



SCS
Swiss Chemical
Society

Community News

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SWISS CHEMICAL SOCIETY NEWS

Call for Nominations for the SCS Awards 2019



As one of our four strategic pillars, SCS awards excellence in science and chemistry respectively and is proud of its renowned award program that goes back to the age of 1936 with the ceremony of the first Werner Prizes to Dr. T. Posternak, Genève, and Prof. G. Schwarzenbach, Zürich.

The society hereby calls for nominations for the 2019 SCS Awards. Nominations have to be submitted electronically to info@scg.ch. The deadline for all documents to reach the Swiss Chemical Society is September 30, 2018.

For specific award information and required documents please visit our website <http://scg.ch/awards>

Werner Prize

CHF 10'000 and medal in bronze

The Werner Prize is awarded to promising young Swiss scientists or young foreign scientists working in Switzerland for outstanding research in the field of chemistry. Selection of the winners is not restricted to candidates working at a university. On the deadline for submission of nominations, the candidate must be under 40 years old (*i.e.* 40th birthday after the deadline) and may not be a tenured professor or hold a managerial position in industry. The prize is awarded annually.

Grammaticakis-Neumann Prize

CHF 5'000

The Grammaticakis-Neumann Prize is awarded to a promising young scientist for outstanding accomplishments in the field of experimental or theoretical photochemistry. The prize is announced internationally and is not restricted to persons affiliated with academic institutions. On the deadline for submission of nominations, the candidate must be under 40 years old (*i.e.* 40th birthday after the deadline) and may not be a tenured professor or hold a managerial position in industry. The prize is awarded bi-annually as of 2015.

Balmer Prize

CHF 2'000 for individuals and CHF 2'000 for the school's chemistry department or

CHF 3'000 for a group and CHF 1'000 for the school's chemistry department and medal in bronze

The Balmer Prize is awarded for innovation in chemistry teaching to a teacher working in Switzerland or to a team of teachers working at the same school at the high school level.

The innovation must consist of an original didactic approach, experimental method or teaching practice and be readily applicable to everyday teaching at the high school level. The costs for materials must be modest.

Dr. Max Lüthi Award

CHF 1'000 and medal in bronze

The Dr. Max Lüthi Award is presented for outstanding degree theses completed in the chemistry department of a Swiss University of Applied Sciences. Nominations must be submitted by the respective chemistry department heads. The prize is awarded annually.

Sandmeyer Award

CHF 10'000 for individuals or CHF 20'000 for groups

The Sandmeyer Award is presented to a team or an individual for outstanding work in the field of industrial or applied chemistry. The work must have been carried out in Switzerland or abroad by a team including Swiss nationals. The award may be presented to an individual – Swiss or foreign national – if the work was carried out in Switzerland. The award may be presented to an individual for work carried out abroad if the person is Swiss.

Tenured professors will not be considered for the award as individuals. In the case of foreign teams, the Swiss member must have made a substantial contribution to the work. There is no age restriction.

The prize is awarded annually.

SISF-SCS Industrial Science Awards

These awards were created by the SISF with support from the SCS in order to honor researchers working in industry in the field of chemistry. The program targets scientists from companies of any size working in the field of chemistry or chemical related sciences. There are three awards with different criteria in terms of the experience and level of research attained by the candidates. The awards are presented only to active researchers working in Switzerland.

Industrial Investigator Award

to honor successful investigators with outstanding achievements.

Certificate and cash check of CHF 7'000

The prize is given on an annual basis.

Senior Industrial Investigator Award

to honor very successful and established investigators with outstanding achievements over many years.

Certificate and cash check of CHF 10'000

The prize is given on an annual basis.

Distinguished Industrial Investigator Award

to honor senior scientists to honor their lifetime achievements in chemical research.

Certificate and cash check of CHF 15'000

rewarded on decision by the board



<http://scg.ch/awards>

Minutes of the 28th General Assembly of the SCS



April 6, 2018, 13:30–14:00h at University of Neuchâtel, Aula des Jeunes-Rives.

1. Welcome; Approval of the Agenda
During the lunch break of the SCS Spring Meeting David Spichiger, SCS Executive Director, opened the assembly and welcomed all members/attendees. Legal formalities were all fulfilled and the assembly was quorate. The agenda was approved.

2. Election of the vote counters

17 SCS members were present at the beginning of the assembly. At the end, there were about 31 members in the room. The increase in members during the assembly had no impact on the results of the votes as all decisions were made without any dissenting vote. The director proposed Leo Merz as vote counter. He was confirmed with no objection.

