SCS
Swiss Chemical
Society

Community News

www.scg.ch

www.chemanager-online.com

SWISS CHEMICAL SOCIETY NEWS

A Brief Review of the SCS Fall Meeting 2016

On September 15, 2016, the traditional SCS Fall Meeting took place at University of Zurich Irchel Campus, hosted jointly with ETH Zurich. The meeting attracted as many as 1'100 participants from academia, industry, and, for the first time ever, from education. With close to 600 scientific contributions, the Fall Meeting again offered a fantastic platform to the predominantly young scientists to meet peers as well as experts and specialists to discuss the results of their research. The one-day event also offers the opportunity to widen the scientific knowledge and to connect with researchers from other fields of chemistry or chemical biology.

In each of the eight thematic sessions, talks were given by awards winners, invited speakers and a representative of the session sponsor. All other oral contributions were from PhD students and post-doctoral fellows. The plenary sessions covered the lecture of our new honorary member, Prof. E. Peter Kündig, the Sandmeyer and Paracelsus Award Lectures, presented by a team of Sika researchers and Michel Graetzel of the EPF Lausanne.

Contributions per Session	**Posters**	**Talks**
Analytical Sciences	54	11
Catalysis Science & Engineering	62	11
Computational Chemistry	33	11
Inorganic & Coordination Chemistry	84	11
Medicinal Chemistry & Chemical Biology	68	13
Organic Chemistry	82	11
Physical Chemistry	53	12
Polymers, Colloids & Interfaces	51	11
Plenary Session	0	3
Total	**487**	**93**

For the first time, a session on Chemical Education was offered in the form of a symposium and workshop entitled "Future of Chemical Education" attracting 140 teachers from secondary school on upwards. The event, embedded in the Fall Meeting, marked the successful start of the initiative to implement a new SCS Division of Chemical Education. The four lectures and the four parallel workshops provided new ideas, new scientific topics as well as best practice in theoretical, practical and experimental chemical education.

Visit the website *http://scg.ch/fallmeeting/2016* to get more information about the program, the organizers, the sponsors and the exhibitors. The site also allows to access all abstracts or to browse through the picture galleries.

Awards for the best Oral and the best Poster Presentations

In collaboration with Metrohm AG and DSM Nutritional Products, SCS offered again a very attractive and prestigious award program for the best oral and the best poster presentations. The winners obtained CHF 500 in cash plus a travel voucher to attend a conference. Overall, during the 20 minute award ceremony more than CHF 40'000 change hand. This is probably the most higly renumerated award program in the field, and we are very proud and happy to cooperate with our sponsoring partners. We wish to express our sincere gratitude to the Metrohm Foundation and to DSM Nutritional Products Ltd for their generous support.

Dr. Markus Steinke, Vice President Marketing at Metrohm, awarded the following winners for their excellent oral presentations:

Analytical Sciences
– Winner: Rahel Bucher, University of Zurich
– Runner up: Lyndsey Hendriks, ETH Zurich

Catalysis Science & Engineering
– Winner: Waiz Karim, ETH Zurich/Paul Scherrer Institute
– Runner up: Vladimir Paunovic, ETH Zurich

Computational Chemistry
– Winner: Christopher Stein, ETH Zurich
– Runner up: Clelia Spreafico, ETH Zurich

Inorganic & Coordination Chemistry
– Winner: Deven Paul Estes, ETH Zurich
– Runner up: Suzanne Maria Jansze, EPF Lausanne
Medicinal Chemistry & Chemical Biology
– Winner: Olivia Paula Schmidt, University of Zurich
Organic Chemistry
– Winner: David Kossler, EPF Lausanne
- Runner up: Dominik Lotter, University of Basel
Physical Chemistry
– Winner: Dominik Józef Kubicki, EPF Lausanne
– Runner up: Maarten van Reijzen, EPF Lausanne
Polymers, Colloids & Interfaces
– Winner: Milad Radiom, University of Geneva
– Runner up: Ralph Z. Lange, ETH Zurich

For the ceremony of the Best Poster Presentation Award Dr. Roman Imhof of DSM joined the team and handed over the prices to the 24 winners.

Analytical Sciences
– Winner: Liviana Klein, ETH Zurich
– Runner up: Benjamin Spenger, EMPA
Elena-Diana Burghelea, HES-SO
Catalysis Science & Engineering
– Winner: Vincent Lebrun, University of Basel
– Runner up: Aswin Gopakumar, EPF Lausanne
Athanasia Tsoukalou, ETH Zurich
Computational Chemistry
– Winner: Gregor Nils Simm, ETH Zurich
– Runner up: Akshaya Kumar Das, University of Basel
Inorganic & Coordination Chemistry
– Winner: Marta Falcone, EPF Lausanne
– Runner up: Vivian Marina Merk, ETH Zurich
Thibaud Rossel, Gymnase français de Bienne
Medicinal Chemistry & Chemical Biology
– Winner: Fabian Brockmeyer, Northeastern University
Marc Heitz, University of Bern
– Runner up: Fahimeh Moradi-Afrapoli, University of Basel
Isabel P. Kerschgens, University of Zurich
Organic Chemistry
– Winner: Franck le Vaillant, EPF Lausanne
– Runner up: Santiago Lascano, University of Geneva
Yun-Suk Jang, EPF Lausanne
Physical Chemistry
– Winner: Marine Eva Fedora Bouduban, EPF Lausanne
– Runner up: Maximilian Beyer, ETH Zurich
Joseph Samuel Beckwith, University of Geneva
Polymers, Colloids & Interfaces
– Winner: Fabian Deuber, ZHAW
– Runner up: Yee Song Ko, EPF Lausanne
G. Nedelcu, ETH Zurich

We would also like to thank the award juries for their excellent work (see Fall Meeting Web site for their names and affiliation).

The prizewinners will present their award winning research in the Laureates Issue of CHIMIA 4/2017.

