An engineering degree course in Germany is demanding and time-consuming. It requires planning and discipline, not question about that. Still, there are students who don’t want to miss out on the opportunity of studying several months at a partner university abroad. Sven Mahleiter, Friederike Escher, Fabian Schneider and Christian Fischer are four of the students who talked about their adventures in Brazil and China at the Internet portal “ALLES ING!”.

They are hoping to inspire their fellow students to likewise embark on an exchange programme.

It was only to be expected that Sven would wish to go abroad again. Having spent his gap year by the way, providing international students at the RUB. In the summer of 2013, he spent a lot of his spare time with Brazilian guest students from the UFABC (Universidade Federal do ABC). In the evening, he often went out to the countryside. Those mountains, the country, is what he writes about his most rewarding experience. "Studying in Brazil, or, more precisely, in São Paulo, is an excitingly refreshing experience! Where to start? I’ll tell you a bit about what my day at university typically looks like. I usually get up at around ten o’clock, because I needed to go to lectures in the late evening in my first semester. This is the first difference to Germany. Here in Brazil, you can attend lectures between eight in the morning and eleven at night. Thus, I’m free during the day to, for example, visit one of the many attractions of São Paulo or take part in one of the extracurricular courses offered at the university football, judo, dancing, English or German. That’s pretty cool!"

Christian, Friederike and Fabian met a buddy who would help them to negotiate the initial obstacles at the university. Fabian describes his first impressions of the vibrant metropolis: “São Paulo is great, it is pleasantly warm, the sun shines most of the time, and the city is overwhelming. Many skyscrapers, interspersed with normal houses, and there are giant shopping malls everywhere. That’s chaos in the streets as you wouldn’t believe. They’re governed by the principle: whoever honks may drive. Accordingly, you will always get a warning if you want to cross the road. Well, I certainly wouldn’t want to ride a bike here!"

Seeing as an exchange year offers the chance to learn about the people and the country, the globe-trotters use every opportunity during their exam-free periods to travel across China. Christian would often go by train, and this is what he writes about his most recent trip to the Yellow Mountains (Huangshan): “It was an outing into the countryside. Those mountains, by the way, provided the design blueprint for the film Avatar. We went on the night train. That was a new experience. You don’t get much sleep due to the noise. Doesn’t matter, it was fun. Carrying ecklocks, snacks and drinks, we marched up some 1,000 altitude metres. It was a seven-kilometre long stair-climb. Once on top, at an altitude of some 1,600 metres, there were some incredible panoramas. We watched the sun set and, on the next morning, the sun rise."

The RUB students spent the holiday season 2013 in their host country as well. Friederike is excited to experience what the Christmas season feels like here: “Last weekend, I went with a couple of friends to a Christmas market organised by the Pauliner brewery. Such fun. There were many, very perry small stalls selling all kinds of Christmassy things. You could buy mulled wine and such staples of the German cuisine as potato soup, baked potatoes, bratwurst and waffles. After all this, we left very Christmassy for a while.”

The RUB students have already made quite a few experiences abroad, and they will continue to keep us abreast of their adventures in 2014. Everyone who would like to travel with them in thought can follow the regularly updated news at www.ing.rub.de/globetrotter.

Natascha Strenger

Info: “ALLES ING!” is a joint initiative of the RUB’s three engineering faculties. In the globetrotter section, the initiative collaborates with the BMBF project “ELLI – Excellentes Lehren und Lernen in den Ingenieurwissenschaften” (“Excellent Teaching and Learning in Engineering Sciences”). The reports are meant to inspire engineering students to go on an exchange programme.

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Firstly, a few words about the Cluster itself: the Cluster of Excellence RESOLV (Ruhr Exploring Solvation) is hosted at the Ruhr (speaker: Prof Dr Martina Havenith, president, and the National University of Korea). These all belong to RESOLV’s ever-expanding International Faculty (IF) – indeed two new partners, namely the University Wuerzburg and UCLA (University of California, Los Angeles), have joined the IF in 2013. Some of the highlights of 2013 for RESOLV was the International Opening Symposium, which took place in June at the RUB Conference Centre. Circa 300 participants from all over the world visited the RUB and we heard the latest developments in the cutting-edge field of solvation science in an exciting presentation.

