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SWISS CHEMICAL SOCIETY NEWS

SCS Scientific Award Program 2022: Call for Nominations

The call for nominations for the SCS Awards 2022 is open until September 30, 2021.
Please visit our Website for further details and hand in nominations electronically to info@scg.ch

Paracelsus Prize
CHF 20'000 and medal in gold. Awarded to an internationally outstanding scientist for his/her lifetime achievements in chemical research.

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

Sandmeyer Award
CHF 10'000 for individuals or CHF 20'000 for groups. Awarded to a person or to a group for outstanding work in industrial or applied chemistry.

SCS Industrial Science Awards
This program includes awards on three career levels with cash checks of CHF 7'000, 10'000 and 15'000. It honors active industrial scientists working in Switzerland for their outstanding contributions in industrial R&D.

Green & Sustainable Chemistry Award
CHF 10'000. Honors outstanding scientific discoveries that lay the foundation for environmentally friendly approaches and products. It is implemented in collaboration with Syngenta as founding partner and SusChem Switzerland as hosting institution.

Clariant Clean Tech Award (deadline 31.08.2021)
CHF 5'000 for the winner and CHF 5'000 for runners-up. Awarded to Master students, PhD students, and Postdocs in Switzerland in the field of Sustainable Chemistry.

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. Awarded to a teacher working in Switzerland at high school (gymnasium) level for innovation in chemistry teaching.

Dr. Max Lüthi Award
CHF 1'000 and medal in bronze. Presented for an outstanding diploma thesis in chemistry conducted at a Swiss University of Applied Sciences.

Simon-Widmer Award
CHF 5'000. Honors distinguished scientists for their contribution to analytical science and the education of analytical scientists.

METAS Award
CHF 5'000. Honors outstanding contribution to the field of metrology in chemistry and/or biology.

The Grammaticakis-Neumann Prize will be awarded the next time in 2023.

More informatiuon: *scg.ch/awards*

Scientific Integrity: Establishing Standards Together

Over the past two years, a group comprised of experts from the Swiss Academies of Arts and Sciences, the Swiss National Science Foundation, swissuniversities and Innosuisse, have been working on a new code of conduct for scientific integrity. Its aim is to strengthen scientific integrity in research and educational settings, while addressing all actors, participating in the creation, dissemination and promotion of knowledge within the Swiss system of higher education.

For Institutions it serves as a checklist for their own regulations and as a practical reference when there is doubt about best practices. Furthermore, the code takes recent developments in the fields of open science and social media into account, and provides precise recommendations on how best to set up structures for the protection of integrity.

The code of conduct was published in four languages on 11 May 2021.
More information: *akademien-schweiz.ch*

Practical Guide to Sustainable Research Data

Science Europe launched its Practical Guide to Sustainable Research Data and provides guidance on how to ensure the long-term preservation and accessibility of research data.

The publication lays out three complementary maturity matrices for funders, performers, and data infrastructures to help create a common understanding of the approaches needed by the different stakeholders involved.

The matrices will allow organisations to evaluate the current status of their policies and practices, support the development of organisational 'agendas for research data' to ensure data sustainability, and encourage the alignment of policies with those of other organisations. Aligned approaches towards sustainable research data will provide a framework for researchers to share

their data in a sustainable way and further support Open Science in becoming the 'new normal' in research.

"Open Science builds on the fundamental features of research and innovation: transparency, openness, verification, and reproducibility. It should be deeply embedded within the practice of research but to achieve such change, appropriate policies and practices must be in place throughout the whole research and innovation system" explained Professor Melanie Welham, Executive Chair UK Research and Innovation (UKRI) and Science Europe Governing Board Member, in the guide's foreword.

"The matrices presented in this guide support organisations to develop and enhance their own policies and practices towards the sustainability and openness of research data, and encourage dialogue and collaboration with like-minded organisations. This directly supports the advancement of Open Science as a whole and helps it become an increasing part of a shared research culture" added Professor Roland Fischer, Vice-President of German Research Foundation (DFG) and Science Europe Governing Board Member.

More information: *scienceeurope.org*

Mapping Study for the Development of Sustainable-By-Design Criteria (SSbD)

The aim of this study is to map existing initiatives and R&I activities related to sustainability that are relevant for the development of sustainable-by-design criteria for chemicals, materials and products. It includes three main parts, 1) Identification of existing policies and initiatives that implement sustainability criteria, 2) Analysis of a sample of criteria under the relevant policies and initiatives with a focus on materials and chemicals, and 3) Analysis of the progress in R&I.

More information: *op.europa.eu*

A Warm Welcome to Our New Members!

Period: 29.04.–01.06.2021

Ali Abikhodr, Lausanne - Shima Alinejad Khabaz, Neuchatel - Willi Marco Amberg, Zürich - Andrea Arangio, Lausanne - Nina Arnosti, Therwil - Timur Ashirov, Fribourg - Lea Assies, Carouge GE - Alexandre Barth, Basel - Anja Baumann, Oberdorf - Sophia Belrhomari, Bern - Alice Boarino, Lausanne - Nikita Boeren, Bern - Andryj Borys-Smith, Bern - Liza Briant, Chens-sur-Léman - Thomas Buchholz, Basel - André Bütikofer, Zürich - Steven Campbell, Basel - Vincenzo Caroprese, Savigny - Diana Cavalli, Renens - Heng-Yu Chi, Sion - Gloria Clausen, Zürich - Jessica Clough, Fribourg - Polyxeni Damala, Chene-Bourg - Arthur Despois, Lausanne - Jyoti Dhankhar, Zurich - Pablo Diaz Kruik, Bern - Jia Du, Bern - Florent Dubray, Villigen - Madeleine Fellner, Zürich - Marc Fernandez Sabate, Glattbrugg - Dan Forster, Lutry - Ana Garcia Herraiz, Ecublens - Tanguy Gressard, Fillinges - Jasmin Hafner, Bussigny - Raphaël Hahn, Zürich - Julian Harrison, Zürich - Lukas Heuberger, Basel - Tim Hohner, Weil am Rhein - Minghan Hu, Zürich - Sarah Hübner, Lausanne - Shibashish Devidutta Jaydev, Zürich - Thomas Kader, Zurich - Ali Kaiss, Fribourg - Kuljeet Kaur, Lausanne - Jaspreet Kaur, Regensburg - Johannes Klett, Ecublens - Anastasiia Komarova, Chavannes-pres-Renens - Carla Kreis, Zürich - Ouidad Lahtigui, Lausanne - Nicolas Lardon, Heidelberg - Rémi Lavernhe, Chavannes-près-Renens - Lara Lavrencic, Lausanne - Nicolas Layglon, Geneva - Nikolaos Lempesis, Lausanne - Marc Lennon, Zürich - Nicolas Lentz, Bern - Miguel Leon, Basel - Bumhee Lim, Geneva - Lara Maeder, Meyriez - Kristina Makasheva, Lausanne - Momir Malis, Zürich - Canwei Mao, Genève - Maria Luisa Marques de Sa Faquetti, Zurich - Sandra Martinez-Jarquin, Zurich - Claudia Masucci, Dübendorf - Grégoire Menoud, Lausanne - Daniel Meyer, Allschwil - Carla Miro Vinyals, Lausanne - Mohsen Mirzakhani, Geneva - Amit Mishra, Basel - Neeru Mittal, Zurich - Joachim Mohn, Dübendorf - Claire Montagnon, Chavannes pres renens - Mohammed Mouhib, Lausanne - Livius Muff, Fribourg - Akshay Nataraj, Dübendorf - Marin Nikolic, Dübendorf - Yana Nikolova, Geneva - Robin Nussbaum, Geneva - Dominic Ormerod, Hoogstraten - Franck Oswald, Fribourg - Zeyou Pan, Villigen - Kostas Parkatzidis, Zurich - Romain Pertschi, Geneva - Andrew Platten, Bern - Ivan Prokhorov, Dübendorf - Milad Radiom, Zürich - Melania Reggente, Lausanne - Salomé Rieder-Walthard, Immensee - Maximilian Ritter, Zürich - Marco Rocca, Zürich - Eva Gabriela Röck, Bern - Manon Rolland, Zurich - Max Rossmannek, Zürich - Maximilian Rothstein, Zürich - Corentin Rumo, Les Vieux-Prés - Kevin Schindler, Bulle - Adeline Schmitt, Zürich - Leif Sieben, Greppen - Igor Sokolov, Wädenswil - Thomas Stadelmann, Zürich - Miguel Steiner, Zürich - Wowa Stroek, Bern - Thomas Suply, Zimmersheim - Ivan Surin, Zürich - Manu Shivanand Suvarna, Zürich - Cem Tekin, Lausanne - Mary-Lou Tercier-Waeber, Geneva - Alexandra Teslenko, Lausanne - Sophia Thiele, Lausanne - Georgios Toupalas, Zürich - Thomas Ullrich, Bottmingen - Jan Unsleber, Zürich - Júlia Viñas-Lóbez, Geneva - Olivier Viudes, Saint-Julien en Genevois - Maxime Vonesch, Ville la Grand - Haibo Wang, Zürich - Hyun Suk Wang, Zürich - Christina Wegeberg, Basel - Richard Whitfield, Zürich - Jennifer Wilson, Villigen - Xiangkun Wu, Villigen - Vanessa Wyss, Kappel - Shahboz Yakubov, Regensburg - Vasyl Yatsyna, Lausanne - Elena Zdrachek, Geneva - Kai Zhang, Zürich - Damin Zhang, Bern - Zhuang Zhong, Genève - Tianhong Zhou, Fribourg - Tangsheng Zou, Zürich.