ILMAC 2016 – A convincing industry meeting point and specialist trade fair for process and laboratory technology

ILMAC, Switzerland's most important specialist trade fair for process and laboratory technology, came to an end on Friday, 23 September 2016. In the course of the four-day event, more than 12'000 professional visitors obtained information about product innovations, technological applications and process solutions. The issue of "Industrie 4.0", a topical one affecting the entire sector, was the central subject dealt with at the ILMAC Forum and was examined from both the theoretical and practical perspectives. The "Lunch & Learn" sessions, in particular, organised by the Swiss Chemical Society aroused intense interest amongst the audience. The 20th ILMAC, held from 20 to 23 September 2016 at Messe Basel, has been an encouraging event. The issue of "Industrie 4.0" has definitely arrived in process and laboratory technology and will keep on exercising the specialists for a long time to come. The sector is, however, displaying dynamism and interest in facing up to the current challenges of automation and digitisation. The 12'000 and more specialists from the pharmaceutical, chemical, biotechnology, cosmetics, food and drinks segments attended their "in-house trade fair" at the very heart of the life science cluster in the Basel region. On the final day of the trade fair, high-ranking representatives from government and the chemical industry in the Upper Rhine region visited ILMAC in person and were convinced by what they experienced there.

Mirroring the market

For the first time, the stands of the exhibitors presenting process and laboratory technology were interspersed. In that way, ILMAC reflected the trend of technological applications moving closer to one another on the market and the holistic planning of processes. That concept turned out to be successful, and the trade fair came in for praise on account of its clear arrangement and top quality.

First-hand information

Visitors were able to use the ILMAC Forum, the Lunch & Learn sessions, the LabTec 4.0 and the Cleanroom Control Forum to benefit from the practical experience and valuable knowledge of successful business people and experts from research, development and education and to experience live demonstrations.

Networking event well attended

The networking event held on the Wednesday, in conjunction with longer opening hours, encouraged many visitors, including expats, who would not have been familiar with the trade fair from their training days, to spend the evening at ILMAC after finishing work.

The military as an innovation driver in the kitchen

The Swiss Armed Forces Culinary Team surprised the ILMAC visitors with the performance they put on. The innovative Cooks' Training Corps demonstrated that chemical processes also play a role in the kitchen and distributed samples of molecular military cuisine.

SCS as partner of ILMAC

In 1957 SCS founded ILMAC and since then a fruitful collaboration between SCS and the Messe Basel was established. For the 2016 edition SCS and the Chemistry Departments of the Univiversities of Applied Sciences (UAS) in Wädenswil, Muttenz, Fribourg and Sion shared a large booth and presented interesting joint projects between UAS and industrial partners as poster exhibition.

SCS also organized several sessions in the ILMAC Forum and supported the know-how transfer from experts to the fair visitors.

Pictures from the ILMAC Forum and the SCS booth

The next ILMAC will be staged at Messe Basel from 24 to 27 September 2019.

Source: *http://www.ilmac.ch* and SCS, Pictures: SCS

A warm welcome to our new members!

Period: 13.08.2016 – 20.09.2016

Jawad Alzeer, Dübendorf – Sayed Esmael Balaghi, Zürich – Bogdan Benin, Wallisellen – Cedric Bergande, Bülach – Stefan Bosshart, Winterthur – Irene Bräunlich, Herrliberg – Fabian Brüning, Zürich – Balazs Budai, St. Sulpice – Rebecca Buller, Züricih – Ryan Byrne, Zürich – Jean–Daniel Compain, Strasbourg – Ilija Coric, Zürich – Joachim Delasoie, Charrat – Coralie Duchemin, Lausanne – Jonas Fahrni, Fahrni b. Thun – Ricardo Fernández–Terán, Zürich – Giuseppe Giordano, Romont – Manuel Gnägi, Uettligen – Florian Gribi, Baden – Benita Heiz, Winterthur – Diana Kay Hohl, Brugg – Benson Jelier, Zürich – Jorna Kalim, Windisch – Jean–Philippe Krieger, Wettingen – Ngoc An Le, Zurich – Kun–Han Lin, unknown – Robert Eric Malmberg, Zürich – Liam Mc Gillivray, Belprahon – Andrea Meier, Uster – Ute Mettal, Fribourg – Voichita Mihali, Wadenswil – Lukas Möller, Zürich – Bastian Muriel, unknown – Olivier Nicolet, Prez–vers–Noreaz – Cristina Nieto–Oberhuber, Oberwil – Dennis Palagin, Brugg – Sung Hwan Park, Lausanne – Federico Paruzzo, Denges – Arthur César Pinon, St–Sulpice – Davide Pozzi, Basel – Hedvika Primasova, Bern – Tiwari Prince, unknown – Charel Prost, Zürich – Begoña Puértolas Lacambra, Zürich – Anthony Racine, Lamboing – Jakob Reinhardt, Basel – Lukas Reith, Zürich – Joel Roesslein, Zürich – Rebecca Schäfer, Zürich – Matthias Scharfe, Zürich – Philipp Seeberger, Lausanne – Jérôme Sigg, Geroldswil – Finton Sirockin, Blotzheim – Atena Bianca Solea, – Sandro Soom, Schlieren – Jasmin Terreni, Unterägeri – Jue Theresa Wang, Basel – Philipp Waser, Zürich – Wenyu Wu, Wil.

HONORS AND AWARDS

Prof. E. Peter Kündig awarded the SCS Honorary Membership

For his outstanding contributions to the Swiss chemical community, ***Prof. E. Peter Kündig*** was awarded the SCS Honorary Membership.

The distinction is given in recognition of his research achievements in organic synthesis and catalysis with transition metals during his career but also in recognition of his far-ranging and thoughtful management as president of the Platform Chemistry of the Academy of Natural Sciences in the years 2007–2009 and as president of the Swiss Chemical Society in the past six years since 2010.

The ceremony took place at the Zunfthaus zum Rüden, Zürich, on the occasion of the SCS Fall Meeting 2016 dinner on September 14.

E. Peter Kündig was born 1946 in Weinfelden, Switzerland and got his MSc degree (Dipl. Chem.) at the Swiss Federal Institute of Technology (ETH) Zurich in 1971. For his PhD studies he joined the group of Prof. Geoffrey A. S. Ozin at the Toronto University in Canada and succeeded his thesis in 1975.

After a Postdoc at the University of Bristol, UK, with Prof. P. Timms he moved to the University of Geneva in 1978 and accepted an Assistant Professorship. In 1986 he became Associate Professor followed by 22 years as Full Professor in Organic Chemistry until 2012. Since then Peter is Emeritus Professor at University of Geneva.

