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State Secretariat for Education, Research and Innovation SERI
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Commission for Technology and Innovation CTI

Swiss Federal Office of Energy SFOE

Science-Switzerland, June - July 2014

News on Swiss science, technology, education and innovation

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Top Ranks for Switzerland in Global Entrepreneurship Monitor 2013

(startupticker, July 09, 2014)

In the 2013 Global Entrepreneurship Report published by the University of Applied Sciences Fribourg (HEG/HSW), Switzerland received top grades and ranked first in both the Global Competitiveness Index and the Global Innovation Index. In particular, perceived opportunities to start a business were higher in Switzerland than in previous years. Moreover, the Fear of Failure has clearly lessened in the past few years, and in 2013 was even lower than in the USA. Switzerland shows a higher potential in 2013 with regard to creating new jobs via young companies (Total Entrepreneurial Activity, TEA). On the other hand, there is a clear orientation on (combined product-market) innovation and orientation to international markets. In these areas, Switzerland ranks 13th and 5th, respectively.
http://swissinnovation.org/news/web/2014/00-140709-c6

Watt d'Or World Premiere in Boston

(swissnex Boston, July 09, 2014)

During July 9th through July 12th, 2014, swissnex Boston hosted the Swiss-US Energy Innovation Days in conjunction with the Swiss Federal Office of Energy (BFE). Taking place at Northeastern University, the Swiss-US Energy Innovation Days included a series of events centered on energy innovation and bringing together the best minds from both sides of the Atlantic. The Swiss-US Energy Innovation Days included as one of its highlights, the world premiere of the Swiss traveling exhibition: Watt d'Or. Federal Councillor Leuthard's delegation was accompanied by 70 executives in energy from Switzerland's academia, governmental, and industry sectors. The Swiss delegation visited Boston to partake in the Swiss-US Energy Innovation Days.
http://swissinnovation.org/newsUS/web/2014/00-140709-37

1. Policy

New Energy Projects in Developing and Transition Countries

(Federal Administration, June 30, 2014)

With a total of $7.5 million for the years 2014-2017 Switzerland promotes energy projects in developing and transition countries. The interdepartmental platform REPIC - Renewable Energy and Efficiency Promotion in International Cooperation - which receives the money, supports projects in renewable energies and energy efficiency in cooperation with Swiss businesses and organizations. As a primary goal REPIC has to ensure a sustainable impact and the diffusion of promising solutions. With the allocated money 15 to 20 new energy projects related to REPIC's mission can be founded per year. Furthermore, to expand and consolidate the REPIC network,

various events and workshops will take place during this period of time. Since its foundation in 2004, the REPIC Platform has facilitated over 90 projects in 37 countries.
http://swissinnovation.org/news/web/2014/01-140630-88

18 Years of Gender Equality Federal Law

(myScience, July 01, 2014)

The Swiss Federal Law on Gender Equality entered into force on the first of July, 1996. Now, 18 years later, social scientists from the University of Fribourg have published a report that questions the efficiency of the law and criticize that the current enforcement mechanisms are not capable changing the practices of companies. In terms of gender equality, Switzerland fares worse than other countries, especially with regards to the income disparity between genders and the steps taken to eliminate gender inequality in the frequent past, according to a study published by the OECD.
http://swissinnovation.org/news/web/2014/01-140701-9b

Political Parties' Youth Wings Serve as Talent Incubators

(swissinfo, July 11, 2014)

The youth sections of Swiss political parties are increasingly making their views heard on big issues from excessive executive pay to pension reforms. In Switzerland, youth wings tend to play a more important role than in other countries, since Swiss political parties are less hierarchical and offer considerable freedom. Swiss direct democracy also means small groups like youth party sections can take advantage of traditional political instruments and launch projects that go against their party's ideas or are independent. One of a youth wing's main roles is to generate ideas for the party. In recent years these sections have launched initiatives and referendums that have led to national votes. They also lay the foundation for the future careers of young aspiring politicians.
http://swissinnovation.org/news/web/2014/01-140711-ba

Switzerland and EU Move Towards "Horizon 2020"

(20min, July 26, 2014)

After the Swiss vote in favor of the immigration initiative with the goals to place limitations on immigrants from the European Union to Switzerland, the Swiss participation in the European research program "Horizon 2020" was suspended. The main effect was that Switzerland could not participate in the bids for the prestigious ERC grants anymore. In the past years, Switzerland could strongly profit from the ERC grants – more than it would be justified for the size of the country. The decision of the Federal Council, to sign the contracts for the free movement of persons for Croatia opened the path to a resolution of the diplomatic crisis between the EU and Switzerland. Therefore, it now seems likely that Switzerland will be able to participate in "Horizon 2020" from 2015 onwards, even though the new proposal still has to be accepted by the policymakers of both sides.
http://swissinnovation.org/news/web/2014/01-140726-74

2. Education

Swiss Entrepreneurial Spirit after Graduation

(Federal Administration, July 25, 2014)

The Global University Entrepreneurial Spirit Students' Survey shows that while Switzerland is one of the most innovative countries of the world, there is still room for improvement with regards to the entrepreneurial spirit of Switzerland's students. The rate of Swiss students who want to found a company directly after graduation is just at the comparatively low value of 2%. Most students (62.6%) seek a position in a SME or a large company. However, five years after graduation, already 17.7% of students change their goal and want to found a company. The report further shows that the students subjects and the university they study at also strongly influences their preferences, and conclude that universities should aim to offer more courses and support for nascent start-up founders.
http://swissinnovation.org/news/web/2014/02-140725-fe

Changes in Social and Economic Situation of Students in Switzerland

(Federal Administration, June 01, 2014)

The Swiss Federal Statistical Office did a survey on the social and economic situation of all the 185'687 students enrolled in Switzerland. One indicator used to survey the social background is the educational level of their parents.

Another indicator is the immigration background. The increase in students whose parents have a tertiary education degree corresponds to the increase in educational attainment in the comparison group of the resident population. Nevertheless, by nationality there are large differences in the educational background of the parents. Especially at the universities of applied sciences and universities of teacher education the social mix increased. Since 2005, the percentage of students of foreign nationality enrolled in Switzerland increased continuously from 15% to 20%.
http://swissinnovation.org/news/web/2014/02-140601-f1

Research Grant Proofs to be Effective

(University of Zurich, June 02, 2014)

Since 2001 the University of Zurich has been supporting young academics via a special research grant. A total sum of 78 million Swiss Francs has been invested since 2001 to support students working on dissertations, post-doc projects or habilitation treatises. The grant that serves as an extension of the Swiss National Fonds' range of grants has proven to be very popular with rising applications each year. Now an evaluation of the sustainability of the grant by social psychologist Jürg Artho has shown it to be a good instrument, popular with applicants. Artho shows that since the grant allows students to focus on their own projects, they achieve their goals faster, graduating earlier. Furthermore, PhD students that profited from the research grant published more articles as lead author and found it easier to get grants from third parties.
http://swissinnovation.org/news/web/2014/02-140602-a3

Unemployment Virtually Non-Existent Amongst Graduates of Universities of Teacher Education

(Swiss Federal Statistical Office, June 23, 2014)

Entry into professional life for 2012 graduates was easiest for graduates of universities of teacher education – only 0.7% of whom were unemployed one year after graduation. In comparison, graduates who had obtained Master's degrees from universities and institutes of technology and Bachelor's degrees from universities of applied sciences recorded a higher unemployment rate based on the International Labour Organization definition (Master's degree graduates from universities and institutes of technology: 3.9%, Bachelor's degree graduates from universities of applied sciences: 3.6%). With a gross annual income of CHF 87,700 for a full-time position, graduates of universities of teacher education also earned around CHF 9000 more than Master's degree graduates from universities and institutes of technology and Bachelor's degree graduates from universities of applied sciences.
http://swissinnovation.org/news/web/2014/02-140623-32

Learning with Five Senses

(ETH Zurich, July 27, 2014)

'Going on a field trip' may sound like an old-fashioned or antiquated concept, but for botanist Matthias Baltisberger, they are simply the best method of teaching students about plants and their ecology. "There is no other teaching format that enables students to absorb so much material so easily." They allow the theoretical content taught in lectures to be demonstrated and applied in a hands-on environment. No other teaching method allows the course material to be experienced with all five senses. This is one of the reasons why field trips are so important at ETH Zurich. Whether they're studying agricultural, food or earth sciences, architecture, mechanical and civil engineering, study field trips ranging from tours of the Gontenbad mineral water plant in Appenzell to week-long seminars at the Singapore-ETH Centre in Singapore are organized by the lecturers from the ETH Zurich.
http://swissinnovation.org/news/web/2014/02-140727-7a

Thirst for Continuing Education in Switzerland

(Swiss Federal Statistical Office, June 30, 2014)

Continuing education (CE) helps individuals stay competitive on the labor market by keeping their professional knowledge up-to-date, and supports personal development. The Swiss Statistical Office (OFS) has published a report on CE activities undertaken by the permanent resident population aged 15-75 over a twelve-month period, based on a five-yearly survey (MSF) undertaken in 2011. The report covers CE taking place non-formally, within an organized framework outside the institutional education system. The most common type of CE activity followed is courses (47% of non-formal training, involving 39% of the population), followed by seminars (31%, involving 27% of the population), on-the-job training (15%, involving 17% of the population) and private courses (7%, involving 8% of the population). The main motivation is professional (68%, vs. 32% personal development).
http://swissinnovation.org/news/web/2014/02-140630-49

Dialogue on the Culture of Science

(University of Zurich, July 01, 2014)

A growing part of the scientific community has begun to question the credibility of science in the current climate of increasing pressure on researchers to publish in high-impact factor journals in order to advance their careers and stay competitive. Among other things, a series of 'premature publications' that although have made recent headlines have turned out to contain questionable data has ignited this debate. The question of whether we need a new science culture was the main focus of a public event hosted at the University of Zurich in July which included participation by the Swiss, German, and Austrian National Academies of Science. Other issues affecting the scientific community such as what role scientific academies should play, alternative research evaluation systems, and possible solutions to these negative developments were explored.
http://swissinnovation.org/news/web/2014/02-140701-5d