HONORS, AWARDS, APPOINTMENTS

Robert Grass and Wendelin Stark, ETH Zurich, nominated for the European Inventor Award 2021

Inventors are the engine of progress and find new solutions that improve our everyday lives. To honor this creative force, the European Patent Office launched the European Patent Award in 2006. It aims to motivate future inventors and helps to protect ideas as well as encourage innovation.

The prize – a trophy in the shape of a sail as a symbol of the departure for uncharted shores – is awarded annually by an international jury in five categories: Industry, Lifetime achievement, Non-EPO countries, SMEs and Research. The jury evaluates innovations not only on their technological originality but also on their economic and social impact. In parallel, the public is also invited to vote for their favorites to win the Popular Prize. The winners in each category, and in the Popular Prize, will be announced at the award ceremony – held virtually for the first time in 2021, after the corona-related cancellation of the event in 2020.

DNA-based data storage

This year, the jury has selected 15 inventors and inventor teams from all over the world as finalists. They are also nominated for the Popular Prize. Among them are ***Robert Grass and Wendelin Stark*** from ETH Zurich. The two chemical engineers were able to convince the jury with their innovative method of data storage which involves encoding digital data on to DNA strands and encapsulating them within protective glass particles. The method could be used, e.g., to apply DNA markers to products, enabling origin tracing throughout the supply chain. In addition, the method makes it possible to store data, securely protected from decay, presumably for thousands of years.

Text and picture: *chab.ethz.ch*

Prix Schläfli 2021 award for the four best dissertations in natural sciences

The body's own defence against urinary tract infections, a new method for quantifying and determining genetic damage, evidence in so-called Diophantine geometry and the question of how soot from combustion processes influences the formation of clouds and thus, the climate – the Swiss Academy of Sciences (SCNAT) is awarding the Prix Schläfli 2021 to the four most important insights of young researchers at Swiss universities. Claudia Aloisi (Chemistry), Gabriel Dill (Mathematics), Fabian Mahrt (Geosciences) and Gregor Weiss (Biology) receive the prize for findings in their dissertations. The Prix Schläfli is awarded annually to the four best dissertations in the natural sciences. This prize was first awarded as early as 1866.

Picture from upper left: Gregor Weiss, Fabian Mahrt, Claudia Aloisi, Gabriel Dill

Claudia Aloisi – Harnessing the beauty of chemistry

Her work could pave the way for new forms of cancer screening: ***Claudia Aloisi*** researched at the ETH Zurich a new method for quantifying and determining DNA damage at ETH Zurich. She got the Prix Schläfli award in chemistry for this.

Text and Pictures: *scnat.ch*

JOURNAL NEWS

Chemistry Europe open data special collection now online!

John Wiley & Sons, Inc. announced a new four year read-and-publish agreement with swissuniversities to provide unlimited read access and to accelerate open access publishing among over 40 Swiss higher education and research institutions across Switzerland and Liechtenstein.

The read-and-publish agreement allows members and customers of the Consortium of Swiss Academic Libraries (CSAL) access to Wiley's subscription journals and grants researchers at participating Swiss institutions the ability to publish accepted articles open access in Wiley's nearly 1,400 hybrid journals, which span more than 200 subjects. The structure of this agreement will increase the open access output in Switzerland, adding thousands of articles published by swissuniversities researchers open access to the scholarly record.

"Working together, swissuniversities and Wiley will deliver more open access content, helping advance knowledge and scientific discovery across a wide variety of topics," said Judy Verses, Executive Vice President, Wiley Research. "We are excited to continue building partnerships across Europe and the globe that accelerate the transition to open access and lead the way to an open future."

Yves Flückiger, President of Swissuniversities, said: "In recent months, Wiley and swissuniversities have been able to work out a joint agreement thanks to great commitment on both sides, which is an important step for the implementation of the Swiss Open Access strategy."

This agreement marks Wiley's fourteenth open access agreement globally and sixth announced in 2021, following on the heels of read-and-publish agreements signed in Spain, Ireland, Italy, and the United States..