In the name of the SCS Board of Directores, the SCS Executive Board, the SCS Award Board and all members of the Swiss Chemical Society we like to congratulate Peter again for his contributions and his enormous engagement for the community.

Paracelsus Award 2016 to Prof. Michael Graetzel

CHF 20'000 and medal in gold. The award is given to ***Prof. Michael Graetzel***, EPF Lausanne, for his invention and development of the dye-sensitized solar cell.

On the occasion of the SCS Fall Meeting dinner Prof. Michael Graetzel was awarded the Paracelsus Award 2016, the highest distinction of the SCS award program. In the Zunfthaus zum Rüden in Zurich, more than 60 guests from academia and industry paid homage to the prize winner and joined the event on September 14, 2016.

In the name of the SCS Award board and the SCS Board of Directors we like to congratulate again Prof. Graetzel and his team.

Professor at the Ecole Polytechnique de Lausanne, Michael Graetzel directs there the Laboratory of Photonics and Interfaces. He pioneered the use of mesoscopic materials in energy conversion systems, in particular photovoltaic cells, lithium ion batteries and photo-electrochemical devices for the splitting of water into hydrogen and oxygen by sunlight. He discovered a new type of solar cell based on dye sensitized nanocrystalline oxide films (Text from http://lpi.epfl.ch/graetzel).

Sandmeyer Prize 2016 awards Joint Team unter the Lead of Sika

The Sandmeyer Award 2016, CHF 20'000, goes to the team comprising researchers from Sika Technology AG, ETH Zürich and the University of Colorado Boulder, namely
– ***Dr. Martin Weibel***, Sika Technology AG
– ***Dr. Thomas Müller***, Sika Deutschland GmbH
– ***Dr. Ratan K. Mishra***, ETH Zürich
– ***Prof. Robert J. Flatt***, ETH Zürich
– ***Prof. Hendrik Heinz***, University of Colorado Boulder,
for their experimental and modelling studies of new commercial organic additives for the grinding of inorganic solids.

At the dinner of the SCS Fall Meeting in the Zunfhaus zum Rüden, Zurich, on September 14, 2016, the SCS and more the 60 guests were present at the award ceremony and on September 15, the team presented their project(s) as morning plenary lecture of the SCS Fall Meeting to a full lecture hall with close to 500 listeners.

We like to congratulate the team members again and thank them for their fantastic work and the interesting lecture.

KGF-SCS Industrial Science Award Ceremonies 2016

On the occasion of the SCS Fall Meeting Dinner Dr. Alain De Mesmaeker, President of the SCS and member of the KGF board, distinguished the KGF-SCS Industrial Science Award winners 2016. More than 60 guests from academia and industry joined the ceremony and the dinner at the Zunfthaus zum Rüden in Zürich on September 14, 2016, and paid homage to the prize winners.

In the name of the SCS Award board and the SCS Board of Directors we like to congratulate again to the winners.

KGF-SCS Senior Industrial Science Award 2016

CHF 10'000. The award was given to ***Dr. Eric Francotte***, Novartis Pharma AG,
for his outstanding contributions to chromatographic resolution of racemic compounds on optically active polymers as chiral stationary phases and his pioneering work in implementing new preparative chromatographic techniques.

and

Prof. Peter Nesvadba, BASF Schweiz AG,
for his groundbreaking contributions to the discovery and development of novel stabilizers for monomers and polymers, novel dyes, first industrial realization of controlled radical polymerization, to the development of safe alternatives to organic peroxides and for his engagement as bridge builder between academia and industry.

KGF-SCS Industrial Science Award 2016

CHF 7'000. The award was given to ***Dr. Martin H. Bolli***, Actelion Pharmaceuticals Ltd,
for his excellent contributions in medicinal chemistry culminating in the discovery and development of Macitentan, a drug for the treatment of pulmonary arterial hypertension.

and

Dr. Andreas Herrmann, Firmenich SA,
for his essential contributions to make profragrance chemistry an interdisciplinary research area and to establish it as a key technology for fragrance delivery.

Dr. Max Lüthi Award 2015 and 2016 to Yvan Monganziama and Flavio Gall

The Dr. Max Lüthi Award is presented for outstanding diploma thesis in Chemistry conducted at a Swiss University of Applied Sciences. The ceremonies of the 2015 and 2016 awards took place at Messe Basel during ILMAC 2016 on September 23, 2016. David Spichiger, SCS Executive Director, awarded the 2015 winner,

Mr. Yvan Mongbanziama, HEIA Fribourg,
for his Bachelor thesis describing the synthesis and characterization of a new enantiomerically pure verdazyl radical derived from pinene

and the 2016 winner,

Mr. Flavio Gall, ZHAW Wädenswil,
for his Bachelor studies on the design and synthesis of cyclic metalloprotease inhibitors.

Prof. François Diederich receives the Nauta Award for Pharmacochemistry

Prof. François Diederich, ETH Zürich, receives the "Nauta Award for Pharmacochemistry" for his outstanding contributions to Medicinal Chemistry and the development of international organizational structures in the field. This is the most important award for Medicinal Chemistry in Europe.

The Nauta Award for Pharmacochemistry is given to Prof. François Diederich by the European Federation for Medicinal Chemistry (EFMC). Prof. Diederich made essential contributions to the fundamental understanding of non-bonding interactions involved in molecular recognition and their application in modern drug design. His scientific work is documented in more than 700 publications and describes interactions such as sulfur-aromatics, cation-Pi, fluorine interactions and halogen bonding that are actively used by many scientists around the world in the discovery of novel drugs. He receives the award for his outstanding contributions to the science of medicinal chemistry during the XXIV International Symposium on Medicinal Chemistry (EFMC-ISMC), on August 28 to September 1, 2016 in Manchester, United Kingdom.

The Nauta Award for Pharmacochemistry was established to honor the memory of Prof. Dr. W. Th. Nauta, whose activities have been very important for the advancement of Medicinal Chemistry in general, and the development of international organizational structures for this discipline. It is given every second year since 1992 to acknowledge outstanding results of scientific research in the field of Medicinal Chemistry.

Source: *https://www.chab.ethz.ch*
Photo: Fabien Venturi

Prof. Eric Carreira wins Karl Ziegler Guest Professorship

This year's honorary prize of the MPI Mülheim went to Prof. Carreira: During the Karl Ziegler Guest Professorship 2016 from June 7 to 9, he gave several lectures at the Max Planck Institute für Kohlenforschung and was available for discussions with the local researchers and students.