Good Employment Results for University Graduates

(ETH Zurich, June 24, 2014)

The Swiss Federal Statistics Office recently released the results of a survey on employment of 2008 and 2012 university graduates five and one year(s) after graduation. The results show that very few students are without employment, with some variation by field of study (in all categories, less than 5%). Salaries varied similarly by field, with a median income one year after a master's degree of 78,600 Swiss Francs. Other results show that students found their education to be useful for their careers, many doctoral graduates went into leadership positions, and part-time work was more common among women than men.
http://swissinnovation.org/news/web/2014/02-140624-f2

3. Life Science / Health Care

New Approaches to Antibiotic Treatment

(University of Fribourg, July 08, 2014)

Pathogenic bacteria cause serious infections that can lead to physical disability or death if left untreated. Each year, the World Health Organization (WHO) records hundreds of millions of infections, nearly ten million of which are lethal. However, many human immune system cells can effectively eliminate some pathogenic bacteria. Researchers at the University of Fribourg, partnering with Harvard Medical School and the Boston Children's Hospital, have uncovered mechanisms that could help develop antibiotic therapies. They have discovered how cytotoxic T lymphocytes eliminate intracellular bacteria; the granzymes, which detect abnormal cells and induce cell death, have a targeted potent antibacterial effect. When they reach the inside of bacteria aided by another cytotoxic effector protein, granulysin, they destroy the bacterium's vital proteins. The findings are published in Cell.
http://swissinnovation.org/news/web/2014/03-140708-85

Healing Paralyzed Rats after Stroke

(University of Zurich, June 12, 2014)

After a strong stroke, usually even rehabilitation cannot completely restore the lost motor skills. In an experiment with rats, researchers from the University of Zurich, the ETH Zurich and the University of Heidelberg show that a therapy of medicaments for the stimulation of nerve growth combined with motor training can be successful. The big caveat is that the correct sequence has to be observed: The paralyzed animals are only able to regain their mobility, if the training starts after the medicaments have been administered.
http://swissinnovation.org/news/web/2014/03-140612-71

Rapid Diagnostic Test for Antibiotic Resistance

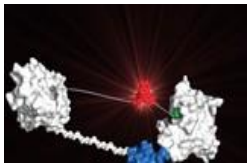
(University of Fribourg, June 24, 2014)

Bacterial resistance to antibiotics has increased significantly in recent years. This particularly concerns Gram-negative bacteria like Escherichia coli, Klebsiella pneumoniae, Pseudomonas aeruginosa and Acinetobacter baumannii, which cause severe infections in the urinary tract, lungs or abdomen. In Europe, approximately 25,000 people die each year due to multi-resistance to antibiotics. A rapid diagnostic test for multi-resistance to broad-spectrum antibiotics has been developed by researchers at the University of Fribourg, working with the

French National Institute of Health and Medical Research (INSERM) in Paris. In less than two hours, the new CarbAcineto NP test identifies multi-resistant strains of A. baumannii. Large-scale use of this test will improve control over the spread of certain characteristics of antibiotic resistance, and guide treatment choices for high-risk patients.
http://swissinnovation.org/news/web/2014/03-140624-b7

New Molecule for Fast Drug Monitoring

(EPFL, June 09, 2014)



Scientists at EPFL have invented a molecule that can easily and quickly show how much drug is in a patient's system. The molecule, now the basis of a start-up company, is expected to enable point-of-care therapeutic drug monitoring. Kai Johnsson's team at EPFL has developed a novel biosensor molecule that can quickly and accurately measure drug concentration in a patient's system without requiring anything more complicated than a regular digital camera. The molecule is the result of innovative protein engineering and organic chemistry, and has been shown to work on a range of common drugs for cancer, epilepsy and immunosuppression. The light-emitting sensor proteins can quickly and simply show how much drug is in a patient's bloodstream by changing the colour of their light. The method is so simple that it could even be used by patients themselves.
http://swissinnovation.org/news/web/2014/03-140609-d0

Flying Robot Wins KUKA Innovation Award

(University of Zurich, June 05, 2014)

A team from the Robotics and Perception research group of Professor Davide Scaramuzza from the University of Zurich was awarded the KUKA Innovation Award at this year's AUTOMATICA trade fair in Munich, Germany. The team consisting of the three PhD-students Flavio Fontana, Matthias Faessler and Elias Mueggler, won the 20'000 Euro prize for their demonstration of collaborating flying and ground robots. The team's flying robot Quadrocopter scans a specific landscape autonomously from the air and subsequently sends the in this way generated map to the ground robot KUKA youBot. The technology presented by the group may open up new possibilities for search-and-rescue missions after earthquakes or land slides.
http://swissinnovation.org/news/web/2014/03-140605-5a

Non-coding DNA Found to Play Key Role in Cancer Development

(University of Geneva, July 21, 2014)

Cancer is a genetic disease, i.e. it is caused by a combination of changes in our genes. These changes may be inherited, predisposing us to a greater or lesser extent to certain cancers, or may gradually be acquired throughout our lifetimes. Although the genetic origin of cancer has long been studied, the role of the 98% of our genome that is non-coding could not previously be determined. A team of geneticists at the University of Geneva, studying the tissues of patients with colorectal cancer, has now deciphered this little known but crucial area of our genome. It found that non-coding DNA contains functional elements that regulate gene expression and, therefore, play a major role in cancer development. The findings have been published in Nature.
http://swissinnovation.org/news/web/2014/03-140721-c4

Magnetic Resonance Therapy

(University of Zurich, June 11, 2014)

While fear is a vital emotion designed to protect ourselves in cases of emergency, many people suffer from paralysing terrors that inhibit their actions in daily life. Until now, psychotherapy tried to explain the reasons for these fears to the afflicted people and by doing so to develop a healthier mind-set that allows for a normal live. However, these methods are time-intensive and there is no guarantee for success. For this reason, the psychologist Uwe Herwig has been pioneering a new therapy method with a magnetic resonance scanner. With his therapy, a live feed of their neural activity is displayed to the patients. When their emotions are stimulated by images, they can directly observe the reactions of their brains themselves, thereby rationalizing their emotions and learning to control them.
http://swissinnovation.org/news/web/2014/03-140611-4b

Molecular Transport Mechanism Discovery

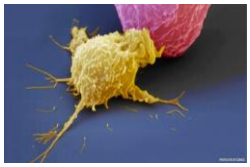
(University of Basel, June 25, 2014)

Researchers from the universities of Basel and Cambridge, and EPFL have discovered new details about how molecules are transported across the nuclear membrane in a cell. The membrane controls the flow of molecules

into the cell nucleus and contains pores that selectively allow transport. The pores are filled with proteins that act like velcro and attach to molecules that have matching proteins. Molecules without the appropriate proteins are not captured and transported by the proteins in the pores. Analogously, how well the transport mechanism functions depends on how clean the 'velcro' is, with cleaner velcro working better. This new understanding could lead to improvements in molecular transport.
http://swissinnovation.org/news/web/2014/03-140625-48

Immune System Self Protection

(ETHZ, June 25, 2014)



The immune system consists of many different types of cells, some of which kill off other cells that are infected or stressed. For example, natural killer (NK) cells perform this function. Researchers at ETH Zurich have discovered a new mechanism that protects other immune cells, such as T cells, from attack by NK cells. T cells are able to bind an interferon to specific receptors in order to mask stress signals that would normally trigger the NK cells. This mechanism was discovered on mice, and the researchers now want to test further hypotheses about it to eventually determine if the mechanism is related to autoimmune diseases.
http://swissinnovation.org/news/web/2014/03-140625-4d

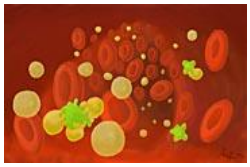
Animals Sometimes Conceal Sickness Symptoms

(University of Zurich, June 18, 2014)

A new review has shown that animals conceal their sickness in certain social situations. The author, Dr. Patricia Lopes from the Institute of Evolutionary Biology and Environmental Studies at the University of Zurich, states that animals from several different species usually eat and drink less, reduce their activity and sleep more when they are sick, to conserve their energy for recovery. However, when given the opportunity to mate or in the presence of their young, sick animals may behave as though they are healthy. Since 60% of communicable diseases in humans originate from animals, understanding how social situations affect a sick animal's behavior can improve our models of infectious disease detection and transmission. The findings are published in the Proceedings of the Royal Society B.
http://swissinnovation.org/news/web/2014/03-140618-6e

Stimulating Immune System to Fight Leukemia

(University of Basel, June 16, 2014)



T cells use a novel mechanism to fight leukemia. They may recognize unique lipids produced by cancer cells and kill tumor cells expressing these lipid molecules. A study conducted by researchers at the University of Basel shows that a tumor-associated lipid stimulates specific T cells, which efficiently kill leukemia cells both in vitro and in animal models. The study also shows that it is possible to isolate human T cells that specifically recognize and kill mLPA-expressing leukemia cells in in vitro tests. When these T cells were transplanted into mice, they also displayed great in vivo therapeutic efficacy against leukemia cells. Further research may show that this type of immunotherapy may be extremely beneficial in preventing relapses of the disease after chemotherapy and bone marrow transplantation. It opens new avenues to novel non-invasive cancer immunotherapies.
http://swissinnovation.org/news/web/2014/03-140616-e1

Malaria Changes Body Odor

(ETH Zurich, June 30, 2014)

Researchers at ETH Zurich have discovered that the pathogen that causes malaria changes its host's body odor to make the host more attractive to mosquitos. Mosquitos are needed for the pathogen to continue breeding and transmitting to new hosts. The change in body odor is caused by a change in the levels of certain compounds, rather than the introduction of new compounds. Furthermore, even once the host is no longer affected, the odor changes remain. This research will help inform the fight against malaria, and possibly even lead to new non-invasive diagnostic methods.
http://swissinnovation.org/news/web/2014/03-140630-9e