Source: *wiley.com* and *swissuniversities.ch*

Helvetica, Volume 104, Issue 5, Mai 2021

Communications
A Close-to-Aromatize Approach for the Late-Stage Functionalization through Ring Closing Metathesis
Boris Lozhkin, Thomas R. Ward

Full Papers
DFT Simulations as Valuable Tool to Support NMR Characterization of Halide Perovskites: the Case of Pure and Mixed Halide Perovskites
Claudio Quarti, Eric Furet, Claudine Katan

Synthesis of Highly Substituted Cyclobutanones by a One-Pot Keteniminium-Enamine Process
Dylan Dagoneau, Amandine Kolleth, Pierre Quinodoz, Beyza Horoz, Saron Catak, Alexandre Lumbroso, Sarah Sulzer-Mossé, Alain De Mesmaeker

onlinelibrary.wiley.com/journal/15222675/

INDUSTRIAL NEWS

Source: *www.chemanager-online.com*

Lonza Invests for Biopharma Customer at Visp

April 26, 2021: Swiss CDMO Lonza is investing 200 million Swiss francs at its Alpine site in Visp to build a new manufacturing complex for a long-term biopharmaceutical manufacturing partner. Lonza said the project is being supported by an unquantified capital contribution from the undisclosed partner. In the first buildout, the 2,000m2, six-level facility will produce antibody-drug conjugate payload molecules (ADCs) for oncology treatment. Due to start up in 2023, it is designed for future expansions supporting the small molecules technologies offerings, which will include drug substance and particle engineering technologies such as dry spraying dispersion, along with drug products. Lonza is regarded as an industry leader in ADCs. "Oncology continues to be the leading indication in biopharma and a key driver for highly potent ingredients such as antibody-drug conjugate payload molecules," said Maurits Janssen, strategic business development small molecules at Lonza. "In addition," he said, "small molecules oncology therapies require specific technologies. These challenges were specifically taken into account when designing this manufacturing complex."

Skilled worker shortage in vaccine development
Separately, Lonza's ongoing role in supporting production of Moderna's Covid-19 vaccine came into the spotlight last week when the US biotech's CEO, Stephane Bancel spoke to a virtual summit on the pandemic vaccine scale-up. Saying that more people are needed to produce Covid vaccines, Bancel noted that his company's European supply chain depends on the Swiss CDMO, which he said has struggled to find enough highly qualified personnel to fill the high demands of the vaccine rollout. To bridge the personnel gap, Bancel said Lonza is diverting workers from other projects at Visp, while hiring new employees and soliciting help from drugmakers, to which US pharma trade journal Fierce Pharma said Glaxo SmithKline (GSK) could belong. While its development project with France's Sanofi remains stalled, the UK's largest pharmaceutical company is already helping other vaccine producers such as CureVac and Novavax. Bancel added that finding enough highly skilled workers for vaccine-related projects is a major problem, not only at Lonza. At the same event, the Moderna chief said the US government-supported biotech is working toward having a booster shot against Covid-19 variants approved by late summer or early autumn this year. Moderna is on track to produce up to 1 billion doses Covid vaccines this year, along with as many as 1.4 billion next year, he said.

EU Going Ahead With AstraZeneca Lawsuit

April 27, 2021: The European Commission has confirmed rumors that it has initiated legal action against AstraZeneca for failing to meet contractual obligations for deliveries of Its Covid-19 vaccine. Health commissioner Stella Kyriakides said the action is being taken jointly with all 27 member states. AstraZeneca had initially pledged to deliver 120 million doses to the EU in the first quarter but supplied only 30 million. For the second quarter, 180 million doses had been advised, but the company's most recent advice was for only 70 million. On top of the originally ordered 300 million total, the Commission had an option to take 100 million more doses but has now said it will not exercise this. Rather it will focus efforts going forward on the mRNA-based shots produced by Pfizer/BioNTech and Moderna and the CureVac candidate still in Phase 3 clinical trials. The Commission's health spokesman, Stefan De Keersmaecker, said that "some terms of the contract have not been respected" and that "the company has not been in a position to come up with a reliable strategy to ensure a timely delivery of doses. What matters to us in this case," he said, "is that we want to make sure that there is a speedy delivery of a sufficient number of doses that European citizens are entitled to, and which have been promised on the basis of the contract." At the heart of the ongoing dispute is the question of how watertight the volumes set down in the EU supply contract actually were. The Commission and the com-

pany have argued over whether AstraZeneca's "to the best of its ability" meant development, manufacture or distribution of the vaccine. According to British politicians, the UK's contract is more precise, calling for binding delivery terms – something the drugmaker has not confirmed publicly. In March, European Commission President Ursula von der Leyen said AstraZeneca had "unfortunately under-produced and under-delivered. And this painfully, of course, reduced the speed of the vaccination campaign." Also slowing the speed of the campaign was the discussion of blood clots seen in people who received its shot, which was recently given the name Vaxezevria. Initially more than half of all EU member states paused their rollouts due to safety concern. Meanwhile, all but the Scandinavian countries have resumed vaccinations full speed. Denmark has announced it will stop using the AstraZeneca shot, and its doses may be up for grabs. Commenting on the lawsuit, AstraZeneca said it has "fully complied" with the Advance Purchase Agreement with the European Commission and will strongly defend itself in court. "We believe any litigation is without merit and we welcome this opportunity to resolve this dispute as soon as possible," the company added.

Sanofi comes to Moderna's rescue

In a move that could help speed up the rollout of Moderna's Covid vaccine, potentially in Europe and other world regions, Sanofi has again stepped in to offer manufacturing help. The French drugmaker said this week it would help fill and finish as many as 200 million doses of the Moderna vaccine at its Ridgefield, New Jersey, facility, starting in September. At a virtual pandemic summit held Apr. 23, Moderna CEO Stephane Bancel said the US biotech's production had slowed, due to bottlenecks at Switzerland's Lonza, its principal European supplier. The bottlenecks were reportedly due to the company's difficulty in hiring enough qualified workers for its plant at Visp. Swiss press reports suggested that the recruiting efforts were being hampered by the company's restrictive issue of work permits to foreign citizens. The deal with Moderna is Sanofi's third such agreement this year. In January, it promised to help supply more than 125 million doses of the Pfizer/BioNTech Covid-19 vaccine starting this summer. The drugmaker also has offered it to fill and finish 12 million doses per month of Johnson & Johnson's single-dose vaccine.

Lonza and Moderna Extend Covid Vaccine Collaboration

April 30, 2021: Swiss CDMO Lonza and US vaccine maker Moderna have extended and deepened their collaboration on the US biotech's mRNA- based Covid-19 shot. The new agreement, which calls for the installation of three new production lines and a doubling of existing drug substance production at Lonza's Visp, Switzerland, site, builds on a 10-year pact signed last year. Lonza already operates three lines manufacturing drug substance for Moderna's vaccine at the alpine location, as well as a US line at Portsmouth, New Hampshire. The Basel-based company said the new lines will go on stream sequentially at its Ibex Solutions facility in Visp, alongside the existing production lines for the Covid vaccine. The company said each is planned to have a production capacity equivalent to the existing lines and all should be in operation by early 2022. "Since we began working with Moderna in May 2020, its mRNA vaccine has proved to be pivotal controlling the Covid-19 pandemic. We have commenced and ramped up operations in our four existing production lines at an unprecedented rate and scale," said Lonza CEO Alain Ruffieux. The company said also that in March this year it added the largest number of employees ever. Recruitment for the additional production lines at Visp has already commenced as part of wider efforts to support its expansion plans at the site, which Lonza noted includes the announced investment of 200 Swiss francs in a new small molecule manufacturing complex with a capital investment from an unnamed global biophama customer. The CDMO added that it is seeking to attract specialists from the international market, as well as from within Switzerland. Remarks by Moderna CEO Stephane Bancel at a virtual pandemic summit last week pointed to difficulties in finding enough qualified personnel for highly specialized projects such as vaccine supply. Bancel said the biotech's European supply chain depends on its Swiss partner, which has faced recruiting issues. Unconfirmed reports suggested this week that – at the urging of the Swiss government – the CDMO may be able to draw temporary workers from a research center at compatriot Nestlé, a move said to be facilitated by the Swiss government. Reuters quoted a Nestlé spokesperson as saying the food giant wanted to play "an active role in global vaccination."