3. Minutes from the 27th GA from April 21, 2017

The minutes was published in CHIMIA (2017, 71, No. 6, A394). It was approved unanimously.

4. Annual report 2017

The annual report was published in CHIMIA (2018, 72, No. 1-2, A101ff). It was approved unanimously.

5. Financial report 2017 and audit report

David Spichiger presented the financial statement. Incomes of CHF 1'872'046 and expenses of CHF -1'738'844 result in an operating surplus incl. taxes of CHF +133'202. Taking in account the portfolio income and the transaction volume of the SCS Funds with a surplus of CHF +98'515 a total surplus of CHF 231'717 resulted for the whole society. In addition, the asset fluctuation buffer was increased from CHF 50'000 to CHF 150'000. As of 31.12.2017 the assets summed up to CHF 4'317'812.89.

Audit Report:

In his audit report from February 28, 2018, T. Baumgartner from REVITREU Baumgartner, Gerzensee, proposed to the assembly to approve the financial statement with no restriction. The assembly approved the financial statement 2017 and the audit report with two abstentions and no dissenting vote.

6. Discharge the Organs of the Society

The assembly discharged the board and the financial audit unanimously with no abstention.

7. Elections (Changes in the SCS Board of Directors, BoD)

Re-elected members of the BoD for 2019–2021:

- Dr. Alain De Mesmaeker, President
- Prof. Christian Bochet, Vice President
- Dr. Hans Peter Lüthi, Treasurer
- Prof. Christoph Copéret, Member
- Dr. Sandrine Gerber, Member
- Dr. Martin Vollmer, Member

After having insourced the financial operations from Treua to the Head Office, the BoD proposed to change also the audit authority for 2018. The assembly followed the board's proposal and approved BDO AG, Bern unanimously.

8. Strategy, Membership fees and News

The main focus in the next 12 months will be:

- Consolidation/development of existing activities/events
- Push Helvetica Chimica Acta
- Transform CHIMIA into OA world

New initiatives/topics that will be evaluated and implemented:

- Green & Sustainable Chemistry
- Environmental Sciences
- Intellectual Property

The annual membership fees 2019 were approved unanimously:

- Regular member CHF 150.00
- Student member CHF 50.00
- Retired member / unemployed member CHF 80.00
- Institutional member (companies) CHF 800.00

Additional Fees for Divisions

- Industrial & Applied Chemistry
 - Regular CHF 20.00
 - Company CHF 100.00
- Photochemistry Section
 - Regular CHF 40.00
 - Student CHF 20.00

15% discount on collective memberships for university research groups.

9. News and Outlook 2018/19

- In 2018 thirteen conferences and symposia will take place under the direct organization of SCS. The list including details is available on <http://scg.ch/events>.
- DAS course organization continues its successful education program with close to 70 courses.
- 8 top scientists from all over the world are invited in 2018 to hold a SCS Lectureship tour in Switzerland.
- No major changes in the event portfolio is planned for 2019.

10. Varia

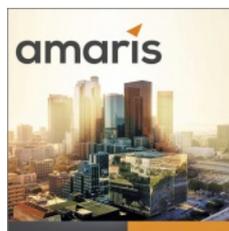
No votes were requested from the audience. The director thanked for the confidence and closed the assembly.

Neuchâtel, April 6, 2018

Dr. Alain De Mesmaeker
President

David Spichiger
Executive Director

Amaris, a new SCS corporate member and partner



We are happy and proud to announce a closer collaboration between Amaris AG and the SCS. Amaris joined the SCS as corporate member and will represent the technologies and management consulting business in our community.

Amaris is an international Technologies and Management Consulting Group with a rapid pace development and innovative solutions for demanding projects. The company's business consists in supporting its clients in carrying out their projects by acting within their organization to help improve effectiveness and enhance performance.

Amaris' added value lies in the quality of its teams and their attention to detail, as well as in the way the company capitalizes on their knowhow.

More information: <http://www.amaris.com>

A Warm Welcome to Our New Members!



Period: 27.03. – 23.04.2018
Paolo Arosio, Zürich - Alberto Baiardi, Thalwil - Luciano Barluzzi, Lausanne - Stefania Bertella, Lausanne - Francesco Bosia, Zürich - Simon Büchele, Luzern - Sean Gordon, Morges - Gregory Hollingworth, Basel - Selina Kaiser, Zürich - Christina Lamers, Basel - David Lim, Basel - Julien Lorber, Colmar

- Fabien Monnard, Oftringen - Raquel Parreira, Ecublens - Ali Saadun, Regensdorf - Chris Scarborough, Stein - Xiangli Yi, Lausanne.