Prof. Carreira is the 28th winner of the Guest Professorship which is awarded in memory of the exceptional scientist Karl Ziegler.

Source: *https://www.chab.ethz.ch*

ACS Award for Prof. Antonio Togni

Prof. Togni, ETH Zürich, receives the 2017 ACS National Award for Creative Work in Fluorine Chemistry, for his outstanding contributions to the advancement in the field.

Prof. Togni will be honored for his outstanding contributions to the field of fluorine chemistry at the Awards Ceremony on Tuesday, April 4, 2017, in conjunction with the 253rd ACS National Meeting in San Francisco, CA.

Source: *https://www.chab.ethz.ch*

Prof. Xile Hu has won the 2016 Bau Family Award in Inorganic Chemistry

The award is given every two years at biennial joint International Symposia for Chinese Organic Chemists (ISCOC) and Chinese Inorganic Chemists (ISCIC). It is named after Professor Robert Bau, a distinguished researcher in the fields of x-ray crystallography, neutron diffraction, and transition-metal hydride complexes. The award honors researchers in the field of inorganic chemistry under the age of 45, and includes $2000 and a plaque.

The 2016 Bau Family Award has been given to Professor Xile Hu, EPF Lausanne, founder and director of EPFL's Laboratory of Inorganic Synthesis and Catalysis. Hu is known for his work in developing catalysts from earth-abundant elements for use in chemical transformations of synthesis, energy, and sustainability.

The award will be presented during the ISCOC-ISCIC 2016 in Singapore, where he will also present a plenary lecture.

Source: *http://actu.epfl.ch/search/sb/*

Prof. Petr Novák was appointed as Fellow of the International Society of Electrochemistry (ISE) in recognition of his outstanding contributions to Electrochemistry

The International Society of Electrochemistry appoints a few of its individual Members as ISE Fellows in recognition of their scientific or technical contributions to the field of electrochemistry. Such ISE fellows are selected by the Executive Committee, upon recommendation by the Fellows Nominating Committee, after consultation with the Council.

Prof. Novák, ETH Zürich, was appointed new ISE Fellow for his outstanding contributions to Electochemistry at the 67th Annual Meeting of the International Society of Electrochemistry in Den Haag, Netherlands, 21–26 August 2016.

Prof. Raffaella Buonsanti awarded an ERC starting Grant 2016

As one of three Tenure Track Assistant Professors at the EPFL School of Basic Sciences Prof. Raffaella Buonsanti received the award for the project "Multifunctional Hybrid Platforms based on Colloidal Nanocrystals to Advance CO2 Conversion Studies".
Website: *http://lnce.epfl.ch/buonsanti*
Source: *http://actu.epfl.ch/search/sb/*

Clariant Clean Tech Awards 2016 and Clariant Chemistry Award at the University of Basel

On the occasion of the Clariant Chemistry Day at University of Basel on October 10, the four winners of the 2016 Clariant CleanTech Award presented their work in a short lecture. We like to congratulate the winners again for their pioneering work:

- **MSc. Markus Jeschek**, ETH Zürich/University of Basel
  «State of the art for artificial metalloenzymes»
- **Dr. Jingshan Luo**, EPF Lausanne
  «Hydrogen fuel generation *via* solar water splitting»
- **Dr. Fang Song**, EPF Lausanne
  «Development of efficient catalytic materials for the oxygen evolution reaction (OER) as a key step for renewable energy storage»
- **Dr. Amit Nagarkar**, University of Fribourg
  «Catalytic living ring-opening metathesis polymerisation: Significant reduction of the ruthenium catalyst loading»

On the same event Clariant also honored an outstanding scientific achievement of a student at the University of Basel in Chemistry. The Clariant Chemistry Award at the University of Basel was given to **MSc. Laura Allegra Büldt**, University of Basel for her research on «A New Class of Luminophors and Photocatalysts for Challenging, Visible Light Driven Reactions Based on Earth-Abundant Metals».

JOURNAL NEWS

EurJOC Lecture at ORCHEM 2016

Professor Ilan Marek, Technion – Israel Institute of Technology, Haifa, is the recipient of the 2016 EurJOC Lecture Award. The lecture titled "Small Ring Chemistry en route to Acyclic Quaternary Carbon Stereocenters" was held at the 20th Lecture Conference ORCHEM in Weimar, Germany, on September 5, 2016. Read more on ChemistryViews.org.

http://www.chemistryviews.org/details/ezine/9777361/EurJOC_Lecture_at_ORCHEM_2016.html

Chemistry — A European Journal: Special Issue EuCheMS 2016

The 6th EuCheMS Chemistry Congress was held in Seville from 11 to 15 September, 2016. Chemistry – A European Journal has put together a Special Issue for this occasion, with work from selected scientists who presented their results at the conference and also highlighting papers by Spanish research groups. You can still enjoy free access to this Special Issue until October 31, 2016.

http://onlinelibrary.wiley.com/doi/10.1002/chem.v22.38/issuetoc

INDUSTRIAL NEWS

Source: www.chemmanager-online.com

Novartis Managers Guilty of Bribery in South Korea

August 17, 2016: CEO Joe Jimenez said in April that legal scrutiny over kickbacks largely related to "legacy issues" stemming from Novartis' historic "results-oriented" culture. Jimenez said he has since implemented measures to halt inappropriate behavior.

South Korean prosecutors have indicted Novartis employees for bribing doctors in exchange for prescribing the company's drugs. The Swiss drugmaker confirmed press reports that six current or former employees had been indicted by the Seoul Western District Prosecutors' Office. "Novartis does not tolerate misconduct and we are already implementing a remediation plan in Korea based on the findings from our own investigation, the company said in an official statement.

However, it rejected the implication that the alleged conduct was sanctioned by the "most senior management" at Novartis Korea. The Basle-based company also declined to comment on a report in the British newspaper Financial Times that the indictment might trigger a sales ban in the country.

Reports said the prosecution found that Novartis' South Korean associates, including former CEO Moon Hak-sun, tried to circumvent the law by funding academic events organized by medical journal publishers, where the invited doctors allegedly received kickbacks disguised as attendance fees.