EU Concludes Major Deal with Pfizer/BioNTech

May 3, 2021: The EU has clinched the deal with vaccine team Pfizer/BioNtech hinted at in mid-April. European Commmission president Ursula von der Leyen late last week informed member states about the agreement that foresees delivery of 1.8 billion additional doses of the duo's mRNA-based Covid-19 vaccine though 2023. This includes an initial 900 million doses with an option for another 900 million. Under the terms, the 27-member bloc is due to receive nearly 29 million does up to the middle of this week. Commission president Ursula von der Leyen said that with the additional supply expected to be rolled out in the EU in the second quarter, the EU should be able to have 70% of its adult population vaccinated by July 2021 rather than the previous target of September 2021. The Commission's agreement with Pfizer and BioNTech will stipulate that the shots be produced as far as possible in an EU member state, including deliveries from CMDOs, and will extend to a range of different vaccine products. These could include booster shots to deal with virus variants as well as pediatric vaccines. According to the latest published figures, the EU has exported more than 150 million doses of vaccines produced within its borders. Japan has received the lion's share with more than 50 million doses. The UK and Canada have also been on the receiving end, as well as Mexico, Saudi Arabia, Turkey, Switzerland, Colombia and South Korea. Up to Apr. 27, some 126.6 million first and second doses had been administered in EU member states, fewer than the number of exports, press reports said. For the newly negotiated doses, EU member states will be able to decide whether they want to use their full allocation, or leave some for others to absorb, or to be resold or donated. They will also be free to make bilateral agreements with other pharmaceutical companies for vaccines in the future. The deal makes the EU the world's largest customer for the Pfizer/BioNTech vaccine – ahead of the US. While the bloc has not indicated that it will cancel any of its existing orders with other manufacturers, von der Leyen has said Brussels will concentrate its vaccination efforts on the mRNA shots as well as the protein-based shots made by US biotech Novavax and Sanofi.

Pfizer Exports US-made Covid Vaccine to Mexico

Pfizer has begun shipping US-made supplies of the Comirnaty vaccine to Mexico. This marks the first-ever doses the New York pharma giant has exported from its US plants, although it and German partner BioNTech have sent supplies to several countries from a plant in Belgium. According to the Reuters news agency, Mexico has received more than 10 million doses of the vaccine altogether. The drugmaker said it will make up to 25 million shots a week in the US by mid-year, which is more than it needs to meet its commitment to deliver the promised

300 million doses by the end of July. The US has been under pressure to share its surplus vaccine supply. As widely reported, the Trump administration last year barred US companies from exporting vaccines, but a source told Reuters that the restriction expired on Mar. 31. The administration of president Joe Biden last week said it would export up to 60 million doses of AstraZeneca's US-made Covid vaccine. All eyes are now on Washington to see whether and how many Covid vaccine doses it will ship to India, where the number of infections and death tolls are climbing rapidly. Talks between the US and the World Trade Organization over expanding access to vaccines are set to begin this week. The discussion will focus on how to get the doses "widely distributed, more widely licensed, more widely shared," White House Chief of Staff Ron Klain told Bloomberg.

Moderna to Double US Vacccine Production Site

May 6, 2021: US Covid-19 vaccine manufacturer Moderna said it is planning to make major renovations at its Norwood, Massachusetts, mRNA production site with the aim of more than doubling its size by late 2021 or early 2022. The plans call for transforming the facility from a production and lab space to an industrial technology center by acquiring another building located on the same campus. The US biotech announced late last week that it now expects to produce 800 million to 1 billion doses of its vaccine this year, with the goal of producing 3 billion doses next year. Along with increasing vaccine output, the expansion is also designed to enhance the company's technical development capacity and preclinical production capability toward producing thousands of preclinical samples per month for research and development. Extending the space will also boost the vaccine maker's technical capabilities, such as expansion of shelf-life stability and new pharmaceutical delivery forms including prefilled syringes and lyophilized products. In addition to the Covid vaccine now being administered worldwide, Moderna is also working on a number of other vaccine types, including adapted Covid versions, as well as drugs other than vaccines based on the mRNA platform. The company's US expansion goes hand in hand with plans announced by Moderna's principal European partner, Lonza. The Swiss CDMO said late last month it was installing three new production lines and doubling existing drug substance production at its Visp, Switzerland, site, building on a 10-year pact signed with Moderna last year.

COVAX gets shot in the arm from Moderna, France and Sweden

Moderna has said it intends to supply 34 million doses of its Covid-19 vaccine to the global COVAX program this year. The announcement followed pledges by France and more recently Sweden to donate doses of AstraZeneca's vaccine to the organization that provides vaccines to poor countries. The advance purchase order agreed after Moderna's shot was approved by the World Health Organization (WHO) calls for supply of 500 million doses altogether. However, according to the GAVI vaccine alliance, deliveries will only begin in the fourth quarter. Sweden's donation plans follow France's announcement last month that it would give 500,000 doses of AstraZeneca's vaccine to Covax by June, with the first supplies going to Africa. The Scandinavian country paused the use of the AstraZeneca vaccine in March after reports of rare, but serious blood clots. It later resumed using it but only for people aged 65 or older. It is still unclear what will happen to Denmark's AstraZeneca doses now that the country has decided not to use them. All of the donations will help to expand the COVAX program's current pipeline and potentially add variant-adapted vaccines in future. GAVI runs the vaccine sharing facility together with the WHO. The program hopes to have 2 billion doses available by the end of 2021.

US Comes out for Covid Vaccine Patent Waiver

May 7, 2021: The long simmering discussion over whether manufacturers of Covid-19 vaccines should waive their intellectual property (IP) rights in hope of giving more people access to a shot and whether this would indeed end the pandemic faster reached the boiling point on May 5 when the US unexpectedly joined a group of developing nations pushing for such a move. Asserting that "extraordinary times and circumstances call for extraordinary measures," US Trade Representative Katherine Tai said the administration of US president Joe Biden "supports the waiver of IP protections on COVID-19 vaccines to help end the pandemic and we'll actively participate in negotiations to make that happen." However, implementing such a move could be a lengthy process as all 164 World Trade Organization member countries must approve, she conceded. A WTO panel on intellectual property will debate the matter before the end of May, and a formal meeting is scheduled for June 8-9. The Biden administration's aim," Tai said, "is to get as many safe

and effective vaccines to as many people as fast as possible. As our vaccine supply for the American people is secured, the administration will continue to ramp up its efforts – including working with the private sector and all possible partners – to expand vaccine manufacturing and distribution. It will also work to increase the raw materials needed to produce those vaccines." Last week, the president announced that the US would release supplies of vaccine raw materials from the US stockpile to India, without saying precisely what these would be. Major vaccine manufacturers in other countries have accused Washington of hoarding products it doesn't need. Biden's decision – which initially sent shares of publicly traded Covid-19 vaccine makers tumbling – came as a surprise to many observers, as the new president previously had been seen as opposing the waiver of patent protection, despite pressure from the left wing of the Democratic Party. When the IP discussion first arose last year the administration of then-US president Donald Trump, as well as the EU and the UK, opposed the plans advanced by South Africa and India with the backing of other poorer countries, the World Health Organization (WHO) and other NGOs.