HONORS, AWARDS, APPOINTMENTS

Werner Prize 2018 awarded to Prof. Sandra Luber, University of Zurich



On occasion of the SCS Spring Meeting dinner, Alain De Mesmaeker, SCS President, awarded the Werner Prize 2018 to **Prof. Sandra Luber** for outstanding research achievements in her still young career. We like to take the opportunity to congratulate her again and wish all the best for the upcoming research projects.

The ceremony took place in the restaurant Hôtel DuPeyrou on April 5 and the lecture was part of the program of the SCS Spring Meeting 2018.

The SCS awards the Werner Prize 2018 to Sandra Luber for her excellent research accomplishments in the field of theoretical and computational chemistry. Her work covers a wide range of approaches, mostly with emphasis on highly accurate methods derived from quantum mechanics, which she has applied to a wide variety of challenging systems.

About the Werner Prize

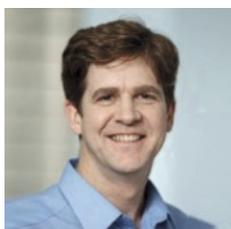
CHF 10'000 and medal in bronze awarded to a promising young scientist for outstanding independent chemical research.

www.scg.ch/werner

Three ETH Researchers in the Field of Chemistry and Life Sciences receive an ERC Advanced Grant

The grants awarded are worth between EUR 2.2 and 3.2 million each.

The European Research Council (ERC) is part of the EU Research and Innovation programme Horizon 2020 (2014–2020). Switzerland was readmitted as a full participant in Horizon 2020 on 1 January 2017.



Ruben Kretzschmar is a Professor of Soil Chemistry at the Department of Environmental Systems Science. His research team studies processes controlling the cycling of trace elements, some of which are essential for ecosystem functioning and others can be potentially toxic. Iron, the fourth-most abundant element in the Earth's crust,

plays a central role in this context, because it affects many biogeochemical processes. In his ERC project, Kretzschmar plans to develop new approaches to investigate iron mineral transformations for the first time in-situ in soils and sediments. This will provide novel insights into the cycling of iron and other elements in the environment, and will also have implications for contaminated site remediation, corrosion, archaeology, and other fields.



The research of **Marco Mazzotti**, professor at the Institute of Process Engineering, deals with separation processes, with application to biopharmaceuticals and carbon dioxide capture and storage systems, and has a strong focus on crystallisation. Many products in the chemical, food and pharmaceutical industry are produced as powders through

a continuous crystallization process, in which crystals are generated by secondary nucleation in agitated crystal suspensions. In his ERC project Mazzotti aims at filling the gaps of scientific understanding on secondary nucleation at the microscale, so as to enable the optimization and control of continuous crystallisation at the process scale. The ETH professor hopes the project will have a substantial impact on the science of crystallisation and the related industrial processes.



Ruth Signorell's research deals with aerosols and nanoparticles. In her ERC project, she uses photoelectron spectroscopy to study elementary transport processes of slow electrons in liquids and at the interface between liquids and gases, solids and other liquids. To this end, free electrons are generated in free-floating small droplets (aerosols) by the irradiation of high-energy light. A sensitive measurement set-up then

measures the speed and direction of the electrons escaping from the droplets. This project addresses an important question in fundamental research: In which way and how fast do slow electrons lose their energy through collisions with liquid molecules? Findings in this field have many ramifications including the understanding of radiation damage in living organisms.

<https://www.chab.ethz.ch>

JOURNAL NEWS

ChemMedChem: Special Issue on Cheminformatics in Drug Discovery



This Special Issue, guest-edited by Andreas Bender and Nathan Brown, aims to present the breadth and diversity of Cheminformatics methods and approaches within drug discovery.

Enjoy free access to papers on chemical space analysis, machine learning from chemical data, matched molecular pairs and bioisosteres, as well as structure-based modelling and simulations until April 2019.

<https://onlinelibrary.wiley.com/toc/18607187/13/6>

ChemPlusChem: Special Issue on Advanced Optoelectronics



Guest Editors Pedro Coto and Rubén Costa bring you ChemPlusChem's latest Special Issue on "New Materials and Approaches for Advanced Optoelectronics". This issue features top-quality contributions covering new blue-emitting coordination complexes, perovskites, nanocarbon-based hybrids, metal-organic frameworks, hybrid metal

oxides, and small molecules. Enjoy free access until the end of May.