Behind the scenes

Behind the scenes, international appointments continue to contribute to the field of Solvation Science came together, many of whom presented their latest findings at the symposium, to assist RESOLV in appointing three new W2 professors in the area of Solvation Science. The three new RESOLV professors have since arrived at the RUB and are fully-fledged members of the chemistry faculty. To put the face to a name, we would like to introduce: Prof Dr Stefan Huber (synthesis of solvent-driven reactions), Prof Dr Patrick Nürnberg (time-resolved spectroscopy), Prof Dr Lars Schäfer (molecular simulations using force-fields). They are currently residing in custom-built offices, remodelled specially for RESOLV in the NC building.

In addition to these new appointments, RESOLV has expanded over the past year, recruiting two new group leaders, Dr Matthias Gemmer (MTPK) and Dr Christian Merklin (RUB), as well as attracting four new members: Prof Dr Beate Baldus (theoretical chemistry), Prof Dr Matthias Bogert (bioanalytical chemistry), and, last but not least, Prof Dr Katrin Sommer (chemistry faculty).

Our International Female Faculty (IFF) has also got off to an excellent start – the joint meeting with the NCCR MUST (Molecular Ultrafast Science and Technology) Research Cluster at the ETH, Zurich, in October brought together 35 female researchers from many different institutes for a stimulating and constructive workshop.

This is just a small selection of the events that have been realised within RESOLV over the past 16 months. What began as a state’s “entry” in the form of a research proposal has now been brought to life and continues to evolve autonomously at an amazing pace. We are sure that the next four years will bring forth many more special highlights and look forward to sharing them here with you! Watch this space... Ralf Glaun

NEW ROOMS FOR RESOLV

RESOLV is one of the RUB’s flagship research facilities. Financially backed by the DFG (Ruhr Exploring Solvation; EXC 1055), this Excellence Cluster is still in its infancy. In a few years’ time, the participating researchers and students will have their own research building (ZEMOS) at their disposal. They do, however, require office and lab space already to conduct their research into solvation processes – especially since three new professors have just been appointed just the main ar

One of three newly-appointed professors, Prof Dr Stefan Huber (Organic Chemistry II), has been temporarily accommodated in the RESOLV area.

group leaders and the newly appointed professors and their teams) have a cutting-edge office infrastructure at their disposal, only one and a half years after RESOLV’s start-up in November 2012. In the final construction phase, additional conversions for new labs will be carried out. Theifli, Claudine Hagen, Sabine Roggemann Info: Link to the homepage of the Excellence Cluster RESOLV, www.rub.de/solvation.

behind visually and acoustically from the level’s high-traffic halls and corridors.

Entrance hall of the refurbished faculty library with reception desk, quiet study space (sound-insulated boxes) and printing/copying facilities.

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PHD STUDENTS AS SCIENCE JOURNALISTS
“RUBIN” created in collaboration with the Research School

What does a fair healthcare system look like? Why may electric cars leave a data trail? In what way may mathematical models help understand natural disasters?

These are the questions investigated by three PhD students at the RUB Research School. In “RUBIN”, they describe their research subject targeting readers from all walks of life. All articles are available online at www.rub.de/rubin.

A fair healthcare system

In the Applied Ethics discipline, Corinna Rubrecht looks into the questions how the healthcare system’s scarce resources may be fairly distributed. Has an alcoholic the right to a liver transplant, even though he had damaged the organ due to his drinking habits? Is an older patient entitled to a dialysis treatment just as much as a younger patient, who is going to benefit from it longer? In order to investigate these questions, the PhD student applies the justice theory developed by an American philosopher; she describes her results to date in “RUBIN”.