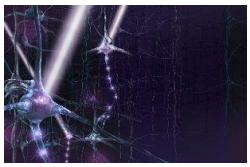
Effective Tuberculosis Drug Design

(ETHZ, July 02, 2014)

Treating tuberculosis is no mean feat; the strains of the pathogen which cause the disease are resistant to many drugs, making it a difficult challenge for scientists to develop effective therapeutics. Now however, professors at the EPF Lausanne and the ETH Zurich have designed and applied to patent a molecule whose structure was inspired by that of the bacteria-derived antibiotic pyridomycin. Unlike pyridomycin however, which despite its ability to inhibit tuberculosis pathogen growth is ineffective overall due to its quick degradation, their new active substance is more stable. This, and the fact that their molecule is easy to synthesize, make the scientists confident that their new active substance could serve as the lead for future drugs.
http://swissinnovation.org/news/web/2014/03-140702-29

Modifying Brain Behavior to Overcome Disorders

(swissinfo, July 27, 2014)



Some brain diseases, such as addiction, depression, and schizophrenia result from changes in the brain's behavior, but without the loss of brain cells. Thus, a treatment strategy is to modify the behavior of the misbehaving cells. Researchers at the University of Geneva demonstrated an optogenetics approach to solving cocaine addiction in mice. First, a certain protein is introduced into the brain through a virus. Next, an optical fiber is inserted into the targeted region and the protein is activated with blue light, thereby changing how neurons interact. This research shows the general applicability of such an approach, but several challenges are faced in transferring it to human use.
http://swissinnovation.org/news/web/2014/03-140727-3d

New, Simple Method to Identify Food Allergens

(EPFL, July 07, 2014)

Food allergies are becoming widespread in the Western world today, affecting around 6-8% of children and 3% of adults. They occur when the body's immune system mistakes a harmless food protein for a threat and attacks it as it would a bacterium or a virus. This causes symptoms like swelling, rashes, pain, and even life-threatening anaphylactic shocks. Scientists at EPFL have developed a fast, accurate, personalized method for determining which proteins cause allergies to cow milk. Using a well-established technique called immunoaffinity capillary electrophoresis (IACE), the method enables analysis of a patient's antibodies (IgE) to determine which specific protein induces allergic responses in them. The method can be extended beyond milk to other foods like nuts and wheat products, and help develop effective, customized therapies.
http://swissinnovation.org/news/web/2014/03-140707-d9

New Achievements in Research on Schizophrenia

(Harvard Gazette, July 21, 2014)

A multinational team of researchers – including Swiss and US scientists – published the largest genomic study on any psychiatric disorder to date. In the study biological mechanisms and pathways that underlie schizophrenia were identified. The findings could lead to new approaches in treatment of this psychiatric disorder. After more than 60 years of little innovation in drug development for schizophrenia, the study helped the researchers understand the biology of this mental disease that might point to additional therapeutic targets. Furthermore the researchers could support the hypothesized link between schizophrenia and immunological processes. To conduct the research a large sample size was crucial. 80,000 samples from more than 300 researchers were used in the study.
http://swissinnovation.org/news/web/2014/03-140721-ee

Mitigating Heat Waves through Cropland Management

(PNAS, July 29, 2014)

Researchers at ETH Zurich have been investigating the management of croplands to mitigate climatic extremes, such as heat waves. The albedo (reflectivity) of the Earth's surface affects how much heat is reflected back to space. Ground that is not tilled has higher albedo and reflects more heat than tilled ground. On the other hand, tilled ground has increased soil evaporation, which also helps with cooling. Nevertheless, on extremely hot days, the higher albedo of non-tilled ground is the dominant cooling effect, making no-till agriculture a strategy for reducing heat waves by as much as 2 degrees Celsius.
http://swissinnovation.org/news/web/2014/03-140729-1b

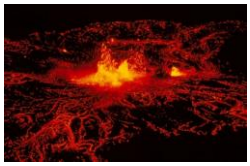
Affordable Treatment against Tuberculosis

(EPFL, July 25, 2014)

The Moscow-based pharmaceutical company Nearmedic is collaborating with EPFL to develop effective, affordable treatment against tuberculosis, which kills more than 1.3 million people per year. EPFL founded the Innovative Medicines for Tuberculosis Foundation (iM4TB Foundation) with the mission of developing a new and promising treatment against multi-resistant forms of the disease (MDR-TB). It has developed a molecule called "PBTZ169", which is simple to synthesize, so inexpensive to produce. PBTZ169 is very effective in combination with standard therapy (pyrazinamide) and with Bedaquiline, a drug recently approved by the European Medicines Agency and the U.S. FDA for cases of MDR-TB. Nearmedic, which previously developed a diagnostic system for MDR-TB, has bought licenses to use PBTZ169 in most countries of the former Soviet Union, where multi-resistant strains are prevalent.
http://swissinnovation.org/news/web/2014/03-140725-80

New Method to Calculate Magma Volume and Flow

(University of Geneva, July 22, 2014)



Molten rock (magma) is crucial for our planet and its inhabitants, since it is the source of volcanic eruptions and some mineral deposits. The problem is that as it cools and solidifies, most magma becomes trapped in large reservoirs several kilometers below the earth's crust. Scientists were unable to track movements of magma at such depths, until a team from the University of Geneva developed a unique method due to be published in Nature. Three researchers, specializing in modeling, the mineral zircon and volcanology, combined their skills to develop a method that precisely defines the age, volume and flow of magma necessary for constructing magma chambers. Their method improves the prediction of future volcanic eruptions and identifies areas rich in natural resources like copper and gold.
http://swissinnovation.org/news/web/2014/03-140722-52

Relationship between High Sugar Intake and High Mobility of Cancer Cells

(EPFL, July 30, 2014)

Researchers at EPFL were able to demonstrate that tumor patients' appetite for sugar and high mobility of their cancer cells result from the same mechanism. The scientists could observe a cause and effect relationship between the shift from one behavior of the cells to another and the glucose consumption of the cells in their experiments with non -small lung cancer cells. As they also showed that the chances of patient survival were influenced by the intensity of the phenomenon, new potential targets for future therapies opened up. The researchers see a potential target for future medications such as toxic molecules that destroy the cell from within, incorporated in the protein that is responsible for meeting the cell's need for sugar.
http://swissinnovation.org/news/web/2014/03-140730-79

4. Nano / Micro Technology / Material Science

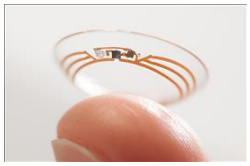
Novel Water Filtration Device

(ETH Zurich, July 22, 2014)

According to the World Health Organization (WHO), 3.4 million people die from water-related diseases every year. Although solutions already exist, one main issue remains…the price. To tackle this, ETH Zurich researchers from the Functional Materials Laboratory developed a polymer membrane that allowed them to produce a cheap filter, DrinkPure, which can be screwed on any plastic bottle. A liter of water, cleaned from bacteria and chemicals, can be produced per minute by squeezing the bottle. This light filter has great promises since it can cover the water personal needs for a year after which the membrane can be replaced. Researchers are already taking a step further by launching a crowdfunding campaign on Indiegogo to mass-produce DrinkPure and implement it in Africa.
http://swissinnovation.org/news/web/2014/04-140722-eb

Novartis and Google to Collaborate on Smart Lens

(Novartis, July 15, 2014)



Smart lenses, contact lenses that contain miniature electronics, could provide novel, minimally invasive ways to monitor and cure health problems. Novartis and Google will collaborate on developing this technology using Google's expertise in miniaturized electronics and Novartis' biology experience. The first two applications to be developed are a lens that measures blood sugar for diabetes patients, and an adaptive lens for people with presbyopia, an eye disease that makes reading difficult.
http://swissinnovation.org/news/web/2014/04-140715-e4

Novel Material to Replace Plastic

(Tages Anzeiger, July 28, 2014)

"Fluid Solids" is a novel biological plastic with a superior eco-balance that could one day even replace metals or plastic as a basis in products. As the name implies, the material is first fluid and can be cast or pressed into a form, before it becomes rigid. Fluid Solids consists of fibers made from waste of the woodworking industry, bone meal to bind, and of filler material, such as marble powder. The material has been used to create chairs, coat hangers, and even a modular divider for rooms. In cooperation with a partner in China, Fluid Solids will be used to create a new generation of mannequins, which plays to the strengths of the material: It feels warm and similar to wood, while still retaining the ability to be formed like plastic.
http://swissinnovation.org/news/web/2014/04-140728-58

Shape Memory Alloys for Construction

(EMPA, June 20, 2014)

When deformed, Shape Memory Alloys (SMAs) are able to reassume their original shape simply by being heated up to a certain temperature. Already used in eyeglass frames and stents, these materials have attractive potential applications in civil engineering such as strengthening bridges by reinforcing concrete beams with these alloys. Researchers at EMPA have been successful in developing SMAs suitable for such applications through conducting thermodynamic simulations and extensive lab testing. Made of iron, manganese, and silicon, their SMAs can be activated at temperatures as low as 160 ºC, meaning that the materials surrounding the SMAs will not be compromised. The start-up re-Fer AG founded in 2012 is currently developing this technology further with a focus on iron-based SMAs as they are cost-effective and therefore suitable for use in building and construction purposes.
http://swissinnovation.org/news/web/2014/04-140620-67

5. Information & Communications Technology

Programming at Primary School Level

(20min, June 15, 2014)

The conference of the Swiss-German education directors has discussed the possibility of introducing programming classes in primary school. Currently, the discussion was centered on having one hour per week designated to introduce the children to IT and medias. The expert group at the conference suggested having one hour per week of IT, programming, and IT from the third grade on and increase it to two hours in secondary school. This idea has a positive echo, however it could encounter severe problems during the funding discussions.
http://swissinnovation.org/news/web/2014/05-140615-2e