<https://onlinelibrary.wiley.com/toc/21926506/83/4>

INDUSTRIAL NEWS

Source: www.chemanager-online.com

GSK to Buy Novartis' Share in Consumer JV

March 28, 2018: In a move that may explain why GlaxoSmithKline last week turned thumbs down on bidding for Pfizer's consumer drugs business, the UK's largest drugmaker has announced plans to buy Novartis' 35.6% stake in the companies' consumer joint venture.

The jv was created in 2015 as part of a multibillion dollar swap arrangement that saw GSK transfer its cancer portfolio to Novartis in exchange for the Swiss drugmaker's vaccines portfolio while the two combined their consumer drugs assets. In the deal planned to be completed this summer, GSK will pay £9.2 billion (\$13 billion) for the shares, considerably less than the \$20 billion it potentially would have had to pay for the Pfizer portfolio. Some industry watchers speculate that the company has enough cash to do both deals if it wants. Others think it will take a pass on Pfizer in any case. The value of the Novartis put option was £8.6 billion at the end of 2017, according to GSK's financial statement. This represents an undiscounted value of £8.9 billion assuming completion of the option in mid-2018. The drugmaker said its board therefore believes the negotiated price is consistent with the original shareholder agreement. As of Dec. 31, 2017, GSK said the value of the joint venture's gross assets represented by Novartis' stake was £5.9 billion, while the Swiss company's share of adjusted operating profit was £494 million. In announcing the buyout plan, Glaxo CEO Emma Walmsley said it "addresses one of our key capital allocation priorities" and will allow the company's shareholders to "capture the full value of one of the world's leading consumer health businesses." The buyout will also remove uncertainty about the future of the joint venture, the CEO said, as the original jv agreement gave Novartis an option to hand its stake back at any point between March 2018 and the year 2035. Walmsley revealed also that GSK's management is conducting a strategic review of other parts of its portfolio that may no longer be of strategic interest. These could include malted milk manufacturer Horlick's, along with other nutrition products. Horlick's had sales of £550 million in 2017, for the most part in India. The proposed transaction, which is to be structured as a cancellation of Novartis' shares, is subject to approval by GSK shareholders at a general meeting. Walmsley said the board will recommend a vote in favor of the transaction, with a provision that it can be withdrawn for fiduciary reasons or governmental orders restraining or prohibiting it. Other provisions of the buyout pact stipulate that it may be terminated if agreed in writing between the two sides. GSK said this could be the case if the agreed \$200 million break fee has been paid and there

has been no shareholder vote approving the transaction within eight weeks. Additionally, the rules call for the transaction to be concluded by the end of December 2018. For Novartis, CEO Vas Narasimhan said GSK's cash offer represents "attractive value." Remarking that "the time is right" for the Basel-based pharmaceutical giant to "divest the non-core asset at an attractive price," he said the proceeds from the sale will strengthen the company's ability to allocate capital to grow its core businesses and, among other things, pursue bolt-on acquisitions.

In conjunction with the offloading of its jv stake to GSK, analysts speculated once again that the time might also be right for Novartis to shed its 6% stake in Swiss rival Roche. This is estimated to be worth more than \$14 billion. Novartis has already announced plans to divest its Alcon eyecare business, seen in financial circles as worth more than \$25 billion. Any action on the business has been delayed until 2019, according to reports.

Takeda Mulls Bid for Shire

April 4, 2018: Japanese drugmaker Takeda has announced that it is considering buying Ireland-domiciled drugmaker Shire, although it stressed that the offer was "at a preliminary and exploratory stage" and it had not approached Shire's board. Market speculation and subsequent pressure from the UK Takeover Panel had prompted Takeda to officially confirm its interest in Shire, although the company added that any offer would have to align with its "disciplined approach" to acquisitions. The Takeover Panel has given Takeda until Apr. 25 to make a firm bid. Shire has been the subject of much takeover speculation in recent years and there are expectations that Takeda's interest could spark a bidding war, or at least a counter bid. Late last year, Pfizer was rumored to have hired advisers to work on a potential offer and, in October 2014, AbbVie called off its proposed £32 billion takeover of Shire following new US rules on inverted mergers. Investors have been largely skeptical about Takeda's potential move, with many questioning the Osaka-based company's ability to finance the deal. The Japanese company, currently valued around \$39 billion, is smaller than rare disease specialist Shire, which is worth around \$35 billion. Mizuho Securities analyst Hiroshi Tanaka said in a note to clients quoted by Reuters news agency: "The impression left by the news is that the acquisition would be an overreach." Analysts also said that any deal was expected to involve some form of equity, whether a share swap or share issue, which could be highly dilutive for Takeda shareholders. Ratings agency Moody's also warned that Takeda would add more debt to an already weakened balance sheet, arguing that the size of the deal and its global complexity could make a merger difficult to execute. Takeda added \$3.5 billion of debt last year from the takeover of US oncology company Ariad Pharmaceuticals. That deal, costing \$5.2 billion, was Takeda's largest since it paid \$13.7 billion for Swiss drugs company Nycomed in 2011. An acquisition of Shire, said Takeda, could create a global biopharmaceutical leader, boosting its presence in the US market as well as in the areas of gastroenterology, oncology and neuroscience. Several major pharma deals have been announced so far this year. These included in January Sanofi's purchases of Bioverativ and Ablynx, Roche's takeover of US-based Ignyta and Celgene's agreement to acquire Juno Therapeutics. In February, US drugmaker Merck & Co. agreed to buy Australia's Viralytic, while late last month GlaxoSmithKline said it would pay \$13 billion to buy Novartis' share in its consumer healthcare joint venture.