With the exception of its high costs, the electric car is generally regarded as a positive development. The technology’s latent potential of compiling the users’ movement profiles is almost never mentioned, however. The reason why users leave data trails when charging their vehicle’s batteries is explained in “RUBIN” by Tilman Frosch from the Chair of Systems Mechanics. He develops mathematical models which can be used to precisely describe the behaviour of granular-fluid mixtures. He thus contributes to gathering data about them. Therefore, the engineer scrutinises flow processes on a theoretical level. He describes mathematical models which can be used to precisely describe the behavior of granular-fluid mixtures.

The international edition 2014 also looks – in addition to other topics more – into the revolutionary potential of pop music in the Soviet Union, and explains how a robot suit may aid the rehabilitation process of paralysed patients.

“RUBIN” ONLINE AND IN PRINT

“RUBIN” is available at the Deutscher Hochschulverlag (building UV, ground floor, room 46) at a price of €4.00 each. All articles may be also viewed for free online at www.rub.de/rubin. The English-language edition is published once a year, the German-language edition twice a year: in spring and in autumn respectively. RUB alumni are welcome to subscribe to “RUBIN” for free at the above-mentioned website.

In February 2014, the international edition of “RUBIN” was published for the second time, this time in collaboration with the RUB Research School (see box). Working hand in hand with the RUB editorial team, Corinna Rubrecht, Timo Reisner and Tilman Frosch contributed articles to the magazine. In addition to their time-consuming postgraduate re-

search, the three Research School participants approved the subject of their PhD thesis from a different angle – and not on an expert-only level. In “RUBIN”, they describe their research subject targeting readers from all walks of life. All articles are available online at www.rub.de/rubin.

In “Applied Ethics” discipline, Corinna Rubrecht looks into the questions how the healthcare system’s scarce resources may be fairly distributed. Has an alcoholic the right to a liver transplant, even though he had damaged the organ due to his drinking habits? Is an older patient entitled to a dialysis treatment just as much as a younger patient, who is going to benefit from it longer? In order to investigate these questions, the PhD student applies the justice theory developed by an American philosopher; she describes her results to date in “RUBIN”.

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RUB RESEARCH SCHOOL

Bringing PhD students together and supporting them on their career path – this is the mission of the RUB Research School. The graduate school was established in 2007 in the course of the first round of the Excellence Initiative. Since 2012, it has operated as an interdisciplinary, university-wide organisation: all PhD students are members of the Research School. In the second round of the Excellence Initiative, the German Research Foundation (“Deutsche Forschungsgemeinschaft”) approved the RUB Research School plus. This programme provides funds for which PhD stu-

dents may apply individually, for example in order to collaborate with research in-
stitutes or enterprises abroad. Further information: www.research-school.rub.de.

“Our Treasure is Back”

Since February, the Querenburg coin collection has been back in the RUB’s art collection building. It had been lent to the Bochum Zentrum für Stadtgeschichte (centre for town history) in 2010. The collection was lent to the Bochum centre for town history, where it remained part of its exhibition until recently.

The diagram shows how many Research School members currently come from which countries. Photo: RUB/photallery – Fotolia.com

How can the same healthcare resources be fairly distributed? Corinna Rubrecht, PhD student in Philosophy, discusses this subject in “RUBIN”.

Everyday in motion

Timo Reisner from the Chair of Con-

tinuum Mechanics ("Lehrstuhl für Kon-

tinuumsmechanik") looks – in addition to other topics more – into the revolutionary potential of pop music in the Soviet Union, and explains how a robot suit may aid the rehabilitation process of paralysed patients.

Guest academics coming to the Ruhr-Universität like to live near the campus. Catering to their wish, the RUB rents out flats in five international guest houses. This overview introduces the houses belonging to the “Uni-Forum”.