US moves catches Europe off guard

The US forward thrust this week caught Europe off guard and split the EU, which was just beginning to recover from an internal squabble over vaccine procurement, into different camps. European Commission president Ursula von der Leyen, who had previously declared she was "no friend" of patent waivers, offered that the 27-member bloc was "ready to discuss any proposals that address the crisis in an effective and pragmatic manner." French president Emmanuel Macron also reversed his earlier stance, saying he was for a waiver under the present circumstances. While Italy, too, signaled it was on board with US, the UK held its cards close to its chest, remarking only that it was "working with WTO members to resolve this issue." Germany was vehemently opposed to the plans. In a statement, the Berlin government said the proposal would have "significant implications" for vaccine production as a whole. "The limiting factors in the production of vaccines are the production capacities and the high quality standards and not patents," it said, adding that vaccine makers are already working with partners to ramp up manufacturing. Switzerland, Canada, Norway, Japan and Brazil have also been counted among opponents of a waiver. Most responses to the US announcement were along predictable lines. The WHO said a patent waiver would benefit India, which is in the grip of a deadly second infection wave. Its director-general, Tedros Adhanom Ghebreyesus, praised the US move as a "monumental moment in the fight against Covid-19." Such waivers are within the powers of the WTO and now is the perfect time to use them, he said. Samantha Power, administrator of the US Agency for International Development (USAID), called the government's action "a bold move and the right move." Waiving IP protections for Covid-19 vaccines will ensure we get them out to the world sooner and stop future outbreaks and new variants before they rise," she said. The medical NGO Médecins sans Frontières (MSF) commented that waiving patent protection "would increase sufficient and timely access to these lifesaving medical tools as Covid-19 continues to ravage countries across the globe."

Would technology transfer compromise quality and safety?

As could be expected, the pharmaceutical industry was not on the same page as the NGOs. While Moderna was the only vaccine maker to comment directly, several industry organizations expressed opposition to an IP waiver. Between applause and criticism of the US move, there was a discussion of what a technology transfer could achieve in terms of speeding up Covid vaccine production. Patents are not the only issue, was the general consensus. Commentators questioned how many companies would know how to make a generic copy of a complex vaccine, fearing that so that mana would struggle to reach the necessary quality standards. The head of the International Pharmaceutical Manufacturers and Associations, Thomas Cueni, told British broadcaster BBC that "technology transfer should not be forced," as handing knowhow to a company that has never used it could compromise quality and safety of the vaccines. A senior scholar at the Johns Hopkins Center for Health Security, Amesh Adalija, told Reuters that a waiver would amount to expropriating the property of pharmaceutical companies whose innovation and financial investments made the development of Covid-19 vaccines possible. Former head of the US Food and Drug Administration, Scott Gottlieb, who now sits on Pfizer's board, estimated that it could take a year after intellectual property transfer before a new company could make a vaccine. Others pointed out also that Oxford University's vaccine knowhow, which went into the shot manufactured by AstraZeneca, has already been licensed to Serum Institute of India. Moderna CEO Stephane Bancel told analysts he doubted that an IP waiver would help the situation, as his company's technology has been open to anyone since October 2020. One of the most pressing problems is finding qualified personnel to make the vaccines, he added, reiterating remarks made at a recent pandemic summit. "This is a new technology. You cannot go hire people who know how to make mRNA. Those people don't exist." Another issue mentioned by several industry players is the shortage of peripheral equipment needed to make vaccines, such as filters, tubes, bags and glass vials. Novavax complained last month that it would have difficulty filling the entire order of the EU Commission because it could not get the sterile bags in which to grow the virus cells for the vaccine. Germany's CureVac has also complained that its planned vaccine rollout is also being complicated by the US refusal to export. Brent Saunders, former CEO of US pharma player Actavis, who led the company's 2015 merger with Allergan and now heads Vesper Healthcare Acquisition Corp., called the discussion over patent waivers "political theater." Noting that it takes years to build new factories to produce vaccines, he suggested that "if the government wanted to be helpful, it would help expand the manufacturing capacity of existing companies" – a move the Biden administration actually has already initiated by nudging Merck & Co on board to help Johnson & Johnson. Inside the administration, there seems to be uncertainty about whether the planned moves would speed vaccine production. "Intellectual property rights is part of the problem," White House chief of staff, Ron Klain, told CBS News. "But manufacturing is the biggest problem," he said, referencing the irregularities at CDMO Emergent BioSolutions in Baltimore, Maryland. The company, whose plant was shut down after it allegedly mixed up doses of Johnson & Johnson and AstraZeneca's vaccines, has full intellectual property rights, but can't make any doses.

Lonza Continues Biologics Investment Spree

May 10, 2021: In two major new investments at its sites in Visp, Switzerland, and Portsmouth New Hampshire, USA, Swiss CDMO Lonza said it will spend 850 million Swiss francs to expand mammalian drug substance manufacturing facilities. With the two projects, it plans to add 550 jobs, 300 in Switzerland, 250 in the US. The plans for Visp include a new large-scale facility to expand capacity by six 20,000L bioreactors to meet increased demand for biologics, while a small-scale, single-use technology facility at Portsmouth will support customers scaling clinical to commercial manufacturing with capacity for up to eight 2,000L bioreactors Lonza

said the state-of-the-art, high throughput facility at Visp will include perfusion capabilities and is designed to support high titer processes and accommodate the next generation of mammalian biologics. The 650 million Swiss franc investment is due to be completed in 2024. The expansion will complement the existing large-scale global network at Lonza sites in Tuas, Singapore, and Porriño Spain, as well as at Portsmouth. The next-generation facility at Portsmouth will support late-phase clinical and commercial development and manufacturing, adding capacity for up to eight 2,000L single-use bioreactors over an area of 3,000 m2. This 200 million Swiss franc investment will help meet increasing market demand for small- to mid-scale mammalian-derived biologics and support the implementation of high titer and high throughput platform processes, the company said. The US plant, offering state-of-the-art technologies in perfusion, purification, and automation, will support Phase 3 clinical and commercial small- to mid-volume products. The facility expected to be completed in 2023 will complement the existing single-use network at Lonza sites in Hayward, California, USA; Slough, England and Visp. "As we look at the biologics market, we see a combination of growth at pace coupled with continuing high customer demand," said CEO Pierre-Alain Ruffieux, adding that "in recent months, the COVID-19 pandemic has placed the spotlight on supply chains and the critical role CDMOs play in ensuring an adequate supply of medicines." Lonza's planned expansions will ensure that it continues to deliver industry-leading contract manufacturing services that will support customers' needs in the medium and long term, Ruffieux said. In recent months, Lonza has announced several investments at Visp. In April, the CDMO said it would build a new complex for a long-term biopharmaceutical manufacturing partner at the alpine site and also make Prussian Blue for Natron Energy. This followed plans unveiled in December 2020 calling for two new suites for commercialization of antibody-drug conjugates as part of a long-term collaboration with a global biopharma company. In August 2020, the company said it was expanding its microbial manufacturing facility to supply long-term for acute lymphoblastic leukemia.