CB&I Wins China Projects

April 5, 2018: US engineering contractor CB&I has won three separate contracts in China. The first from Hainan Huasheng New Material Technology is for the license and engineering design for a diphenyl carbonate (DPC) plant in Hainan province. The unit will use technology licensed from Italy's Versalis to

produce DPC, which is a raw material used to make PC. Capacity details were not disclosed. CB&I's second contract is for the license and process design engineering of a 300,000 t/y PP plant for CNOOC Ningbo Daxie Petrochemical. The facility in Ningbo will use the engineering contractor's Novolen technology and proprietary Novolen High Performance catalyst. "By licensing this technology, CNOOC Daxie will be able to produce a wide range of polypropylene products and meet China's increasing demand for these high-end products," said Daniel McCarthy, CB&I's executive vice president of technology. Lastly, Jinneng Science & Technology chose the US contractor to supply a license and engineering design of a propane dehydrogenation (PDH) plant in Qingdao, Shandong province. The unit, which will produce 900,000 t/y of propylene, will be based on CB&I's Catofin technology and catalyst as well as heat generating material from Swiss partner Clariant. CB&I said the plant will be the world's largest single-train PDH facility when it is operational. Start-up dates for each of the plants as well as financial terms of the contracts were not revealed.

Novartis to Buy AveXis for \$8.7 Billion

April 11, 2018: In an all-cash deal expected to close in the second half of this year, Swiss drugs giant Novartis has agreed to pay \$8.7 billion for AveXis, a US-based clinical stage gene therapy company. Novartis' new CEO, Vas Narasimhan, said the \$218-per-share offer presents an "extraordinary opportunity" to transform the care of SMA, an inherited neurodegenerative disease caused by a defect in a single gene, the survival motor neuron SMN1. AveXis has several ongoing clinical studies for treatment of the disease. With the deal, Novartis would gain another gene therapy platform to complement its CAR-T program for cancer and would be able to advance a growing pipeline of gene therapies across therapeutic areas, Narasimhan said.

Analysts said the drugmaker would be paying a hefty premium to establish itself as a frontrunner in the emerging gene therapy sector. The takeover bid, approved unanimously by both companies' boards, represents an 88% premium over AveXis' closing price on Apr 7. That price was more than 65% higher than a year earlier. Biotech markets are excited by the prospects for Novartis' new gene therapy platform. The general consensus is that through its new management's willingness the company could emerge as a leader in both CAR-T and AAV9 gene therapies, two of the most promising fields in biotech. At the same time, while at the same time some commentators cautioned warning that with a failure of the acquired company's lead product, the reach for AveXis could "blow up in its face." The US Food and Drug Administration (FDA) has granted orphan drug status to the biotech company's lead candidate, AVSX-101, which Novartis said has "highly compelling clinical data" in treating SMA Type 1, the leading genetic cause of death in infants. A BLA filing with the FDA is expected for the second half of 2018, and a launch on the US market is targeted for 2019. Novartis said PRIME and Sakigake designations have been secured in Europe and Japan respectively. According to the trade journal Fierce Biotech, SMA patients in future will have two treatment options. Biogen's Spinraza is already on the US market; however, the journal said data on AVX-101, in addition to the benefits of a one-time gene therapy over ongoing dosing, suggest that AveXis' product may be preferable for some people. Other products in the AveXis pipeline include a treatment for Rett Syndrome and a genetic form of amyotrophic lateral sclerosis (ALS, also known as Lou Gehrig's disease) caused by mutations in the superoxide dismutase gene. Novartis estimates that AveXis' portfolio has the potential to generate peak annual sales worth billions of dollars annually.