Regardless of whether the international guests stay at the RUB for one month or one year, whether they come on their own, with their partner or with a large family – the RUB’s “Welcome Centre” has the necessary capacities to provide suitable accommodation. Singles living on a small grant or a small income may share a flat, while families with several children are offered flats with sizes ranging up to 100 square metres. “Everyone who comes to the RUB as a guest applies for accommodation in the size range he or she requires. We then ascertain in which guest house we can accommodate them,” explains Beate Seidemann. The newest of these houses belongs to the “Uni-Forum”. That much is obvious as she shows us around two of the flats in the “Uni-Forum” that are currently not let. Saving as the new tenants are about to move in, she uses the opportunity to see if all corners had been dusted and to check in the cupboards of everything that should be there is actually there. The woman notices that there are no wine glasses in one of the flats, she immedi-
ately calls the caretaker who brings the glasses a few minutes later. You can be sure that, before the new tenants move in, the last grain of dust will be gone – as well as the last cowpat peeled away in the shower curtain. a.n.

Information on all accommodation options for the Ruhr-Universität’s international guests: http://international.rub.
de/webwesen/centre/accommodation/in-
dex.html.de.

STUDY SWEDISH IN FINLAND

Åbo Akademi University, the Swedish-language university in Finland, offers scholar-
ships for students of German universities. The “Otto och Johanna Beflers fond” provides 8,500 € for two to four students who wish to attend Åbo Akademi University for one or two semesters. The application documents have to be composed in Swed-
ish and can be submitted until 15 April 2014 (international@abo.fi).

SHANGHAI

RUB students who are enrolled in the degree programmes Mechanical Engineer-
ning, SEPM and UTMR may apply for a place at Tongji University in Shanghai by 31 May 2014 at the Chair of Production Systems. The students will spend the winter se-
semester 2013/14 and/or the summer semester 2013 at Tongji University; all tuition and application fees will be reimbursed. Students may attend courses offered at Tongji University (in English) and courses offered at the Sino-German College for Graduate Studies (in German). Please contact Dipl.-Ing. Björn Krückhans (krueckhans@lps.rub.de) for further questions.

A glimpse into the smallest apartment unit in the Uni-
Forum, ideally suited for singles.

Guests arriving in two or three persons group require larger flats, such as this one.
A POPULAR NICHE

Learning Irish at the Ruhr-Universität in and in Ireland

Irish is a Celtic language. It is recognised by the Constitution of the Republic of Ireland as the country’s first official language. It is also, as is perhaps less well known, the only language of Northern Ireland. Since 2007, Irish has, moreover, been an official language of the EU. In Ireland, more than 1.5 million people speak Irish as their first or second language. At the RUB, too, the language enjoys great popularity. This is partly because of the dedicated Irish teachers at the RUB and because of the options module that fosters this much-hoarded niche.

Sylvia Botheroyd has always wondered about the sheer number of students who want to study the Irish language, which is not the easiest to learn. “I will never forget the moment when I approached a semi-naturaleza in the late 20th century that was crammed full with students. Assuming that I got the wrong room, I hesitantly asked a couple of people in the corridor what it was they wanted to learn and with which lecturer. The answer was ‘Irish with Mrs Botheroyd!’” as the lecture remembers. It took some effort to make her way to her desk. “It resembled a climbing tour, with helpful hands supporting me left and right. At the desk, two rather large young men made readily room by seating themselves underneath.” For the rest of the semester, Irish lectures took place in an area frequented by mites. Moreover, the language was taught only in small groups, a fact that Sylvia Botheroyd says in her book “Irish I to ‘Irish IV’, as well as two cultural-studies courses. One of their students shared: “The RUB’s language region (a so-called Gaeltacht) on the Dingle Peninsula in County Kerry, in collaboration with the Centre for Spoken Irish at the University College Cork.

Mutual help

The excursions take place early in September: one week for Irish I and II, one week for Irish III and IV. The number of participants is in the range of 40 to 60. “Not more than can be seated around a kitchen table,” says Sylvia Botheroyd. She has been in charge of the courses and has accompanied such excursions for 20 years — long before governmental funding was secured. Accordingly, she knows from experience how many people can take part in such a kitchen table. That is the place where communication within the group mainly happens and that, seated at the table, everyone can listen to the Irish radio broadcasts together.