Sensirion – from a pure hardware developer to an expert in software engineering

(Sensirion, July 31, 2014)

The internet of things, smart homes and wearables are the talk of the new economy. The basis of this is an intelligent sensor technology and its integration into the devices. Sensirion, an ETH Zurich spin-off, is the only company to offer the technology and its implementation from a single source, working closely with global manufacturers. The task is twofold: to develop tiny sensors and integrate them into the devices. With the integration of sensors in smart devices, the company has evolved from a pure hardware manufacturer into a complex software provider. To enable the integration of its sensor technology, Sensirion has worked with Google to enhance the Android API with an interface for temperature and humidity measurement and made it available as an open

source solution. And Sensirion's team continues to optimize the software and works on new and innovative sensor solutions every day.
http://swissinnovation.org/news/web/2014/05-140731-51

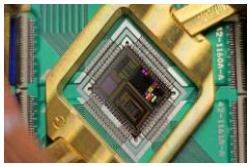
Increased Customer and Criminal Surveillance Carries Risks

(swissinfo, June 30, 2014)

In his yearly report to the government, Switzerland's Federal Data Protection and Information Commissioner Hanspeter Thür highlighted the dangers of technology that allows businesses to track customers' habits. He warned that such practices might soon come to Switzerland and that extensive data collection and analysis represent a "massive threat to privacy". "Big data" is particularly problematic because it only shows the probabilities of patterns and could lead people to derive inadequate evidence or causalities from it. Thür called for a revision of Swiss data protection law that would incorporate the use of big data. While encouraging discussion on the barriers of state surveillance, he criticized a bill on enhanced monitoring of the online activity of possible criminals, objecting that intelligence services could manipulate IT systems and networks.
http://swissinnovation.org/news/web/2014/05-140630-3a

Analysis of a Quantum Computer

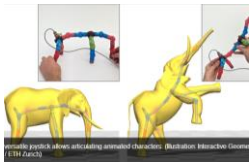
(NZZ, June 24, 2014)



A Canadian company released a computer, the D-Wave Computer, which they claim uses quantum mechanical effects to solve problems faster than classical computers. Whether the D-Wave Computer truly is a quantum computer is debated in academic circles. One recent publication shows that some of the computer's quantum bits are entangled during crucial operations. Another publication, from an ETH Zurich research group, shows that the computer does not have any speed advantages over classical computers. However, this may be due to the type of problem being solved.
http://swissinnovation.org/news/web/2014/05-140624-5d

A Versatile Joystick for Animation Artists

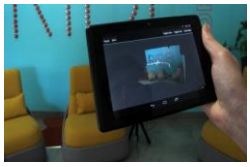
(ETH Zurich, June 26, 2014)



Manipulating three-dimensional animated characters on a 2D screen is challenging and requires extensive training. Researchers at ETH Zurich's Interactive Geometry Lab have now made animation artists' lives easier by developing a versatile new input device. Artists can use the "joystick" with integrated sensors to move and pose virtual characters, formed of modular building blocks. The blocks can resemble any virtual character, like a human, dog or elephant, or even single body parts like arms or a hand. Sensors in each joint measure the bending angle or degree of a twisting motion, and transfer this information to software that computes how the virtual characters should move. The researchers have made the blueprints for the device's building blocks freely available as Open Hardware, in the hope of fostering further research.
http://swissinnovation.org/news/web/2014/05-140626-85

Navigation Using Mobile Device Cameras

(ETH Zurich, July 23, 2014)



Google's Project Tango is developing the technologies needed to navigate indoors or outdoors using cameras on mobile devices, since as phones and tablets. ETH Zurich is a key partner in this project by testing its uses and contributing improvements to the algorithms. The prototype devices use an infrared light source and cameras to build a 3D model of the world and use it as a reference for navigation. A virtual world could be combined with the real world, or very precise navigation software, better than GPS, could be created. For example, one PhD student mapped the streets of Zurich with a prototype device. ETH Zurich has previous experience in this field, making it a perfect partner for the project.
http://swissinnovation.org/news/web/2014/05-140723-2f

Miniature Devices for Improved Location Awareness

(CSEM, July 30, 2014)

Short-range connectivity technologies such as Bluetooth are widely deployed and experience rapid market growth. Whereas they allow "plug-and-play" data exchange among connected objects, they suffer from poor distance

measurement capability. Establishing accurate location awareness is thus not possible, which poses a significant threat to the security of the communication. To improve location awareness, the ALBIREO project was now launched by CSEM along with SMEs 3db Access and Insight SiP. They are joining forces to develop miniaturized ultra-wideband (UWB) technologies for enabling precise positioning between connected devices. The Euro 1.6 million project is co-funded by the EU Eurostars program and will run for 26 months. The ALBIREO project aims at leveraging Impulse-Radio Ultra-Wideband (IR-UWB) technology into miniature wireless modules that allow accurate measurement of the distance between communicating devices, thereby enabling reliable distance-bounding communication protocols.
http://swissinnovation.org/news/web/2014/05-140730-60

6. Energy / Environment

Solar Impulse 2 Completed its Inaugural Flight

(swissinfo, June 02, 2014)

The second edition of the Swiss solar-powered plane - the Solar Impulse 2 - has completed its inaugural flight at the beginning of June in Payerne, western Switzerland. According to the organizers the aircraft, that is propelled by four electric motors powered by 17,200 solar cells, stayed in the air for two hours and 15 minutes, reaching an altitude of 2,400 meters. With the second prototype, the pilots expect to be able to fly five days and five nights. That flight time would allow them to cross the Pacific or Atlantic Ocean without landing. Borschberg and Piccard plan to take Solar Impulse 2 on an around-the-world flight next year.
http://swissinnovation.org/news/web/2014/06-140602-b2

Towards a Robust Renewable Energy System in Europe

(ETH Zurich, June 06, 2014)

Writing in the ETH Zukunftsblog, Johan Lilliestam, Chair of the Human-Environment Systems Group at the ETH Zurich, is confident that a system based on both wind and solar power, together with improvements to the existing grid system will increase the resilience of the European energy system. Encouraged in part by the the Intergovernmental Panel on Climate Change's recent assessment report on the potential of renewable energy sources to mitigate climate change, Lilliestam believes that weather extremes are unlikely to affect wind and photovoltaic energy generation. This is not the case for nuclear and thermal energy generation, whose viability is temperature-sensitive. Additionally, the vulnerability of the power distribution grid should also be addressed in the long run in order to prevent future power outages caused by extreme weather or simple failures in the grid if Europe is to have a more robust energy system in the future.
http://swissinnovation.org/news/web/2014/06-140606-69

New Green Sustainable Cement

(EPFL, June 04, 2014)

An EPFL-led research team is developing a new sustainable blend of low-carbon cement that promises to reduce the carbon footprint of concrete by up to 40%. Cement production accounts for almost ten percent of human CO2 emissions and is bound to increase further with a predicted doubling of the global demand for cement by 2050, driven by growing demand in emerging economies, such as India, China, and Brazil. This new blend substitutes up to half of the usual Portland cement used to make concrete with highly abundant clay and limestone, promising to reduce cement-related CO2 emissions by up to 40%. This project has received CHF 4m funding from the Swiss Agency for Development (SDC) to do the necessary research and testing for the introduction and standardization of the new low-carbon cement Limestone Calcined clay Clinker Cement (LC3)
http://swissinnovation.org/news/web/2014/06-140604-a7

Magma Mapping

(ETH Zurich, June 10, 2014)

Researchers want to create a high-resolution, three-dimensional image of the magma system that feeds the Mount St. Helens volcano down to a depth of 60 km to 70 km. Over the coming summer, they will install more than 2,500 seismometers to monitor the seismic activity in a 1,000 km2 area surrounding the volcano. To take magnetotelluric measurements, they will position several thousand probes that register electrical and magnetic fields and

they will detonate explosive charges positioned in 25 metre-deep drill holes at several locations around the mountains. This will generate seismic waves that are reflected or deflected on the rock; the different reflections can then be measured and will provide useful data on the structure of the sub-surface. The more scientists know about the structure of the magma system below Mount St. Helens, the better they will be able to read the warning signs that magma is rising and that an eruption might be imminent.
http://swissinnovation.org/news/web/2014/06-140610-4c

Study Finds High Levels of Pollutants in European Rivers

(swissinfo, June 16, 2014)

According to a new study published in the United States scientific journal Proceedings, the pollution in European rivers is greater than previously estimated. Scientists from Switzerland, Germany and France analyzed samples from 4000 measuring points in 91 European rivers, including the Rhine and the Rhône. They found worrying quantities of chemical substances originating, among else, from the use of agricultural pesticides and purification plants. Some of the chemicals found, including ozone compounds, brominated flame-retardants and polycyclic aromatic hydrocarbons, present considerable environmental risks. Study leader Ralf Schäfer called for action on all levels, specifically the use of fewer chemicals in agriculture and an improvement of water purification plants.
http://swissinnovation.org/news/web/2014/06-140616-76

European Agrarian Reform: Insufficient Protection for Biodiversity

(University of Bern, June 11, 2014)

In a study in cooperation with researchers from the University of Bern, a consortium of scientists finds that the new European Agrarian Reform fails to properly protect the biodiversity. In December 2013, the European Union (EU) enacted the reformed Common Agricultural Policy (CAP) for 2014–2020, allocating almost 40% of the EU's budget and influencing management of half of its terrestrial area. Many EU politicians are announcing the new CAP as “greener,” but the new environmental prescriptions are so diluted that they are unlikely to benefit biodiversity. Individual Member States (MSs), however, can still use flexibility granted by the new CAP to design national plans to protect farmland habitats and species and to ensure long-term provision of ecosystem services.
http://swissinnovation.org/news/web/2014/06-140611-6a

Reducing CO2 emissions through sustainable food

(EMPA, June 16, 2014)