Along the Acquisition Trail

April 17, 2018: For the global specialty chemicals sector, the past two years have been among the most exciting of the young millennium. Many mergers and acquisitions were in the spotlight in 2017 and more have moved into it in 2018. Two of the biggest deals have been completed, the \$130 billion mega-merger between US chemical giants Dow Chemical and DuPont and the takeover of Swiss agrochemicals major Syngenta by ChemChina for \$43 billion. A third is still being scrutinized by regulatory authorities, while two other transactions with potential to shake up the industry fizzled last year.

The Rocky Road to Mega-mergers

In mid-March 2018, Bayer was still struggling to win approvals for its \$63.5 billion acquisition of Monsanto. After pledging to sell seeds assets with sales of €1.3 billion to BASF for €5.9 billion to satisfy the European Commission, the Leverkusen giant has allowed its former rival in Ludwigshafen an exclusive look at the books on another asset package, believed to be worth around €1.5 billion. While environmentalists and farmers continued to protest, news agencies said EU approval was near. Spectacular deals that will not take place include the proposed takeover of AkzoNobel by US rival PPG and the merger of Clariant and Huntsman. After a protracted battle, the Dutch paints group successfully shook off PPG, which in the last round had offered \$26.9 billion. The planned \$20 billion fusion of the Swiss and US specialty chemicals producers ran aground on the opposition of an activist investor. Beyond the "big bucks" transactions, the past 15 months have seen mergers and acquisitions of all sizes in specialty chemicals, agrochemicals and pharmaceuticals.

Specialty Chemicals

Done deals across the entire products spectrum

Germany's Lanxess sealed its purchase of US additives producer Chemtura for \$2.5 billion. The buyout was the largest in the history of the company spun off from Bayer in 2004 and floated a year later. Lanxess also completed its acquisition of Solvay's €65 million phosphorus chemicals business, including the US production site at Charleston, South Carolina.

German specialty chemicals producer Altana acquired Solvay's formulated resins business for an undisclosed sum.

Solvay had gained the assets with around \$20 million in sales as part of its 2015 purchase of Cytec Industries.

US coatings group Axalta acquired Plascoat Systems, a UK-based leading supplier of thermoplastic powder coatings, from parent company International Process Technologies (IPT) for an undisclosed sum.

Axalta also picked up Valspar's North American wood coatings business for \$420 million, after Valspar was bought by US market leader Sherwin-Williams. In other coatings deals, AkzoNobel acquired the UK's Flexcrete Technologies and announced plans to buy French manufacturer Disa Technology (Disatech).

DSM of the Netherlands agreed to make an initial investment of \$25 million in US industrial bioscience company Amyris, giving it an equity stake of about 12%. DSM also bought Amyris Brasil from Amyris for \$58 million.

Israel Chemicals (ICL) agreed to sell its fire safety and oil additives businesses to South Korean private equity firm SK Capital for about \$1 billion.

UK specialty chemicals company Croda made a cash offer for compatriot Plant Impact, a crop-enhancement specialist, for about £10 million. The acquisition was due to complete on Mar. 28. Croda also acquired Nautilus Biosciences Canada, a marine biotechnology company. Financial terms were not disclosed.

Belgian chemicals and plastics producer Domo Chemicals took an undisclosed stake in Group Michiels Advanced Materials (Group M.A.M.) as part of a partnership in specialty film coating.

In an all-US deal, Versum, the electronic materials spin-off of US gases producer Air Products, said it would acquire Dynalco, a supplier of formulated cleaning solutions for the semiconductor industry.

AkzoNobel began negotiations with three or four potential buyers of its Specialty Chemicals division. The company has set an April 2018 deadline to sell or spin off the business employing around 9,000 people and accounting for about a third of its total sales and earnings. Buyers are said to include Dutch pension fund PGGM, private equity groups Carlyle, Bain and Advent.

PPG recently announced plans to buy Dutch wholesaler ProCoatings for an undisclosed sum after failing to buy AkzoNobel. ProCoatings sells a large portfolio of well-known professional paint brands. The deal was expected to close in the first quarter.

Agrochemicals

Many Seeds Sown in the Shadow of the Mega-mergers

In late 2017, Syngenta completed the acquisition of Nidera Seeds, the crop seeds business of Chinese grains trader COFCO International for an undisclosed sum. Nidera is an important player in South America.

Nutrien, formed last year through the merger of Canadian fertilizer giants Agrium and Potash Corp of Saskatchewan (PCS), agreed to acquire Agrichem, one of Brazil's largest fertilizer companies.