BASF Invests in Enzymes in Austria

May 11, 2021: BASF is investing in its enzymes business at the Novartis Kundl/Schaftenau Campus in Austria. The German chemical giant said the agreement with the Swiss group – for which financial details were not disclosed – will enable it to develop a world-scale operation for bacterial enzymes and biotechnology products. Start of production is planned for 2024, and BASF said it will explore the potential for a "deeper involvement" at the Austrian campus, which it noted has 75 years of biotechnology practice and corresponding infrastructure. "This investment is a clear sign of our commitment to the enzymes and biotechnology industry, said Michael De Marco, vice president Global Business Management Enzymes. With the investment, Soeren Hildebrandt, senior vice president Home Care, I&I and Industrial Formulators Europe at BASF, said the Ludwigshafen-based group will be able to help customers to address key market needs such as cleaning products with superior sustainability profiles and new product formats, based on its innovative enzyme technology. BASF will be the first external customer for the Life Science campus that the Swiss drugmaker is seeking to develop for the site in Austria's Tyrol region, which in addition to accommodating Sandoz' generics facilities is part of the Novartis anti-infectives platform. Specialized in biologics, from R&D to finished products, production there has a focus on antibiotics. "Tyrol is a key location for our global production network. Our investments in Kundl and Schaftenau reinforce our commitment to the region," said Steffen Lang, head of Novartis Technical Operations and member of the Novartis executive committee. "With the further development into a Life Science Park and the settlement of BASF, an important player in the field of biotechnology, we are strengthening the competence and innovation capacity of the area."

The Age of Sustainability – A Decade of Ongoing Change to Come for Chemical Companies

May 12, 2021: In a nutshell, reaching sustainability has become a key aspect for chemical companies and adjacent businesses along the product chain with a high entry hurdle for everyone. Many people will chime in when it comes to environmental damages caused by the chemicals industry. Seveso 1976, Bhopal 1984, the Rhine contamination 1986, the Exxon Valdez accident in 1986 and the Deep Water Horizon blast in 2001 are only the ones that are in the public memory. Every chemicals company and supply chain in this industry has been part of an environmental discussion and been affected by it. However, a lot has changed since the 1980s when environmental topics became more business relevant in the chemicals industry and adjacent industries. It started primarily in the Western hemisphere with high investments into environmental treatment plants and continued with stringent product safety measures and the development of alternative products. Some of these initiatives were used as protection against emerging countries and as measure to compensate for the cost of goods sold deficits, while most of them were used to reach sustainability goals. The effect of these measures is also reflected in the industry's greenhouse gas emissions. Since 1990, the emissions of the EU chemical industry have fallen nearly 60%. Nevertheless, the implementation of measures aiming for increased sustainability takes time, is costly and directly translates to higher prices for more sustainable and environmentally friendly products. For many years, consumers were not willing to pay a premium for products with a lower carbon footprint. Thus, cheap products coming from China and India, produced under different conditions, competed with products manufactured under environmentally improved circumstances in the Western hemisphere. The carbon footprint was not an issue at all. This perception has changed dramatically, mainly driven by governments and NGOs all around the world. The momentum was further accelerated by the Fukushima accident in 2011 which led many governments to rethink their position regarding the future protection of the environment. The Blue-Sky Initiative of the Chinese government started in 2017 is the latest example of such efforts. As a direct result, this has already and will continue to have a significant impact on the supply chain of chemical, agrochemical and pharmaceutical products. The discussion on e-mobility as the solution to reduce pollution from fossil-based engines has gained significant traction since 2018. It already has had and will continue to have an impact on the setup of many chemical companies, not only in the petrochemical space. Chemical companies, either small or large, will be fighting more than ever for acceptance in society and are expected to provide product solutions to today's and future problems. A lack of sustainability will cause a gap in competitiveness and subsequently value of companies.

Next Efforts to Improve the Carbon Footprint of Chemical Products

Sustainability has resulted from efforts over many years to improve the human-caused impact on the environment, which has worsened significantly over the last decades up until recently. Today the mid- and long-term targets are clear, one being the significant reduction of carbon dioxide emissions until 2050 as agreed to by most nations. In fact, 127 countries (responsible for 63% of global emissions) are considering or have already adopted net zero targets. Announcements with significant im-

pact were recently made by China with its intention to reach carbon neutrality before 2060, which by itself reduced the below stated end of century estimates by 0.2 to 0.3 °C. Furthermore, Joe Biden's administration aims for US carbon neutrality by 2050, which would reduce the global warming by another 0.1 °C. Taking the ambitious targets into consideration, it is no surprise that sustainability has also become an increased industry focus of investors in 2020 compared to prior years. But even though there is a broad consensus in politics, society and economy about what needs to be achieved, the paths to a "better world" are not underpinned by operational measures and are often scattered. What is missing are the concrete measures and actions to be taken and, above all, what they can be achieved with. There is a significant disconnect between the targets and the chemical industry's as well as consumer's reality. Furthermore, a more orchestrated global initiative is needed to make change happen. Beyond geopolitical measures there are solutions to be developed by companies, and products to be offered that are affordable for consumers, even though it is clear that bio-based and sustainable products and supply chains will cost more than today's products. Currently green products tend to come with significant markups of on average 75–85% and often exceed the amount the average consumer is willing or able to pay.

Circular Economy and other Initiatives Towards Sustainability
Linear economy is responsible for more than 50% of landfill of the 2 billion tons of trash generated around the world, while 60% of the global methane emissions of 570 million tons are created in conjunction with human activities. In this respect targeted and enforced measures are crucial if sustainability should become reality. Here, the chemicals industry represents an important driver; since only 6.6% of the 138.9 million tons consumed chemical products in the EU are recycled today. Circular economy is not a cure-all solution, but it is at least an effort and maybe a long-lasting approach to reduce waste and improve the eco-balance and thereby achieve better sustainability. However, the transformation towards a circular economy involves more than just recycling waste. It also involves a variety of measures and technologies that are utilized to, for instance, transform waste or plastic to oil, waste to energy, alternative or renewable feedstocks, second-generation fuels or Fischer-Tropsch synthesis to transform carbon dioxide into higher carbons. There is no one-size-fits-all approach. Large investments, improved technologies, and new and better materials to produce similar-performing consumer products will be needed. Furthermore, supply chains must be altered and adapted to create new or at least better value chains. This will also affect chemical distributors in the future. The concept of simply purchasing material in China or India and distributing it at a premium in Europe or the US will not be good enough anymore. Large distributors have already started to change their pattern and product platforms. Likewise, fine chemicals and intermediates produced under limited sustainability aspects will not fuel the business concepts of the future that have the goal to establish a circular economy and to excel in future markets. The circular transition for chemical companies relies on internal transformation that starts with a solid strategy and objectives followed by the decision on a portfolio of specific circular initiatives. The selection of initiatives should always be made based on a thoroughly conducted analysis of the company's current situation. Here, a visual representation of the value chain and material flow internally as well as within the broader ecosystem allows executives to identify the main weak points. At all times it is essential that the respective leadership team fully supports the transition and promotes it throughout the organization since a successful strategy requires more than the efficient execution of formulated initiatives. Far-reaching internal change should always accompany the practical implementation.