In 2012 the catering concern SV group launched the climate protection program ONE TWO WE in cooperation with the environmental organization WWF. The program aims to reduce the energy consumption and CO2 emissions of participating restaurants and canteens by introducing several criteria for the meals served. These criteria include, among else, a focus on locally produced raw materials, seasonal menus and the use of more energy efficient kitchen appliances for food preparation. The Empa who became a partner in the program in November 2013 is now reporting first results. The introduction of the above-mentioned criteria in their staff restaurants resulted in a reduction of CO2 emissions by 6%, compared to the same period last year.
http://swissinnovation.org/news/web/2014/06-140616-7a

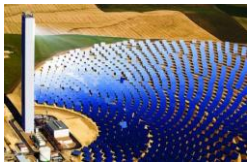
Using Seismic Background Noise to Reveal the Earth’s Structure

(ETH Zurich, June 18, 2014)

The picture of what is going on beneath the earth surface has been evolving over recent years. Geophysicists have refined the rough breakdown of the earth’s insides using the analysis of seismic waves generated during earthquakes. Most of the time the only thing recorded by seismographs however, is chaotic background noise. Andreas Fichtner, assistant professor of computer-based seismology, has now devised a new way to analyze this previously useless data. By comparing data from one station with others and correlating them he found a way to filter out signals. After computing hundreds of thousands of such correlations the background noises resemble earthquake-like signals that can be analyzed. Fichtner hopes that analysis of the vast amounts of data can yield a more accurate picture of the earth, as well as give us some insight into the factors that produce the chaotic background signals.
http://swissinnovation.org/news/web/2014/06-140618-72

Study on Solar Power as Viable Alternative

(ETH Zurich, June 22, 2014)



Solar energy systems that use photovoltaic cells can be unreliable since there is no constant supply of sunlight and it is hard to store the collected energy. However, concentrating solar power (CSP) stores the energy as heat that, when electricity is needed, powers turbines to generate electricity. Publishing in Nature Climate Change, ETH Zurich scientists from the Environmental Systems Science Department are the first to present a study on the potential of a large-scale CSP system to fulfil the energy needs of four regions around the world. Considering electricity demand, costs, weather, and plant locations, they simulated the operation of a CSP network and identified the Mediterranean Basin and the Kalahari Desert as regions in which such systems would be most viable.
http://swissinnovation.org/news/web/2014/06-140622-33

No-till Farming to Lower Regional Temperatures

(ETH Zurich, June 23, 2014)

A study conducted by researchers at the ETH Zurich's Institute for Atmospheric and Climate Science has shown that leaving fields unploughed after harvests can mitigate extreme temperatures during heat waves. This is thanks to a greater albedo effect since stubble and crop residues are lighter in color than tilled soil, and therefore reflect more solar radiation. Indeed, as much as 50% of incoming solar radiation can be reflected by unploughed fields compared to 20% by ploughed fields. This can reduce local temperatures by up to 2 °C. The scientists also found that the additional cooling effect caused by slower evaporation in unploughed fields would be another reason for farmers to employ no-till methods. Their studies were conducted using model simulations for Europe and measurements from farmland in France, and have been published in the journal PNAS.
http://swissinnovation.org/news/web/2014/06-140623-5b

Impact of Selective Logging in Tropical Forests Underestimated

(ETH Zurich, July 31, 2014)

Until now the selective logging of single trees in tropical forests was seen as relatively sustainable. However, a new study published by an international team of researchers shows that this is not necessarily the case – it is in fact the intensity of selective logging that determines the impact on biodiversity. The researchers have analyzed the data from 50 independent tests and conclude that the current view of selective logging in tropical forests is too optimistic. In particular, a logging intensity of 38 m3 ha−1 would cause halving of mammal richness, and a logging intensity of 63 m3 ha−1 would cause halving of amphibian richness. While the species richness of birds increases with logging intensity, this is largely due to the influx of habitat generalists at the cost of diversity for species specialized in forest habitats.
http://swissinnovation.org/news/web/2014/06-140731-f7

7. Engineering / Robotics / Space

Swiss-made camera on its way to ISS

(NZZ, July 30, 2014)

A European space freighter that brings provisions, scientific equipment, and fuel to the ISS also carries a camera made by Swiss space technology company RUAG. The camera is to film the burning up of the Automated Transfer Vehicle (ATV) when it re-enters the atmosphere. Before that, the ATV will remain docked with the ISS for a certain time and be filled with rubbish. The Swiss infrared camera will document the heating up of the interior structure before the craft breaks and burns up due to frictional heat and air resistance. The evaluation of the images will be done in collaboration with ETH Zurich. Besides the camera some other parts of the space freighter were built in Switzerland, too.
http://swissinnovation.org/news/web/2014/07-140730-2a

Data from Asteroid Vesta Challenges Theories of Planet Formation

(EPFL, July 16, 2014)

EPFL researchers have a better understanding of the asteroid Vesta and its internal structure, thanks to numerical simulations and data from the space mission Dawn. Their findings question contemporary models of rocky planet formation, including that of Earth. With its 500 km diameter, the asteroid Vesta is one of the largest known planet embryos. It came into existence at the same time as the Solar System. Spurring scientific interest, NASA sent the Dawn spacecraft on Vesta's orbit for one year between July 2011 and July 2012. Data gathered by Dawn led the researchers to the conclusion that the asteroid's crust is almost three times thicker than expected. These results challenge a fundamental component in planet formation models, namely the composition of the original cloud of matter that aggregated together, heated, melted and then crystallized to form planets.
http://swissinnovation.org/news/web/2014/07-140716-f3

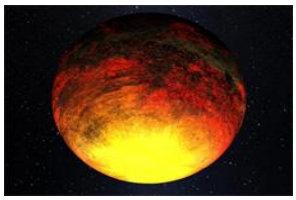
Finding Survivors of Natural Disasters with Drones

(Forbes, July 28, 2014)

A team of EPFL students are working on using drones to help locate survivors of natural disasters through their mobile phones. Even though the project has just started, the drone's ability to detect data packets from mobile phones could have been demonstrated. The drones work with a customized computer interface that detects mobile phones on the ground. The project is seen to help search and rescue in the aftermath of an earthquake or natural disaster as the search for victims is normally very difficult and the density of mobile phones is high even in less economically developed countries. With the replacement of the WiFi antenna with an Avalanche Victim Detector the drones could also be used for first avalanche searches.
http://swissinnovation.org/news/web/2014/07-140728-27

New Mega-Earth Discovered

(University of Geneva, June 02, 2014)



An international team of scientists led by the University of Geneva and comprising scientists from the Harvard-Smithsonian Center for Astrophysics has discovered an earth-like planet weighing 17 times as much as Earth and made of rock. Previously to the discovery scientists thought that planets with a similar mass would be made of a dense atmosphere composed of helium and hydrogen. Furthermore, Kepler-10 system, where the mega-Earth Kepler-10c is located, has formed less than 3 billion years after the Big Bang. "Finding Kepler-10c tells us that rocky planets could form much earlier than we thought. And if you can make rocks, you can make life," says Sasselov. Although the newly discovered planet has similarities to the Earth, it is not believed to harbor life.
http://swissinnovation.org/news/web/2014/00-140602-c6

Growing Moss in Space

(University of Zurich, June 21, 2014)

Mosses are amongst the most resilient known plants. The University of Zurich has now started a research project to investigate whether mosses could survive in Space or grow on Mars in collaboration with the University of Potsdam and the International Space Station ISS. The mosses from the families of liverworts and cushion mosses were collected in Kazakhstan and will be the first plants to be exposed to directly space after being transported there by a Russian Sojus rocket on July 23, 2014. The places will remain on the ISS for up to 18 months before they will be returned to earth for a DNA and protein analysis.
http://swissinnovation.org/news/web/2014/07-140621-0b

Integrating PHD Programs in Machine Learning

(ETH Zurich, June 19, 2014)

The machines surrounding us in everyday life are becoming more intelligent, even becoming gifted learners that can adapt based on experience. 'Machine learning' has become an established part of research into artificial intelligence. As a key technology, it is applied in various disciplines like robotics, automatic image recognition, 3D image reconstruction, automatic text analysis and the design of artificial systems based on natural ones that adapt to their environment. To educate the next generation of computer scientists in this rapidly changing area of research, ETH Zurich and the Max-Planck-Institute for Intelligent Systems (MPI-IS) have founded

the "Learning Systems" research network. They aim to integrate the PhD programs in this area offered by the two institutes, thereby fostering fruitful research partnerships and innovation.
http://swissinnovation.org/news/web/2014/07-140619-e1

New Posture Correcting Device

(20min, June 21, 2014)

Bad posture from excessive sitting and computer use can lead to chronic back and shoulder problems. A joint Swiss and Israeli company developed a device called Upright, which mounts to a user's lower back, senses the position of the spine, and alerts the user through a vibration when posture is bad. The device connects to a mobile phone, which provides a training program to gradually strengthen muscles and improve posture. The company claims that muscles will be strong enough for good posture after two to three weeks, and shortly thereafter the device won't be needed anymore. They also point out that good posture helps improve one's self-image.
http://swissinnovation.org/news/web/2014/07-140621-09

Autonomous Shuttle Fleet Tested at EPFL

(startupticker, July 18, 2014)

The Lausanne-based company BestMile is testing a public transport system comprising autonomous unmanned vehicles on the EPFL campus. This represents the public experimentation phase of the five-year CATS project, launched in January 2010 . The project, funded by the European Commission for about 3 million euros, is coordinated by the GEA and Vallotton Chanard urban planning office in Lausanne and brings together scientists and institutional partners, including the EPFL. Three vehicles will run for four weeks, connecting the Rolex Learning Center to the EPFL Innovation Park and serving a local hotel and student residences. This demonstration is an important step in the deployment of innovative transport systems, since it could result in the world's first robotic public transport system.
http://swissinnovation.org/news/web/2014/07-140718-79