Pharmaceuticals

M&A Activity with a Distinct Biotech Focus

In pharmaceuticals, super-dimensioned M&A activity has been somewhat more modest. Many of the transactions have been between players in the biochemicals segment or conventional drugmakers who wanted to enter this sector.

In last year's biggest coup, US healthcare giant Johnson & Johnson scored with Swiss biotechnology firm Actelion, taking the prize for \$30 billion after a fierce battle punctuated by a cameo appearance by French drugmaker Sanofi. As part of the agreement, J&J took an initial minority stake of 16% in the research arm spun off to Actelion's management.

US contract manufacturer Catalent agreed to buy contract development and manufacturing organization Cook Pharmica for \$950 million, boosting its position in the fast-growing biologics area.

Swiss fine chemicals and biologics producer Lonza acquired Micro-Macinazione, a contract manufacturer providing micronization of active ingredients for the pharmaceutical and fine chemical industries. Lonza also completed its acquisition of Capsugel, paying US private equity investor KKR \$5.5 billion for all assets of the US company regarded as one of the leading producers of capsules for delivery of drugs and food supplements.

US biopharmaceutical company Celgene said it would take a stake in China's BeiGene and help develop and commercialize that company's investigational treatment for tumor cancers. Later, BeiGene planned to acquire Celgene's operations in China and also license and assume commercial responsibility for the US company's approved therapies in China.

Fresenius Kabi agreed to acquire the biosimilars arm of Germany's Merck KGaA, which is divesting the business to focus on its pipeline of innovative medicines.

Sanofi announced it would buy Protein Sciences, a privately held vaccines biotechnology company based in Meriden, Connecticut, USA.

US Merck & Co unveiled plans to buy Germany-based Rigontec, a pioneer in accessing the retinoic acid-inducible gene I (RIG-I) pathway as a novel and distinct approach in cancer immunotherapy. A Merck subsidiary was to make an upfront cash payment of €115 million to Rigontec's shareholders, with additional contingent payments of up to €349 million.

Gilead Sciences offered almost \$12 billion to acquire compatriot Kite Pharma and gain access to Car-T, Kite's cutting-edge chimeric antigen therapy treatment for cancer. The experimental treatment re-engineers white blood cells to attack cancer.

The UK's largest player, GlaxoSmithKline (GSK), took an additional 26% stake in its Saudi unit, lifting its overall share in Glaxo Saudi Arabia Limited (GSAL) to 75%.

US pharmaceutical giant Pfizer sold its 49% stake in Hisun-Pfizer Pharmaceuticals, its Chinese joint venture with Zhejiang Hisun Pharma. In return, Sapphire I Holdings, indirectly controlled by private equity firm Hillhouse Capital, will acquire Pfizer's shareholding.

Roche announced plans to buy San Diego, California-based US group Ignyta for around \$1.7 billion in cash to expand the Swiss group's portfolio of cancer medicines. Ignyta is focused on precision oncology.

Distribution

One of the Most Proactive Sectors in M&A

The past year has been marked by a flood of M&A activity in distribution. German giant Brenntag announced plans to acquire all shares of specialty chemicals distributor Wellstar Enterprises (Hong Kong) and its three Chinese subsidiaries. Brenntag planned to take the majority stake of 51% immediately and the remaining 49% by 2021, operating the business in the interim as a joint venture.

Brenntag also acquired Medellin, Colombia-based Conquimica. The Latin American company mostly provides industrial and specialty chemicals to the coatings, food and cleaning industries and operates four warehouses in Colombia.

US distributor Univar acquired Paulinia, Sao Paulo-based distributor Tagma Brasil for an undisclosed sum, expanding its presence in the agricultural market. Tagma is a leading provider of custom formulation and packaging services for crop protection chemicals, including herbicides, insecticides, fungicides and surfactants.

AMVAC Netherlands, wholly owned by US specialty and agricultural products company American Vanguard, said it intended to acquire Grupo Agricer, a Costa Rica-based distributor of crop protection products.

Dutch specialty chemicals distributor IMCD bought Bossco Industries, a supplier of products and technical solutions to all major industrial markets in the US Southwest. It also acquired Canadian and US specialty chemicals and ingredients distributor L.V. Lomas and Italian specialty chemicals distributor Neuvendis.

In Italy, performance additives producer Italmatch Chemicals boosted its presence in Latin America with the purchase of Sudamfos do Brasil, a leading Brazilian distributor specializing in phosphonates, phosphates and other specialty chemicals.