The Prosecutors Office indicted 28 other people, including 15 doctors and six publishers of medical journals over their suspected involvement in transactions that occurred between 2011 and January 2016. Novartis has been the subject of several probes where it has been accused of bribing doctors to boost sales of pharmaceuticals. In March, it agreed to pay more than $25 million to the US government to settle charges that it bribed healthcare officials in China. Last November, it was fined $390 million by the US Justice Department for granting kickbacks to pharmacies that recommended the company's drugs. Novartis is also still fighting a second US lawsuit where it is alleged that it paid lavish speaking fees and provided opulent meals to induce doctors to prescribe its drugs. CEO Joe Jimenez said in April that legal scrutiny over kickbacks largely related to "legacy issues" stemming from Novartis' historic "results-oriented" culture. Jimenez said he has since implemented measures to halt inappropriate behavior.

Casebia Moves Research to New Massachusetts Facility

August 22, 2016: Casebia Therapeutics, a joint venture between Bayer and CRISPR Therapeutics, has hired new laboratory and office space in Cambridge, Massachusetts, USA, for its primary research operations. The facilities are located in a new building which is currently under construction adjacent to the Massachusetts Institute of Technology's (MIT) campus in Kendall Square.

Casebia will be co-located with CRISPR Therapeutics and plans are for the company to move in early next year. Currently, research efforts are being performed at the various R&D sites of Bayer and CRISPR Therapeutics in Germany and the US. An additional location on Bayer's campus in Mission Bay, San Francisco, will house research operations in hematology indications.

CRISPR Therapeutics, headquartered in Basle, Switzerland, with R&D operations in Cambridge, Massachusetts, finalized its JV with Bayer in the first quarter of 2016. The partners aim to develop new breakthrough therapies for blood disorders, blindness and congenital disease using CRISPR's gene-editing technology. Last October, CRISPR Therapeutics announced a separate collaboration with Vertex Pharmaceuticals focused on cystic fibrosis and sickle cell anemia.

ChemChina Gets US Clearance for Syngenta Takeover

August 23, 2016: The Committee on Foreign Investment in the United States (CFIUS) has cleared ChemChina's proposed takeover of Swiss seeds giant Syngenta. Although hailed as a major step forward, the proposed deal still faces potential problems from European regulators as they scrutinize its impact on the region's crop protection market, particularly given ChemChina's ownership of Adama Agricultural Solutions.

In July, the Chinese group gained full control of Adama, the world's largest producer of generic crop protection products, from Israel's Discount Investment. ChemChina and Syngenta both expect to close the transaction by the end of this year, although some observers believe this timing could be optimistic. This week, ChemChina is reported to be planning to sign a syndicated loan agreement with more than 10 banks for $12.7 billion to help finance the deal.

Roche Buys Rights to Potential Ocular Therapy

August 24, 2016: Swiss drugmaker Roche has agreed to pay a total of around $270 million to gain access to Eleven Biotherapeutics' potential eye treatment EBI-031. A humanized monoclonal antibody, EBI-031 potently binds interleukin-6 (IL-6) and inhibits all known forms of IL-6 cytokine signalling. Cytokines are cell signaling molecules in the body that can have significant inflammatory effects.

The drug candidate is being developed to treat eye diseases including diabetic macular edema (DME) and uveitis – inflammation of the eye's middle layer. The US-based biopharmaceutical company has granted Roche an exclusive worldwide license to develop and commercialize EBI-031 and all other IL-6 antagonist antibody technology that it owns.

In return, Roche will pay $30 million to Eleven Biotherapeutics, including a $7.5 million upfront payment in relation to the effectiveness of the license agreement, and a $22.5 million milestone payment based on the Investigational New Drug (IND) application for EBI-031 becoming effective. Under the terms of the transaction, Eleven Biotherapeutics could receive up to an additional $240 million on reaching certain future regulatory, development and commercialization milestones, as well as royalties for net sales of potential products containing EBI-031, or other IL-6 compounds.

In July, Eleven Biotherapeutics received clearance from the US Food and Drug Administrationy to conduct clinical trials of EBI-031 in DME and uveitis.

Sika Opens Subsidiaries in Africa

September 1, 2016: Swiss construction chemicals company Sika has established two new subsidiaries in Djibouti and Cameroon, taking the total number on the African continent to 18. The company said the East African state of Djibouti is an important location for accessing the neighboring country of Ethiopia, one of the largest in Africa. As well as developing the local market, the subsidiary will supply Ethiopia's fast-growing construction industry.

In Douala, Cameroon, the new organization will assume responsibility for distributing concrete admixtures and mortar products, continuing to expand Sika's market share in the country's flourishing construction sector. Distributors have been selling the Swiss company's products there for more than a decade.

Sika said the West African country's building industry is growing strongly from a stimulus of investment in infrastructure and residential construction. Important projects include the expansion of the Kribi seaport in the south, an extension of the rail network, and the construction of stadiums for the African Cup of Nations in 2019. The company now has a total of 97 national subsidiaries worldwide.

The Possibilities of Peptides

September 12, 2016: Small Proteins Open Window to Better Treatments. Peptides in pharmaceutical development have traveled a rough road. It took a long time for these small proteins to emerge as a basis for new medical products. This has become possible mainly because of a convergence of advanced technologies. Meanwhile many drug projects based on peptides are in the pipeline, and several companies offer customized peptides for different applications. Biotech and pharma companies can choose among them like in a supermarket. Here's a look at the current possibilities and late advances of these little proteins in industry and medicine.

For a long time peptides have remained outside the focus of the pharmaceutical industry. But this has changed. Today peptides are gaining speed as important elements in the research and development of new drugs. The number of new chemical entities based on peptides is rising continuously. While in the 1980s only four to five new chemical entities based on peptides entered clinical studies per year, it was 17 per year from 2010 to 2015. Several factors came together to make this possible. One reason is that scientific, technological and engineering development has improved significantly in recent years. Furthermore the continuous trend to cost efficiency supported the rise of peptides. The

small proteins helped bring down the costs of pharmaceutical manufacturing.

It's the structure and their function that make peptides so interesting for pharmaceutical researchers. Peptides are amino acid polymers. They generally represent a small portion of a full protein and don't have sufficient activity on their own. But they may be signaling molecules that function through interaction with specific receptors.

