called me completely crazy. But for me it was clear: I am ready for the island.



I ended up at the University of St. Martin in Philipsburg, Sint Maarten. Since this is not a partner university, preparation effort was much more involved and I began with it very early.

On my lesson plan was only economics, which was in complete contrast to my actual study programme. But even now I can say it is always worth a look outside the box.





We are already speaking about the bigger picture. It is not only seen as academically worthwhile. Linguistic, cultural, and also personal development are valuable in this kind of stay. Despite everything, studying abroad is very difficult, as one must read and understand academic texts in a different language.

So there is very little time to enjoy the Caribbean at its fullest. However, my semester fortunately ended long before the examination period in Aalen. So I was able to spend a little time in the sun.

My conclusion: Here there are more essential cultural differences than I initially thought. Living in the Caribbean once is an important formative period of life that I do not want to miss.

*Sunny Greetings,
Jens Bamberger
Technical Editing Department*

limes international

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In the next issue:
**Energy Efficiency,
System Accreditation,
and many more!**

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