Luxembourg-based Azelis acquired Georges Walther, a family-owned specialty chemicals distributor in Pfäffikon, Switzerland, for an undisclosed sum. Most of the acquired firm's revenue is derived from cosmetic ingredients, essential oils and fragrances. It was Azelis' fourth buy in 2017, after US distributor Ross Organic, Denmark's LCH and Chemcolour, based in Australia and New Zealand.

In March of this year, Azelis agreed to take full ownership of Distralim, a Moroccan distributor of food ingredients. Based in Casablanca, Distralim supplies ingredients for confectionery, biscuits and ice cream as well as several non-food segments.

UK-based 2M Holdings, which comprises several companies active in chemical distribution and related services, acquired German specialty chemicals distributor Franken-Kosmetik-Chemiehandel for an undisclosed sum in February 2018. Based in Nuremberg, the family-owned company primarily serves the personal care, home care and food ingredients markets in Germany, Benelux, Croatia, Macedonia and Slovenia.

Lonza Dedicates US Gene Therapy Center

April 17, 2018: Swiss fine chemicals producer and pharmaceutical industry supplier Lonza has opened what it said is the world's largest dedicated cell and gene therapy center at Pearland, near Houston, in the US state of Texas. The company said the new facility was built in anticipation of rising demand from developers of cell and gene therapies with an eye to providing them with the means to deliver these types of treatments to patients around the world more quickly and efficiently. At a dedication ceremony earlier this month, Lonza said the 300,000-square-foot (27,870 square-meter) facility offers, under one roof, access to some of the world's most innovative cell and gene therapy manufacturing technologies. The center of excellence has already begun toll manufacturing for some customers, the company said. When fully operational by the end of this year, it will employ more than 200 full-time staff including scientists, engineers, MBAs and biotechnology professionals, while continuing to add more high-value positions as market demand increases. "Lonza is committed to the evolution and cultivation of a diverse medical and life-science community in the Greater Houston area for many years to come," said Marc Funk, the Swiss company's Pharma & Biotech chief operating officer. Andreas Weiler, business unit head for Emerging Technologies at Lonza Pharma & Biotech, said the new facility, one of Lonza's four centers of excellence in cell and gene therapy, has the potential to produce treatment for thousands of patients suffering from rare genetic disorders or life-threatening diseases.

GSK and Novartis Join Anti-Malaria Effort

April 19, 2018: European drugmakers GlaxoSmithKline of the UK and Novartis of Switzerland have agreed to contribute to a nearly \$4 billion global research effort to fight drug-resistant strains of malaria. The companies will be part of a wide-ranging initiative called Medicines for Malaria Ventures (MMV), kick-started by a pledge of \$1 billion from the Bill & Melinda Gates Foundation. Glaxo plans to invest \$250 million, while Novartis has pledged more than \$100 million. According to the World Health Organization (WHO), emerging resistance to drugs and insecticides is making eradication of the insect-borne disease more difficult, with some geographies experiencing a resurgence.

The organization's figures show that the number of malaria cases rose 2% to around 216 million globally in 2016, with the number of deaths remaining constant at 445,000. Certain variants of the lethal parasite known as *Plasmodium falciparum* have become resistant to artemisinin – said to be the most potent medicine currently available. The resistant strains have been detected in five Asian countries and risk taking hold in Africa, according to Novartis, which makes an artemisinin the drug. Seeking an alternative to artemisinin and other anti-malarial drugs to which the disease has become resistant, the Swiss pharmaceutical giant and Medicines for Malaria began testing a new anti-malaria pill known as KAF156 in Africa last year. The company has promised to implement an "equitable pricing strategy" to maximize patient access in malaria-endemic countries. According to a new study, almost one in four blood bank supplies in certain regions of Africa may be contaminated with malaria parasites. Additional research efforts will investigate the likelihood of contracting the disease through infection with *Plasmodium* through blood transfusions. Glaxo and the PATH Malaria Vaccine Initiative meanwhile are due to begin pilot projects shortly for their first jointly developed experimental malaria vaccine, called RTS,S or Mosquirix, in Ghana, Kenya and Malawi later this year.

The drugmaker said the projects will take five years to complete. In November 2017, GSK submitted a new drug application to the US States Food and Drug Administration (FDA), seeking approval for a single-dose use of its drug tafenoquine for the radical cure (prevention of relapse) of *Plasmodium vivax* (*P. vivax*) malaria in patients 16 years of age and older. Bill Gates has stressed that the broader fight against malaria will depend on advances in science and technology, including gene editing. He has highlighted the promise of using Crispr to genetically alter mosquitoes and cause females to become sterile or produce mostly male offspring. Malaria is spread exclusively by the female mosquito.

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