The German company Peptides & Elephants states: "Synthetic peptides are able to influence a wide variety of biochemical, immunological and cellular reactions. They may act as inhibitors of protein-protein interactions, interfere with antibody binding to antigens, and they may be substrates or inhibitors of proteases. Likewise, peptides are suited to mimic protein domains and to simulate protein functions."

Manifold Applications

No wonder peptides today are used in manifold applications, mainly in the areas of oncology, endocrinology, genitourinary medicine, gastroenterology, the central nervous system and immunology.

As a result many companies have specialized in developing peptide libraries, firms such as Amyndas, Encycle Therapeutics, Peptidream, Polyphor or the Swiss Bachem. They offer peptides of different size, structure and function in small and huge amounts.

Customers from the pharmaceutical, biotech and also chemical industries can choose individual peptides as if they were buying the ingredients for a cake. In the end they hope to get new lead drug compounds. Experts estimate that the sheer number of companies in the field and the licensing deals they make with large pharmaceutical companies could lead to a further surge of clinical candidates and ultimately of new peptide drugs.

Therefore specialists have a strong look on the latest advances in research findings in which custom synthesized peptides play a key role in advancing science, medicine and technology. The magazine Science Translational Medicine, for example, reports that amyloid-β peptide protects against microbial infection in mouse and worm models of Alzheimer's disease. The magazine Nature Materials describes the synthesis and application of an elastic, wearable crosslinked polymer layer that mimics the properties of normal, youthful skin. It shall be able to improve skin's elasticity and to eliminate wrinkles. And Nature writes that optogenetics restores the memory in Alzheimer's mouse models. The authors showed that in transgenic mouse models of early Alzheimer's disease, direct optogenetic activation of hippocampal memory engram cells results in memory retrieval.

Improvement of Properties

Swiss Bachem, which describes itself as a specialist in the process development and the manufacturing of peptides as active pharmaceutical ingredients (APIs), highlights its cooperation with Japanese GlyTech, a company that makes glycans. The partnership is focused on the chemical development and manufacturing of glycosylated peptides. Glycosylation can improve the physicochemical properties of peptides: solubility, stability, half-life and homogeneity. As a result, this can have positive effects on pharmacological properties of a lead candidate such as better binding, modified receptor selectivity, targeting a specific tissue or organ, and better tolerance.

One goal of the Swiss-Japanese partnership is to improve physicochemical properties of peptides through selective glycosylation. Both chemical structure and position of glycosyl moieties can markedly improve the biological activity of a peptide. While Bachem brings into the cooperations its expertise to scale up and manufacture kilogram scale peptides, GlyTech is capable of producing glycans in kilogram amounts by a proprietary technology.

In 2013, both companies announced that they had successfully co-developed a chemical synthesis of Interferon β-1a applicable on an industrial scale. Interferon β-1a is a 166 amino-acid-long glycosylated protein and an approved drug substance to treat multiple sclerosis with a world market of more than $4 billion.

New Ways of Delivery

Bachem is also working on new ways of delivery of peptide active ingredients into the human body. The basis for this is a robotic pill that would be swallowed by the patient. The tiny robotic device brings the active ingredient directly to the place in the body where it is needed. There a gas pushes needles into the intestinal wall and discharges the peptide active ingredients.

Another question for scientists is how to get peptides through a cell. Professor Scott Lokey from the University of California-Santa Cruz approaches this topic inspired by natural products and passive membrane permeability. His laboratory studies membrane permeability in molecules whose structures violate classical predictors of "drug-likeness" based on molecular weight and polarity. Many of these "rule breakers" are natural products such as cyclic peptides. Lokey's mission is to create a drug discovery paradigm that lies at the interface between conventional small molecules and biologics.

A related question concerns professor Roland Brock from Radboud University, Nijmegen Medical Centre. He wants to know how to bring molecules to the cell and detected milk as a blueprint of his peptide-research. Looking at the many ways of uptake of peptides he came to a human lactoferrin-derived peptide as an example. Brock and his team tried to use this method for kidney-specific therapies as there is an urgent need for such treatments.

The Oral Route

The question of oral peptide delivery is in the center of interest for Dr. Leila Hassani-Beniddir, scientist in the Novel Drug Delivery Technologies Group of Ipsen. Mainly because of their poor stability and short plasma half-life, peptides are usually administered by injection, often several times daily. However, the pain and invasiveness of injections, as well as disposal issues associated with used needles and relatively complicated administration protocols mean that alternative routes of delivery are highly desirable for peptides.

Out of all of the available routes of administration, the oral route is the most preferred for its convenience, patient friendliness and cost. However oral peptide delivery faces many hurdles, such as poor absorption, poor permeability and rapid enzymatic or pH-induced degradation in the gastrointestinal tract. The main aim therefore is to improve the absorption. This has been done successfully in mice, Hassani-Beniddir said. She predicted that the oral application of peptides will increase in the next five to 10 years.

There are also researchers focusing on real and practical applications of peptide technology. One is Dr. Don Wellings, CEO of the British company SpheriTech. His company designed several peptides for antimicrobial wound dressing. His aim is to use these products in regenerative medicine for skin repair, stem cell isolation, central nervous system repair, diabetic foot, severe burns or in case of severe accidents.

Looking into the future, peptide experts predict that the evolution of the numerous disciplines involved harbors great promise for peptides. Partnerships and alliances between pioneers in the field of peptides should unleash more productivity increases and catalyze medical progress at affordable rates. Furthermore new peptide drugs and old drugs in new delivery systems are likely to emerge in larger numbers in the decades to come.

Opportunities in Drug Development and Manufacturing

September 12, 2016: Growth in the global oncology drug market is an important measure of opportunities in drug development and manufacturing, including for contract manufacturers of active pharmaceutical ingredients (APIs) and finished drug products. On the small-molecule side, whether as an API or finished drug product and depending on the product involved, growth in the oncology market is one indicator of potential opportunities in high-potency manufacturing.

Within the oncology market, a niche segment is antibody drug conjugates (ADCs), which consist of a cytotoxic small molecule linked to a monoclonal antibody (mAb). ADCs, certain oncology drugs, and other high-potency compounds (such as hormones) require high-containment manufacturing, which involve specialized approaches in facility design, equipment selection, and manufacturing processes to achieve the desired levels of containment and minimize operator exposure. Several contract manufacturers have recently invested in high-potency manufacturing. Below is a roundup of activity as announced in 2015 and 2016 to date.