Robotic Exoskeleton Kick Off

(EPFL, June 13, 2014)

A young paraplegic equipped with a robotic exoskeleton kicked off the FIFA World Cup. The exoskeleton weighs 60 pounds, is equipped with hydraulic motors and is controlled by thought through a helmet outfitted with electrodes. The paraplegic patient in control of the exoskeleton is typically unable to know the position of his legs in space, the height of each step, or the intensity of his stride. Researchers developed a system to give the patient sensory information by transmitting it as vibrations to the upper body. Electronic armbands placed on the forearm generate vibrations when walking. Induced by sensors placed under the patient's feet, these vibrations vary in intensity depending on whether the foot is in contact with the ground or according to the position of the legs during the stride. At each step, the necessary information is transmitted to the pilot of the exoskeleton.
http://swissinnovation.org/news/web/2014/07-140613-7b

Students Built Energy Efficient Boats for Naval Competition at EPFL

(EPFL, July 23, 2014)

Within a workshop for the HydroContest competition, students from all over the world gathered in the garden of the Nautical Center of the University of Lausanne and EPFL to compete their very different boats. The requirements were that the boats must be as energy efficient and operational as possible within a certain size limit. The 1200W electric motor and batteries were provided by the organizer. To make it even more difficult one of the rounds required a 200 kg load, the second one only 20 kg. And they must cover distances from 400 to 600 meters in a record time. The idea behind the competition was to make young engineers face the challenges encountered by maritime transport of goods.
http://swissinnovation.org/news/web/2014/07-140723-09

8. Physics / Chemistry / Math

Hydrogen into liquid - "fuel of the future"

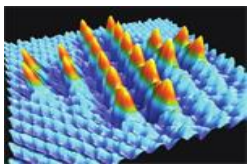
(EPFL, June 03, 2014)

EPFL scientists have developed a simple system based on two chemical reactions to transform hydrogen gas into a less flammable liquid fuel that can be safely stored and transported. Hydrogen - or as some call it, the "fuel of the

future" - has serious issues in terms of safety, logistics, and profitability owing to its highly explosive nature. The scientists have therefore developed a cycle which in the first step transforms hydrogen into formic acid, a liquid that is easy to store and less flammable than gasoline, while the second reaction does the reverse and restores the hydrogen. The researcher envision small energy storage units in which the current from photovoltaic cells produces hydrogen by electrolysis, which is then transformed and stored as formic acid, and finally transformed back into hydrogen to produce electricity at night-time.
http://swissinnovation.org/news/web/2014/08-140603-5b

Swiss Cross – Made of 20 Single Atoms

(University of Basel, July 15, 2014)



The manipulation of atoms has reached a new level: Together with teams from Finland and Japan, physicists from the University of Basel were able to place 20 single atoms on a fully insulated surface at room temperature to form the smallest "Swiss cross". Together with theoretical calculations the scientists were able to identify the novel manipulation mechanisms to fabricate unique structures at the atomic scale. The study thus shows how systematic atomic manipulation at room temperature is now possible and represents an important step towards the fabrication of a new generation of electromechanical systems, advanced atomic-scale data storage devices and logic circuits. The academic journal Nature Communications has published their results, doi: 10.1038/ncomms5403
http://swissinnovation.org/news/web/2014/08-140715-0a

Clearer View of the Electronic Structure of Matter

(University of Fribourg, June 03, 2014)

Physicists at the University of Fribourg, collaborating with researchers from the Paul Scherrer Institute, have developed a new experimental method for studying the electronic structure of matter using a beam of X-rays. The research results have been published in Physical Review Letters. The new method overcomes the problem of the "self-absorption effect" that occurs when viewing dense samples in the usual way using X-ray absorption spectroscopy (XAS). Called HEROES (High Energy-Resolution Off-resonance Spectroscopy), the new method is insensitive to the effect of self-absorption and measures an absorption spectrum in less than a second, allowing the dynamics of chemical reactions to be studied. It opens up new opportunities for promising research in many disciplines in the natural and life sciences.
http://swissinnovation.org/news/web/2014/08-140603-7d

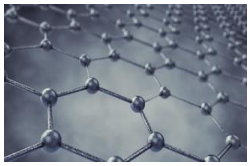
Cloud Formation Process Elucidated

(CERN, June 06, 2014)

Following a series of experiments as part of the Cosmics Leaving Outdoor Droplets (CLOUD) project, scientists at CERN have discovered that cloud formation in the lower atmosphere is the result of oxidized vapours emitted by trees interacting with sulphuric acid to form seeds on which cloud droplets can form. This important discovery was recently published in Science and could not have been possible without CERN's special CLOUD chamber, which has allowed scientists to conduct experiments under precisely controlled atmospheric conditions in the laboratory. Hitherto, cloud droplet formation has been poorly understood, and this has had serious repercussions for climate modelling and therefore studying climate change. Thanks to their findings, the influence of these vapours and sulphuric acid aerosols on cloud formation can now be explained – a process which was previously thought to not significantly depend on the latter.
http://swissinnovation.org/news/web/2014/08-140606-70

Optimizing Graphene Circuits

(EPFL, June 06, 2014)

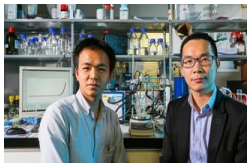


Graphene is a much sought-after material; its many useful properties include extraordinary strength and electrical and thermal conductivity. Therefore it is often used in circuits, where its performance is determined by the circuit design and the quality of the material. In order to optimize a given system, scientists and engineers are forced to play around with these two parameters, but now thanks to scientists at the EPFL who recently published in Nature Photonics, it has been discovered that the maximum theoretical efficiency of a system is solely dependent on graphene quality. This means that for a certain quality of graphene, optimizing system design is the only way to approach this maximum. The researchers went on to develop a method to determine which design

would be most appropriate for a given quality, effectively providing a 'manual' for industry and other researchers to optimize their graphene circuits. Their methodology has the potential to be applied to a wide range of other materials.
http://swissinnovation.org/news/web/2014/08-140606-44

Improved Catalysis of Water-Splitting Reactions for Hydrogen Production

(EPFL, July 21, 2014)



Scientists at EPFL have developed a method for improving the catalysis of water-splitting reactions used for storing wind and solar energy. The method chemically peels off the outermost surface of a catalyst, thereby maximizing its active surface for the reaction. A major challenge in renewable energy is storage. A common approach is a reaction that splits water into oxygen and hydrogen, and uses the hydrogen as a fuel to store energy. The efficiency of 'water splitting' depends heavily on a solid substance called a catalyst. However, only the surface of the catalyst acts on the reaction, while its bulk is inactive. This restricts how much catalyst can be used, and limits the efficiency of water splitting in energy systems. Their data, which show 2.6- to 4.5-fold increase in water-splitting efficiency, pave the way for cheaper and more efficient renewable energy storage.
http://swissinnovation.org/news/web/2014/08-140721-6a

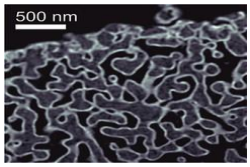
Fast Optimization of Optical Circuits

(EPFL, June 18, 2014)

Optical circuits are analogous to electronic circuits, except that they use photons instead of electrons to carry information. One important component is the photonic crystal nanocavity (PCN), which acts as a control gate for photons, trapping them for short periods of time. PCN quality is measured by how long light can be trapped, and optimizing the design is a challenge. Researchers at EPFL have developed new methods that can simulate a PCN in minutes instead of hours, along with an evolutionary optimization that converges to an optimized design by recombining PCN structures into new ones and keeping the best ones, over several iterations, similar to natural evolution. The designs have reached high quality levels in practice.
http://swissinnovation.org/news/web/2014/08-140618-c3

World Record Resolution in X-Ray Tomography

(PSI, June 11, 2014)



Researchers from the Paul Scherrer Institut (PSI) have devised a method that opens up new scales of tomographic imaging and will thus make the detailed study of representative volumes of biological tissue and materials science specimens possible in future. Until now, the relevant details on a scale of a few nanometres were only visible with methods that required very thin samples. With the aid of a special prototype set-up at the PSI's Swiss Light Source (SLS) the researchers have now achieved a 3D resolution of sixteen nanometres on a nanoporous glass test sample, a feat that is unmatched for X-ray tomography. The measurement is non-destructive, so it allows to study small details in the context of their surroundings or to analyse larger sample volumes in such a way that the information obtained is influenced less by locally induced variances.
http://swissinnovation.org/news/web/2014/08-140611-bf

SwissFEL – Lightning Bolts for the World of Science

(NZZ, July 25, 2014)

The construction for the X-ray laser in the Swiss canton of Argau is well on track to its completion in 2016. The construction workers are already covering the 800 metre long aisle that was previously cut into the forest with gravel and earth in order to create a natural habitat for endangered species. Once completed, SwissFEL will deliver extremely short and intense flashes of X-ray radiation of laser quality. These properties will enable novel insights to be gained into the structure and dynamics of matter illuminated by the X-ray flashes. It will then be possible at SwissFEL, for example, to follow step-by-step how the smallest components of a substance separate during a chemical reaction and then recombine to create a new substance.
http://swissinnovation.org/news/web/2014/08-140725-1e

Producing Hydrogen with Sunlight collected by "Artificial Moth Eyes"

(EMPA, June 18, 2014)

All over the world researchers are investigating solar cells which imitate plant photosynthesis, using sunlight and water to create synthetic fuels such as hydrogen. Empa researchers have developed such a photoelectrochemical

cell, drastically increasing its light collecting efficiency. The cell is made of cheap raw materials – iron and tungsten oxide. A special microstructure on the photoelectrode surface literally gathers in sunlight and does not let it out again. The basis for this innovative structure are tiny particles of tungsten oxide which, because of their saturated yellow color, can also be used for photoelectrodes. In principle the newly conceived microstructure functions like the eye of a moth. The eyes of these night active creatures need to collect as much light as possible to see in the dark, and also must reflect as little as possible to avoid detection and being eaten by their enemies.
http://swissinnovation.org/news/web/2014/08-140618-73