Transformation via M&A
Time is ticking and decisions have to be made. In a nutshell, reaching sustainability has become a key aspect for chemical companies and adjacent businesses along the product chain with a high entry hurdle for everyone. And it does not stop there, as valuations and prices for companies will be impacted by sustainability criteria. According to a recent study(Pitch Book 2020, "Sustainable Investment Survey"), sustainability is a key criterion to achieve improved and long-term results – it boosts attractiveness of companies and, subsequently, transaction values. This, however, means that a showcase just here and there will not be sufficient anymore. To transform a business, more than that is needed – more than a few products and more than just a strategy. It often requires structural transformations. This entails the question of how much time remains for transition as well as whether the costs can be borne by a company on its own. Most companies will need to evaluate whether the "make"-, meaning in-house development, or the "buy"-approach, meaning acquisition of skills, technologies or supply chains, is the right way to go. An alternative to both approaches could be the merger of companies either to be able to accomplish the huge investments by risk sharing, or in order to concentrate parts of the supply chain under the same roof. Examples are chemical and waste management companies which optimize their value chain. In this regard, M&A deals with sustainable aspects in the chemicals sector are on a constant level since the discussion gained traction. The greater portion of targets can be described as rather small, headquartered in the Western hemisphere with solutions mostly in materials and industrials sectors. A value-generating transformation through M&A is an appropriate way to boost change while, at the same time, increasing the value of the company. Also, selling a company at the right time or merging it with another company is an option to climb the ladder of sustainability. These options must always be tailor-made and require a lot of industry expertise and business experience – locally as well as globally. In addition, start-ups play an important role in a time where the chemical industry is striving for more sustainability. For them, the topic of a structured "exit value creation", early enough to develop a company towards the future exit of the current shareholders is often not considered or at least underestimated. Very often it is more common to "dress the bride" 6-9 months before the sales process starts. However, developing an M&A process under more strategic and mid-term aspects accompanied by professionals is a different approach – it needs a mix of combined M&A experience, business development skills and management experience from the outside. Finally, finding the right targets in the sustainability space, either start-ups or established companies, requires a lot of experience and industry know-how combined with access to a global network of M&A advisors.

M&A Activity Will Continue, No Doubt! - Chemical Distribution Mergers & Acquisitions Activity in a Post-Covid-19 Economy

May 17, 2021: Analysis of the mergers & acquisitions activity in chemical distribution under the impression of the pandemic situation and how it might develop going forward.
About this time last year, just when Covid-19 related lockdowns had begun to influence business and private life dramatically, everybody was anxiously looking at how mergers & acquisitions (M&A) activity in chemical distribution would develop. Looking back, one can say that the first quarter of 2020 was actually quite good with eight reported transactions. Not quite as good as Q4-2019 with 20 transactions though, and also not nearly as

good as Q1 of the previous year with 13 transactions. But 2019 had overall been the most active year since the financial crisis of 2008/09 with an almost 40% higher activity level than the previous years on average. As transactions take some time to develop, all this was no big surprise. The work had mostly been done before travel and meeting restrictions cut in, so all that was left was to let the ink dry on the contracts, have a few drinks (an activity which had to be postponed in most cases) and then send out the press releases. Then things started to change quickly and significantly. Chemical distributor M&A activity in 2020 was the lowest in seven years. But let us be clear, this is likely to be an exception. Activity levels did drop in Q2 and Q3 of 2020 to two and 11 reported transactions respectively. But later on things started to rebound. For Q4-2020 we recorded 15 transactions, one of the highest quarterly activity levels in history. In the last three months up to end of March this year, another 17 transactions were announced, nine of these in January alone. There is the theory that some of those transaction just could not be signed by year-end and where hence pushed into 2021. And most people agree, there is doubtlessly more to come.

Drivers of M&A Activity

A number of developments in the chemical distribution industry do have an impact on M&A activity. The various stakeholders have vested interests here. Let us start with customers and their needs. Customers and their' needs typically do not exert a strong influence on the level of M&A activity. The "formulator" companies that distributors sell the products to are typically interested in working with distributors that are reliable suppliers of a targeted portfolio of products fit for purpose, available locally on short notice, and marketed at a competitive price as well as attractive delivery and payment terms. Company size does not matter that much here, but other criteria such as scope, technical expertise, responsiveness or an understanding for the "small, local guy" do. So vis-à-vis distributor M&A activities the customers are sort of "neutral". Suppliers are different though. More and more chemical producers want to work with a distribution partner that can service a whole continent, rather than working with a long list of "local champions", a different one in each country, as it was often the case in the past. For these chemical companies a "reduction of complexity" is high on the list of objectives. M&A projects by their preferred distributors can help here, provided the acquisition targets are carefully selected, the projects are well executed and the acquired companies are thoughtfully integrated. In this context, the size (of a distributor) matters, particularly with regards to the need to have "critical mass". How the incumbent population of distributors in a given geography / industry market combination thinks and how the individual companies position themselves is a big factor in M&A. The larger distribution groups that are stock exchange listed (e.g. Brenntag, DKSH, IMCD and Univar) or are owned by private equity investors (e.g. Azelis) have always looked at acquisitions to enhance their growth rates, both in terms of sales and operating profits. Over the last few years, a number of mid-sized companies have taken financial investors on board (e.g. Barentz, Biesterfeld, Caldic or Oqema) and then subsequently ramped up M&A activities. Access to financing is also no issue to these two groups of companies, as there is plenty of liquidity in the market that is looking for attractive investment opportunities that are exhibiting good returns. More than half of the transactions recorded in 2020 were done by distribution companies with a turnover in excess of €1 billion. It should be noted in this context that our statistics may not cover small, local deals that have not been published in a clearly visible fashion in the European and/or North American trade journals or on the usually consulted "reference" websites. Add to this category a group of mid-sized privately held or even family-owned distributors that have made selective add-on acquisitions in the past. Many of these companies have some very profitable years behind them and hence are sitting on well-filled war chests. However, this last group of companies tends to be a bit more conservative when it comes to the valuation of acquisition targets. Although this is in general a sensible attitude to have, it has let some of the potential deals fall apart in pre-Covid times, as the rather frothy expectations of sellers regarding transaction multiples were sometimes at odds with the willingness of potential buyers to cut a deal at these levels. The "dampening effect" of Covid-19 may bring some much-needed realism back into the discussions, particularly about mutually acceptable valuations, even if it is shattering the high hopes of potential sellers

Forecasts for Valuation – Models are always an Issue

During the last 12 months, the task of performing valuations of acquisition targets did not get any easier. Although chemical distributors did generally very well in 2020, no company could really escape the effects of the various lockdowns, and economic uncertainty in general. Local logistics, at the core of any distributors' activity, held up very well though. Aggregated across different user industries, the business of distributors typically exhibited good resilience. But going forward and predicting future developments continues to be a challenge. Additional sources of uncertainty, such as the (petrochemicals) supply disruption triggered by the bad weather spell in the US Gulf during parts of Q1 or the general logistics imbalances need to be factored into the respective calculations. Currently there is hardly a product group in the chemicals and polymers industry, where the supply situation can be considered as stable. Shortages and supply delays or disruption are more the norm than the exception. It will take a while before growth trajectories can again be determined with sufficient reliability. Until then potential buyers will be wary not to overpay and remain "sitting on the fence" for a while. Sellers may also want to wait a bit, so they are able to show an upward trend for sales and profitability again.