Carbogen Amcis

In May 2016, Carbogen Amcis announced the extension of its operations in Bubendorf, Switzerland. The company undersigned the acquisition of the land and buildings of GEA Pharma Systems in Bubendorf, close to the company's current headquarters. The space will allow the company to expand its laboratory capacity for highly potent development and small-scale production as well as analytical support. Operations are scheduled to expand into the new building in 2017.

Catalent

In January 2016, Catalent, through its wholly owned subsidiary, Redwood Bioscience, formed a research collaboration with Roche to develop molecules coupling different therapeutic modalities using Catalent's proprietary SMARTag technology, an ADC platform. Under the deal, Roche gains non-exclusive access to the SMARTag platform and will have an option to take commercial licenses to develop molecules directed to a defined number of targets. Roche pays Catalent an up-front fee of $1 million and will provide additional research funding during the initial phase of the collaboration. Catalent has the potential to receive up to $618 million in development and commercial milestones, plus royalties on net sales of products, if Roche pursues commercial licenses and all options are exercised. Catalent acquired an exclusive license to market the SMARTag technology in 2013 and subsequently collaborated with Redwood for the ongoing development and marketing of the platform. It later acquired Redwood in 2014. The SMARTag technology enables the generation of homogenous bioconjugates and is engineered to improve performance and manufacturing.

On the drug product side, in January 2015, Catalent expanded its potent handling and manufacturing capabilities at its facility in Somerset, New Jersey. The company completed the expansion of facility and engineering controls for its high-potency tableting and OptiMelt Hot Melt Extrusion operations in Somerset to supplement existing potent capabilities in oral solid and its Zydis Fast Dissolve manufacturing. The company invested in additional potent containment for large-scale blending, fluid-bed processing, and high-shear granulation. The expansion created a manufacturing Center of Excellence for potent handling across Catalent's portfolio of oral solid manufacturing solutions, which includes hot-melt extrusion, high-shear and wet granulation processing, solvent-based capability, extrusion/spheronization, fluid-bed processing, Wurster coating, and compression and encapsulation. The company also invested in high-potency clinical packaging.

Cerbios-Pharma

In early 2016, Cerbios-Pharma opened a new R&D center for high-potency active APIs and mAb development. Cerbios is a privately held company located in Lugano, Switzerland, which specializes in the development and manufacture of both chemical and biological APIs. Exclusive, third-party manufacturing services are offered by the Chemical Division for high-potency APIs and by the Biological Division for mAbs, recombinant proteins, and pharma probiotics.

The construction of the investment was approved in November 2013 and started in April 2014. The new building consists of four floors of 280 square meters each. The second floor houses biological R&D, with three dedicated laboratories for the development of mAbs and/or recombinant proteins based on Chinese hamster ovary (CHO) mammalian cells and a large laboratory to develop pharmaceutical probiotics. The first floor houses a new additional GMP archive and offices for the directors and for the managers of R&D and quality assurance. The ground floor houses chemical R&D, doubling the capacity to develop highly potent APIs for contract manufacturing services, including Safebridge Category 4 products. Underground floors house two warehouses (one for R&D and one for production) and personnel services.

ISPE Recognizes Leaders in Drug Shortage Prevention

September 12, 2016: The International Society for Pharmaceutical Engineering (ISPE) recognized 2016 category winners Baxter BioPharma Solutions and Janssen Vaccines for their exceptional leadership in drug shortage prevention. At the 12th Annual ISPE Facility of the Year Awards (FOYA) banquet held in June in North Bethesda, Maryland, USA, the society's president and CEO, John Bournas, said: "ISPE is recognizing companies who, by virtue of the accomplishments for which they have won a category or honorable mention, have strengthened their ability to prevent drug shortages or minimize their impact on patients."

Baxter BioPharma's site in Halle, Germany, and Janssen Vaccines' facility in Bern, Switzerland, have been selected based upon excellence in the drug shortage prevention dimensions which form the framework of the ISPE Drug Shortages Prevention Plan and the ISPE Drug Shortage Assessment and Prevention Tool. Those dimensions include: corporate culture, business continuity planning, robust quality systems, metrics, communication with regulatory authorities, and building capability.

Best Pharma Brands

September 12, 2016: Interbrand Health Ranks Pfizer, Roche and Merck on Top. Global brand agency Interbrand has identified the top 10 pharmaceutical brands among the top 25 global pharmaceutical companies. Besides the financial value of the brand, its influence on health-care professionals played an essential role in the selection.

The world's largest pharmaceutical company, Pfizer, is also the company with the best and most valuable brand. This is the result of a global study by Interbrand, a New York specialist in evaluating brands. Interbrand prized the value of the Pfizer brand at about $20 billion and thus sees the US group at the top of the pharmaceutical giants. Next are the big players Roche — with a brand value of $15.5 billion — and Merck & Co. — with nearly $13.9 billion. In places four and five are Johnson & Johnson's pharmaceutical unit Janssen ($13.87 billion) and Novartis with $13.5 billion. In total the top 10 biopharmaceutical companies represent approximately $129 billion in brand value. The study examines what value means to health-care professionals (HCPs) and illustrates the influence the corporate brand has in conveying that value. It also reveals how leading companies are beginning to deliver on what matters to HCPs.

For its research Interbrand has identified three significant

factors: financial analysis, strength or function of trade, and the influence of the brand. They examined the probability that doctors, nurses, pharmacists or health-insurance companies recommend a brand or prescribe its drugs. According to Interbrand Health the value of the company normally increases with the size of the brand value.

Commitment 'Beyond The Pill'

Jane Parker, CEO of Interbrand Health, pointed out that the role of brands in the pharmaceutical industry has changed in recent years. Health-care decision-makers today expect from pharmaceutical manufacturers a commitment to innovative health-care solutions that go "beyond the pill."

As a consequence leading biopharmaceutical companies would change their business models, increase their transparency and conduct more research in areas that do not necessarily belong to the traditional core activities of the pharmaceutical industry, such as digital therapies.

In addition, the companies are increasing their sociopolitical activities. Therefore the industry again would have gained more control over its appearance and would have the opportunity to provide a more convincing picture of what it does for the environment and consumers.