As chance will have it, the Irish students can not only listen to the radio stations during their trip to Ireland, but also speak Irish when they want to. This is possible in parts of the country and the people, surely they must feel encouraged to go on.” Hopes Sylvia Botheroyd, an

In addition to Eastern, Irish is the only language that is offered directly by the RUB’s optional module. The course is mentioned in the article, “Irish I to ‘Irish IV’, as well as two cultural-studies courses, are embedded in three modules (5 CP each). The courses in Irish language and culture and ‘Irish language and culture for advanced students’. More information available at: www.rub.de/optionalebereich/sites/geb1/ modul_1_4.shtml, general information on the optional module: www.rub.de/optionalebereich.

EXHIBITION EXTENDED

Europe’s largest fragrance exhibition, “Himmelsleute und Höllestengute” (“heavenly scents and ungodly odours”) has been extended until 31 May. Originally scheduled to close in March, it will now give visitors the opportunity to view the exhi-

How does fragrance get into the skin? Which role does the sense of smell play for animals? And what does yang-elang smell like anyway? The exhibition transports the visitors into the world of flowers and scents. The exhibition is open on Saturdays with Hanns Hatt, a Bochum-based scent researcher, has drawn up the scientific framework for the exhibition. The event is complemented by a wealth of additional events, such as workshops, lectures, and a science slam. The Blue Square hosts high-profile guests and in-house experts who provide a platform of perspectives to render the world of fragrances accessible.

Info: The fragrance exhibition is open daily from 11 am to 6 pm. Regular tickets are available at a Euro, students and handicapped visitors pay 2 Euro, for children admission is free. The venue is the Blue Square in the centre of Bochum, Robertstrasse 15-17. Free-of-charge guided tours for groups of min. 15 people are provided on request: duft@rub.de; comprehensive information incl. additional programme: www.rub.de/duft.

BISPHENOL A-BASED PLASTICS

Bisphenol A impairs the function of proteins that are vital for growth processes in cells. This finding has been reported by researchers from the Ruhr-Universität Bochum and the University of Wuppertal. The substance, short BPA, is contained in many plastic products and is suspected of being hazardous to health. To date, it had been assumed that bisphenol A produces a harmful effect by binding to hormone receptors. The chemist and biochemist, who has discovered that the substance also affects the so-called small GTPases. They published their findings in the “Journal of Medicinal Chemistry”.

“Our research provides further evidence that the physiological effects of bisphenol A may be even more complex than previously assumed,” says Prof Dr Raphael Stoll head of Biomolecular Spectroscopy at the Ruhr-Universität. “However, we have also discovered other related compounds that indicate which path the future development of pharmaceutically effective substances against GTPase-mediated diseases may take,” adds synthetic chemist Prof Dr Jürgen Schenkreck from Wuppertal.

Small GTPases are enzymes that occur in two states within the cell: in the active form when bound to the GDP molecule, and in the inactive form when bound to GDP: a lower-energy form of GTP. These switch proteins are crucial for transmitting signals within the cell. The researchers have demonstrated that bisphenol A binds to two different small GTPases, B-Raf, and H-Ras, thereby preventing the exchange of GDP for GTP. The non-profit organisation German Cancer Aid (Deutsche Krebshilfe e. V.) has financed the project since 2011.

Suspected health hazard

Various organisations have pointed out that bisphenol A may be hazardous to health: the Federal Institute for Risk Assessment (Bundesinstitut für Risikoforschung), the European Food Safety Authority, the US Food and Drug Administration (FDA), the US National Institutes of Health (NIH) and the US-American Breast Cancer Foundation. However, those organisations have not yet provided a final assessment of the substance’s hazardous potential. Nevertheless, the European Commission banned the use of bisphenol A in the manufacture of baby bottles in 2011. Academic studies indicate that the substance may increase the risk of cardiovascular diseases, breast and prostate cancer as well as neurological diseases. The researchers therefore recommend a restriction of bisphenol A-based plastic containers for food products.