New Dicarbon Energy State Discovered

(Paul Scherrer Institute, July 01, 2014)

Scientists at the Paul Scherrer Institute have discovered a new 'dark' energy state in dicarbon, a molecule consisting of two carbon atoms that is present in all carbon-containing flames, in stars, and in interstellar dust. The energy state has been very difficult to discover, but the scientists were able to do so with a specialized laser spectroscopy instrument. First, they created a high speed stream of dicarbon in a vacuum chamber, and then illuminated it with three lasers that precisely excite it to the desired energy state. In turn, the dicarbon emitted laser light, which could be measured to determine its spectrum. Interestingly, the new state cannot be excited directly, but only through other states, thus making it dark.
http://swissinnovation.org/news/web/2014/08-140701-00

Fermions Formed from Direct Decay of Higgs Boson

(University of Zurich, June 22, 2014)

Evidence that the Higgs particle decays directly to form fermions has recently been published in Nature Physics by a team of scientists working on the Compact Muon Solenoid (CMS) experiments at CERN's Large Hadron Collider together with scientists at the University of Zurich. It is now known that the Higgs particle decays to form both fermions and bosons, which form the matter and act as force carriers respectively. The study, which confirmed the prediction that the mass of the fermions is proportional to their interaction strength with the Higgs field, lends further support to the 2012 discovery of the particle, since its behavior conforms to that of the Higgs boson in theory.
http://swissinnovation.org/news/web/2014/08-140622-06

Professor Will Swim Entire Rhine

(Eawag, July 24, 2014)

To raise money for new analysis equipment and for water research at his institute, a German chemistry professor will swim the entire Rhine from the Swiss mountains to Rotterdam. But that is not the only goal of his mission. By taking water samples all along the way the changes in Rhine water quality along the whole stretch can be documented. The scientist will cover almost 50 kilometers distance a day. The project will be supported by the aquatic research institute Eawag that is convinced to get worthwhile results. By this means information about contamination and distribution of material can be collected along the entire length of the river and not only from the static monitoring stations. The evaluation of the samples will be presented in late autumn.
http://swissinnovation.org/news/web/2014/08-140724-a3

9. Architecture / Design

Metropolitan Museum Rooftop Garden: ETH Zurich in the Big Apple

(ETH Zurich, June 24, 2014)

Hailed by the New York Times as an idea 'so perfect', 'The Roof Garden Commission: Dan Graham and Günther Vogt', better known as the ' Hedge Two-Way Mirror Walkabout' is the latest installation on the roof of the Metropolitan Museum. According to ETH Zurich Professor of Landscape Architecture Günther Vogt, it is 'simply one-of-a-kind': a garden evocative of suburbia situated in the middle of the bustling city with views of the Manhattan skyline and Central Park. The installation consists of a pavilion made of S-shaped glass that creates distorted mirror images; at times it reflects the viewer but other times the skyline, thereby creating a unique experience for its visitors. Vogt's important role in the technical aspects of the installation, including work on its design

and furniture, is unsurprising given his previous collaborations with artist Graham on installations in Switzerland and France. The exhibition will run until early November.
http://swissinnovation.org/news/web/2014/09-140624-ab

Urban Park along the Rhine River

(ETH Zurich, July 17, 2014)

Near the border with its neighbors Germany and France, the city of Basel has the Klybeck island in the Rhine River. It has been used as an industrial site, but is ripe for redevelopment. Landscape architecture students at ETH Zurich designed "Beach Bank Basel", an urban park that provides swimming, sunbathing, and recreational opportunities for the residents of Basel. The park would lie on the southern half of the island, with new residential development taking up the northern portion. Bridges provide access for public transportation and pedestrians.
http://swissinnovation.org/news/web/2014/09-140717-6b

"House of Natural Resources" built by the ETH Zurich

(Hochparterre, July 18, 2014)

The ETH Zurich currently builds a new office building which also acts as a laboratory for sustainable construction. The so called "House of Natural Resources" will b e inaugurated in Mai 2015 and is highly innovative. For the six ETH professors, realizing different research projects at the building site, it was very important to use Swiss hardwood as due to Global warming this type of wood increases in Swiss forests. Until now the lion's share of Swiss hardwood is used to gain energy and not for construction even though it has a considerable potential in this new field of application. Currently along with the "House of Natural Resources" other research projects, such as solar cells or an adaptive solar front, are in planning.
http://swissinnovation.org/news/web/2014/09-140718-b9

Winner of Accelerate@CERN programme

(CERN, June 18, 2014)

The European Organization for Nuclear Research, CERN, announced the first winners of the Laboratory's Accelerate@CERN award. The country-specific one-month research grants were handed out to artists from Greece and Switzerland. A jury comprising the funders of the award in the specific category and representatives from CERN determined the winners in the fields of Visual Arts and Interactive Web Art. The Greek Nikos Papadopoulos was recognized for his work in the field of Visual Arts, while the Swiss interactive designer Nadezda Suvorova and game designer Mario von Rickenbach were awarded the price for Interactive Web Art. Next year, the Accelerate@CERN award will be handed out in the categories Choreography and Digital Programming.
http://swissinnovation.org/news/web/2014/09-140618-38

A Village without Fossil Fuels is Possible

(ETH Zurich, July 21, 2014)

Zernez, a Swiss village located in the Engadine, recently launched the project Energia 2020. This interdisciplinary project involves ETH Zurich researchers from six different fields. The undertaken feasibility study showed that the goal of only using renewable energy sources for buildings in the municipality and thus reducing CO2 emissions to zero is technically possible without compromising the townscape. Besides the necessary refurbishment of buildings and the conversion of traditional heaters to woodchip heating and heat pumps, the village should increase its amount of power produced locally from renewable sources. With a higher densification in the village center cooperation projects between new and old buildings would be feasible. Hence, not all buildings would have to be upgraded what makes the important preservation of the townscape possible.
http://swissinnovation.org/news/web/2014/09-140721-1c

Venice Time Machine

(EPFL, June 23, 2014)

Researchers at EPFL in collaboration with Ca'Foscari University are in the process of digitizing, transcribing, and indexing the entire collection of the State Archives of Venice in their construction of what is known as the Venice Time Machine. Currently occupying 80km of shelves, the collection dates back over a thousand years and consists of administrative documents such as birth certificates, maps, urban planning designs, and tax statements. By using Big Data methods to transform all these documents into a digital information system, Frédéric Kaplan of the EPFL's Digital Humanities Lab anticipates creating a comprehensive simulation of the Venice of the past capable of model-

ling its information, commercial, and social networks; a revolutionary step in the field of humanities research and an exciting intersection of disciplines across the arts, sciences, and technology.
http://swissinnovation.org/news/web/2014/09-140623-79

Bamboo Might Replace Steel in the Future

(NZZ, July 27, 2014)

Since 2010 ETH Zurich runs the "Future Cities Laboratory" in Singapore where some 100 scientists research on environmentally friendly living in future urban centers. A team of architects, engineers, chemists and wood engineers are currently trying to use bamboo fiber as a steel substitute. Bamboo grows on site, is cheap and the fibers are twice or even three times as strong as steel. But there were still a couple of hurdles to clear: the raw material interacts with the environment and is susceptible to insect and fungal infestations. Hence, the scientists mix the bamboo fiber with adhesive and press the mixture in the desired shape. The new material will soon be tested with an exemplary building element.
http://swissinnovation.org/news/web/2014/09-140727-0a

10. Economy, Social Sciences & Humanities

Plotting Cultural History

(ETH Zurich, July 31, 2014)

Using statistical methods, an extensive database of the places of birth and death of significant cultural individuals can be used to calculate the cultural significance and interaction of locations in Europe and North America over a period of 2,000 years. This was the conclusion reached by a seven-member research team from ETH Zurich, Northeastern University in Boston and the University of Texas at Dallas. The mobility patterns show, for example, how America was gradually colonised following its discovery, with a strong migration tendency towards places such as Hollywood on the west coast. In Europe, the lion's share of cultural development finds its start in Rome. With this study, the researchers hope to contribute to overcoming the traditional prejudices, which tend to exist between the natural sciences and the arts and humanities and to demonstrate that an interdisciplinary collaboration can lead to new insights.
http://swissinnovation.org/news/web/2014/10-140731-c9

Important Free Trade Agreement between Switzerland and China Takes Effect

(swissinfo, July 01, 2014)

Lately a key free trade agreement between Switzerland and China entered into force. The accord, which the economics ministry says to be the most important free trade agreement for Switzerland's export industry since 1972, was signed last year already. After the EU and the US China is the third most important trade partner for Switzerland, with a trade volume of $22.5 billion in 2013. Although the festivities were not in the interest of everyone – several protests and demonstrations took place in Switzerland – especially pharmaceutical, chemical and biotech industries see the deal as a very important step to improve the competitive edge of Swiss companies.
http://swissinnovation.org/news/web/2014/10-140701-c1

Switzerland's Poverty Rate Barely Moved

(swissinfo, July 15, 2014)

In 2012 the number of people below the poverty line remained quiet stable compared to the previous year. The affected 590,000 people correspond to 7.7 percent of all Swiss households. Roughly 4.5 percent of the affected people face poverty even though they were in employment. The poverty threshold in Switzerland has been set at an income of $2,460 for single people or $4530 for a household with two adults and two children. International measmeasurements of poverty indicate Switzerland a poverty rate of 15.9 percent which is below that of the European Union (16.9%). Especially low is the Swiss rate of extreme poverty with only 0.8 percent compared to the 9.9 percent in the EU.
http://swissinnovation.org/news/web/2014/10-140715-a3

11. Technology Transfer / IPR / Patents

Swiss Eye – Better than StreetView

(FHNW, July 25, 2014)