"Biopharma is at a pivotal moment, and the time for change is now," Parker said. The study ranks Amgen, Gilead Sciences, Novo Nordisk, AstraZeneca and GSK in places six to 10. The investigation "Best Pharma Brands" is based partly on financial and market data of the companies. In addition, the authors took into account the feedback and opinions of decision-makers and leaders in the health-care business.

In Germany, according to the fifth East-West brand study of MDR-Advertising and the IMK Institute for Applied Marketing and Communication Research, the companies Bayer and Ratiopharm rank at the top of pharmaceutical brands. Accordingly, almost every third respondent spontaneously mentioned the Bayer brand when it came to prescription drugs. Around 20% of respondents named Ratiopharm.

Controversy over Brand Valuations

David Haigh, CEO of Brand Finance, which publishes the annual Brand Finance Global 500 report, said that in recent years there has been a growing controversy over the validity of brand valuations in general and brand valuation league tables in particular. The main reasons for differences of opinion about the value of a brand would be, *e.g.*, brand asset definition, the date of the valuation, and the adopted approach or financial forecasts.

But now there is a widely accepted global brand valuation standard called ISO 10668. Based on the results of the latest Brand Finance Global 500, 18% of all quoted company enterprise value is made up of brands, Haigh said. This points to a renewed need to educate and explain how brand valuations are conducted and how critical an understanding of brand value is to marketers, finance teams and CEOs alike.

The 2016 report of Brand Finance Global 500 ranks the US UnitedHealth Group as the health-care company with the highest brand value in the world.

Cerbios' new State-of the-art R&D Centre for HPAI and mAb Development

September 21, 2016: On February 15th, 2016, Cerbios Pharma officially opened its new R&D Centre in Lugano, Switzerland. During the past 15 years, Cerbios has heavily invested in infrastructures, in acquisitions and company participations driven by innovation and differentiation. This has not only more than doubled the company turnover which has also doubled the number of employees, but has also generated value in the Swiss Canton of Ticino, confirming a strong sustainability approach.

The construction of the R&D centre was approved in November 2013 and started in April 2014. Thanks to a favorable climate, the roof was built before Christmas 2014. Between January to October 2015 all interior was installed and the two HVACs on the roof (one fully dedicated to the CHO biotechnology laboratories) were tested and put in operation. The new building consists of four floors of 280 m^2 each (total 1'120 m^2).

Cerbios specializes in the development and manufacture of both chemical and biological APIs for its partners world-wide. Exclusive, third-party manufacturing services are offered by the Chemical Division for HPAIs and by the Biological Division for monoclonal antibodies, recombinant proteins and pharma probiotics. The privately held, Lugano-based company provides full CMC support to its partners, including the supply of cGMP clinical batches, registration/validation material and commercially manufactured APIs. Paramount to this is the ability to supply all of the technical documentation and support necessary for a successful registration. Cerbios' commercial products are marketed worldwide but primarily in Europe, USA, Japan and India.

Lonza Completes InterHealth Nutraceuticals Buy

September 22, 2016: With the acquisition, CEO Richard Ridinger said Lonza "will be able to harness Interhealth's proven management and branding capabilities and leverage them to a global level." With the acquisition, CEO Richard Ridinger said Lonza "will be able to harness Interhealth's proven management and branding capabilities and leverage them to a global level."

Swiss fine chemicals producer Lonza has closed the acquisition of US-based InterHealth Nutraceuticals from Kainos Capital for a price of up to $300 million, split into an upfront payment and an earn-out payment. Lonza said the integration of the nutraceuticals producer headquartered in California, which develops, manufactures and markets proprietary value-added nutritional ingredients for use in dietary supplements, will be immediately earnings accretive, as the company's portfolio aligns closely with its own.

The California company will become part of Lonza's consumer care business unit, but will retain its own facilities and employees. The combination of the two businesses will allow the Swiss company to offer InterHealth's more than 15 branded ingredients, including the new acquisition's cornerstone ingredient, UC-II, which is said to be revolutionizing the joint-health segment.

With the acquisition, CEO Richard Ridinger said Lonza "will be able to harness Interhealth's proven management and branding capabilities and leverage them to a global level." He said the acquisition is a step toward the company's goal of becoming the world's leading and most-trusted supplier to the pharmaceutical, biotech and specialty ingredients markets.

US Senate Hears Concerns About Ag Mergers

September 23, 2016: At a hearing held by the US Senate's Judiciary Committee on Sept. 20, executives of five companies involved in the current round of mergers in the global agrochemicals industry – US players Dow, DuPont and Monsanto, along with German and Swiss players Bayer and Syngenta – faced questions from senators and industry stakeholders about the transactions currently being reviewed or soon to be by US antitrust regulators. The only merger party not in attendance was ChemChina.

The hearing was convened by the committee's chairman, Iowa Senator Chuck Grassley, himself a farmer, who said he feared the consolidation in the industry could lead to rising input costs in a declining agriculture economy. It provided solely a sounding board for the concerned parties, however, as the committee has no jurisdiction over mergers.

According to US media reports, most of the panel expressed reservations about all of the proposed deals, including Bayer's

$66 billion buyout offer accepted last week by Monsanto, ChemChina's proposed $43 billion takeover of Syngenta and the all-stock merger between Dow and DuPont planned to include an agriculture company with around $19 billion in annual sales.

Senators from the Democratic Party questioned whether some mergers are just too big for antitrust regulators to fix as well as the extent to which ChemChina could influence Syngenta's policies. When pressed by one legislator as to whether Syngenta would claim state immunity if sued in a US court, CEO Erik Frywald suggested it would not.

Asked if its new Chinese owner would give Syngenta preference in its own market, the Swiss manager pointed out that all of the five companies present – as well as Germany's BASF, which is not a party to any of the mergers –were already engaged in cross-licensing, so that this was not likely to be an issue.

Roger Johnson, president of the US National Farmers Union (NFU), gave a scathing indictment of the mega-merger plans.

In the farmers' view, he said, the mergers would result in less competition, less innovation and higher prices, thus jeopardizing family farmers' and ranchers' ability to make a living.

"The hands-off approach we have seen in antitrust enforcement has led to the highly consolidated economic conditions prevalent today and the resulting vulnerability of American farmers. We must do to more to prevent consolidation that results in a few companies controlling a substantial percentage of market share," Johnson said, adding: "The nation's antitrust enforcement has clearly failed farmers, ranches, rural communities and consumers."