Google is not the only company with a digital eye on the streets of Switzerland. Currently, iNovitas, a spin-off of the University of Applied Sciences and Arts Northwestern Switzerland FHNW is digitizing the 300km of streets in Basel. Their car creates high-resolution stereoscopic images that will be used to reconstruct a complete 3 dimensional map of the canton. The data produced by the vehicles shows how much detail is collected by iNovitas: A single day of recording produces 2TB of images. Because the project has been commissioned by the federal state of Basel, congested roads are closed in order to allow for a view that is not blocked by other traffic.
http://swissinnovation.org/news/web/2014/11-140725-d4

Europa Award to Evrything for Hottest Tech Startup

(startupticker, June 11, 2014)

The Europas are the premier awards for Europe's hottest tech startups, as judged by the industry. While it concentrates on the newest companies on the scene, it also brings together the mid and late stage technology startups, as well as leading investors and media in the EMEA region. The award ceremony for this year's edition took place yesterday in London. Evrythng was honored as "Best Internet of Things Startup". Evrythng is a Web of Things software company, making products smart by connecting them to the Web. Companies use Evrythng's software-as-a-service to manage their connected products, make product operations smarter with real-time tracking analytics, and help their customers connect to products in a smarter way.
http://swissinnovation.org/news/web/2014/11-140611-30

Swiss Federal Train Company Awarded for Start-Up Program

(startupticker, June 16, 2014)

The Swiss Federal Train Company (SBB) has been awarded with the Swiss CRM Innovation Award 2014 for their new business model for the development of new digital products in the service of their customers. In a special program, the SBB actively seeks and encourages partnerships with new start-ups and gives them access to their customer base in Switzerland. This allows for new products to quickly reach a sizable market, and results in faster innovation than just by in-house efforts by the SBB.
http://swissinnovation.org/news/web/2014/11-140616-81

New Microtechnology Research Hub for Watch Sector

(swissinfo, June 20, 2014)

Microcity is a new microtechnology research hub in Neuchatel, in the heart of the Swiss watch industry. Several watch companies have funded new research chairs, and innovations are starting to emerge. One example is the Isospring, a continuously-turning oscillator, which, in comparison to traditional mechanical watch oscillators, is more efficient, more accurate, and quieter. The canton has supported this new hub, but it has to compete against others across Europe. While the hub is innovative, some analysts caution that the regional economic situation is less than ideal, and the watch industry has seen reduced growth, as compared to recent years.
http://swissinnovation.org/news/web/2014/11-140620-84

Start-Up Boom in Switzerland

(startupticker, July 16, 2014)

In the first half of 2014, there were 5% more new companies founded and 10% fewer bankruptcies reported in Switzerland, according to a study published by Bisnode. In absolute numbers, there were 21206 new companies founded – 948 more than in the first half of 2013 – and only 1756 companies went bankrupt. Overall, this shows a strong growth of entrepreneurship in Switzerland in the last three quarters, when compared to the averages of 2011 to 2013.
http://swissinnovation.org/news/web/2014/11-140716-ac

12. General Interest

The Era of E-books is yet to Come

(swissinfo, June 24, 2014)

E-books grow in popularity around the world and experts predict printed books will become obsolete in 20 years' time. Swiss people however, who normally have the money to buy the newest gadgets are slower in following the trend than others. The causes behind are numerous. Before even getting to download a book, there is a number of technical steps to go through. Availability of e-books is limited in Swiss languages. Similarly to other goods, e-books are more expensive when bought from a Swiss address. Finally, paperback books have a tradition in Europe, readers simply like to own, touch or smell a book. So the era of e-books in Switzerland is yet to come.
http://swissinnovation.org/news/web/2014/12-140624-fb

Swiss National Bank Closes Foreign Exchange Trade Deal with China

(20min, July 21, 2014)

The deal with the Chinese Central Bank will enable Switzerland to invest into the Chinese bonds market, and according to the president of the Swiss National Bank (SNB), will serve to stabilize the financial markets in both countries. Furthermore, this swapping agreement will provide the basis for building a Renminbi market in Switzerland, since the SNB will be able to acquire them directly if there aren't enough available in the Swiss market. Now it will be the job of the Swiss banks to offer attractive services in order to convince their customers to make Renminbi trades over the Swiss market.
http://swissinnovation.org/news/web/2014/12-140721-a4

10 Measures to Improve Framework for Start-Ups in Switzerland

(startupticker, June 17, 2014)

While Switzerland is one of the most innovative countries of the world, the existing framework for start-ups and entrepreneurs is far from perfect: 40% of the respondents in a survey of start-up founders would choose another country to start their company, given the choice to restart. The survey also identified 10 measures that should improve the conditions for entrepreneurs: 1) Tax exemption of private investments into start-ups; 2) Arrange the tax system to support start-ups; 3) Improve the employee-participation schemes; 4) Create a venture capital fund of hedge funds; 5) Create a second market in Switzerland; 6) Facilitate the development of a collaborative economy; 7) Implement a "start-up visa"; 8) Swiss small business act; 9) Reform the CTI; 10) A Swiss DARPA.
http://swissinnovation.org/news/web/2014/12-140617-0e

13. Calls for Grants/Awards

Call for Swiss Technology Award 2014

(startupticker, June 24, 2014)

Swiss entrepreneurs are invited to apply for the Swiss Technology Award 2014 - the leading technology prize decorating the best innovations and developments from Swiss entrepreneurs, universities and technical colleges. The price will be awarded in three categories on November 20, 2014 within the Swiss Innovation Forum (SIF) in Basel. The deadline for application: August 31, 2014.
http://swissinnovation.org/news/web/2014/13-140624-5c

New Prize for Start-Ups in Thurgau

(startupticker, June 27, 2014)

An association has now established a prize of CHF 15'000 for start-ups and young entrepreneurs in Thurgau. The prize with the name "START award" has now started a call for applications. The president of the "Startnetzwerk Thurgau", the association funding the prize, has expressed his desire to support young entrepreneurs and to improve the conditions for start-ups in the canton. The deadline for Application is mid September 2014.
http://swissinnovation.org/news/web/2014/13-140627-96

Announcement: 6th Startup Day at Forum EPFL

(Startupolic, July 08, 2014)

On October 8th the Startup Day at Forum EPFL will take place for the 6th time. The aim of this event is to connect EPFL young engineering talents with promising startups from Switzerland and abroad. Beside the presentation of the startups in booths there will be different presentations held by companies during that day. Startups from all the different fields are invited to register and benefit from this networking opportunity. The deadline for the registration is August 30, 2014.
http://swissinnovation.org/news/web/2014/13-140708-c8

Call: Match.Me.Up! Matches Startups with Experienced Professionals

(startupticker, July 25, 2014)

Match.Me.Up! is an interactive match making event for startups looking for experienced professionals to boost their business. The startups can present their business models in one minute pitches. The professionals then can sign up to meet their preferred startups in a dynamic speed-dating format. The event takes place on October 30 at Impact Hub Zürich. Application deadline for startups is August 20.
http://swissinnovation.org/news/web/2014/13-140725-a0

Call: Impact Hub Fellowship for Innovative Business Ideas in the Field of Energy-Cleantech

(startupticker, July 25, 2014)

Impact Hub Zürich and the Swiss Federal Office of Energy are looking for innovative business ideas in the field of energy-cleantech. The so called Impact Hub Fellowship aims to attract projects that have the potential to contribute to a more sustainable society. The organizing parties are mainly looking for projects in the field of energy efficiency, renewable energy, and energy storage and grids. The selected startups will be offered coaching, network access, workspace, and financial support at Impact Hub Zürich and Geneva. Application deadline is August 29.
http://swissinnovation.org/news/web/2014/13-140725-ac

Upcoming Science and Technology Related Events

Industry Day 2014
August 26, 2014
http://www.industryday.ethz.ch/
Research/Innovation
Zurich

NTN Swiss Biotech TecDay
August 28, 2014
http://www.swissbiotech.org/events
Biotech
Basel

World Innovation Day "Innovation for Health" (WID-I4H)
August 28-29, 2014
http://i4h2014.world-innovation-day.com/
Health
Geneva

20th International Mass Spectrometry Conference
August 24-29, 2014
www.imsc2014.ch
Analytical Chemistry
Geneva

BioTech 2014
September 4-5, 2014
www.biotech2014.ch
Bioprocess Analytics / Sensor Technology
ZHAW Wädenswil

International Congress on Education and Training
September 15-18, 2014
http://www.vpet-congress.ch/
Vocational & Professional Education and Training
Winterthur

ScienceComm'14
September 18-19, 2014
http://www.sciencecomm.ch/index.php/en/
Science Communication
Beromünster/Sursee

Zurich Game Festival
September 18-21, 2014
http://www.ludicious.ch/
Computer game industry
Zurich

Micro and Nano Engineering 2014
September 22-26, 2014
www.mne2014.org
Micro and Nano Engineering
Lausanne

3rd GRF ONE HEALTH SUMMIT 2014
October 5-8, 2014
http://onehealth.grforum.org/home/
Health
Davos

Swiss Biotech Fall 2014
October 7, 2014
http://www.swissbiotech.org/events#event:853
Biotech
Yverdon

2nd International SystemsX.ch Conference
October 20-23, 2014
http://conference.systemsx.ch/welcome/
Biology
Lausanne

SBA Academy
October 30, 2014
http://www.swissbiotech.org/events#event:849
Drug development
Berne

European Antibody Congress 2014
November 10-12, 2014
http://www.terrapinn.com/conference/european-antibody-congress/index.stm
Biology
Geneva

3rd annual World Biosimilar Congress
November 11-12, 2014
http://www.terrapinn.com/conference/biosimilar-congress/index.stm
Drug development
Geneva

NanoBioTech Montreux
November 17-19, 2014
http://www.nanotech-montreux.com/
Preclinical drug development
Montreux

EUREKA Innovation Event
November 19, 2014
http://www.swiss-innovation.com/eureka
Technology
Basel