The Way Forward

Over the next 12 months, our view is that M&A activity will come back to the levels seen before the pandemic. On the buyers' side, the growth strategies put in place previously by the companies mentioned above mandate further action. Implementation is going to continue, often encouraged by suppliers. And financing is available too. Even some of the largest distributors still have some gaps to show when it comes to geographic coverage or industry (sector) participation. Those gaps are being systematically closed. Selective add-ons will therefore continue to be very interesting. There are many willing buyers, provided the target fits a given strategy and is otherwise attractive. In this context, a comment on "distressed assets": Not that many companies really have the resources and willingness to solve other people's restructuring problems, although it cannot be excluded that some courageous companies will look out for such deals, to be done at a bargain price. But that would be an exception in our view. On the sellers' side, the situation is possibly a bit more diverse. For many owner-operators of smaller distribution companies the question of succession planning has always been around. Sometimes individuals did not want to acknowledge that and have hence left decisions open for too long. But the effects of Covid-19 on business and society in general have got people thinking. The topic has come more into focus for many owners. And some will change their approach as they may decide on doing other things in the next phase of their life after all. Small companies, who tend to pride themselves of their agility and nimbleness, generally have fewer levers to pull

when it comes to diversifying risk. Being part of a larger entity, a group of companies or even a global network can bring certain benefits here. Having more "stability" may be just what a business needs in volatile times. As the overall industry outlook is getting a bit more predictable again, hopefully, over time recovery will morph into growth. The forecasts underlying valuation models will become more reliable too, giving both sides in a potential transaction the notion that they are getting an attractive deal at an acceptable level of risk. That will certainly help deal-making and drive further consolidation of the industry.

DuPont to Invest in European Adhesives Business

May 25, 2021: DuPont Mobility & Materials said it plans to invest $5 million in capital and operating resources at its plants in Germany and Switzerland to increase capacity for its high-performance automotive adhesives. The US chemicals and life science group said the investment will help to meet growing demand for advanced mobility solutions for vehicle electrification. Newly installed equipment will facilitate the capacity increase as well as accelerate delivery of product samples to customers. DuPont's portfolio includes thermal interface materials to support battery thermal management during hybrid/electric vehicle charging and operation as well as multi-material bonding adhesives for vehicle body structure bonding and battery sealing and assembly. Other lines include structural adhesives for the body structure and battery bonding to support crash durability and lightweighting as well as glass bonding adhesives to enhance vehicle structure for OEM installation and aftermarket repair of glass parts. The latest capacity increase plans follow DuPont's recent announcements of investments in advanced adhesives solutions in the Asia Pacific region. Last month, it said it would invest around $30 million in a new plant in Zhangjiagang, Jiangsu Province, East China to produce adhesives for the transportation industry, specifically targeting vehicle electrification and lightweighting. Construction is scheduled to begin in this year's third quarter, with start-up expected in early 2023. In addition to Europe and Asia Pacific, the US group's Mobility & Materials arm has manufacturing operations and R&D capabilities in North America and Latin America. The segment's sub-unit Performance Resins and Advanced Solutions unit reported double-digit growth in the 2021 first quarter, which DuPont said reflects the continued recovery of the global automotive market as well as strong demand for specialty pastes used in consumer electronics.

How Chemical Companies Can Beat Customer Churn

Six Key Areas to Focus on and Keep Customers Content

May 25, 2021: The chemical industry is at a crossroads: customer behavior and needs are changing, and chemical companies must rethink how they do business to meet shifting expectations. Accenture's B2B Customer Insights survey identified six key areas chemical companies can target to keep their customers satisfied and drive growth. By doing so, they can beat customer churn and build better relationships with their buyers. When it comes to choosing a chemical vendor or supplier to work with, today's B2B customers are increasingly focused on product quality and the level of service on offer. But our research shows that to maintain competitiveness, chemical companies must rethink how they do business. Most are already aware of challenges in this changing landscape: 78% of chemical companies are concerned about losing their customers. Business customers now expect more – and they're willing to pay for it. Our global research on buyer values found that 46% of customers would pay notable price premiums (at least 5%) if all their needs were met. About 56% of them would make sizable increases (over 10%) in purchase volumes. Buyers want tailored solutions at scale from trustworthy and transparent providers. To keep their clients content, chemical companies should innovate the entire customer experience. In the past, account management, long-standing relationships and price were the most important factors. Today, the biggest driver of customer churn is a below average commitment based on traditional channel management and price instead of value focus. To prepare for the new reality of providing value in the digital age, chemical companies should seek an immediate alignment of go-to-market and customer expectations. This will pay dividends in the short term. It will also help boost the mid-term shift to a digitally powered organization. Targeting the six key areas outlined below will help chemical companies keep B2B customers engaged and content with both the products they purchase and the service they receive.

1. Experience, Expectations & Loyalty: Tailored Solutions Are Key

Customer behavior and demands have shifted. Failing to respond to these changes can be very costly: 58% of buyers said they would change providers if their preferences were not met. Chemical companies must build and foster relationships with customers through tailored solutions delivered at scale. Indeed, more than a third of respondents to our survey rank the flexibility to tailor solutions to specific customer needs as the most important key buying factor. To boost relationship quality, chemical companies must also establish trust and transparency. This can be best achieved by investing in R&D with an understanding that this encompasses not only chemical products but also services and new business models in response to evolving customer needs. Timely, consistent, and reliable communications remain a very important facet of customer experience. This cuts across (digital) communications and sales channels such as distributors and agents in terms of support throughout the entire buying cycle – from inquiry to after sales technical service and trouble shooting. Leveraging a well-designed channel mix and architecture can massively reduce churn. While automated solutions such as chatbots can help, it is vital that, e. g., conversational AI engines and other digital assistants are trained and managed properly just as much as direct sales and service employees.

2. The Changing Market Landscape: Value Is no longer Decided by Price

Product quality and customer service are the most important key buying factors. Almost half of chemical companies (46%) say they're struggling to get these right and fear competitors could surpass them. Additionally, 56% of buyers said they could switch to alternate materials, including those from outside the chemical industry, if a product did not meet their standards. Chemical companies must double down on quality while greatly expanding the scope of their customer service. Value is no longer decided by price, but by creating individual experiences and solutions. Service quality and reliability are valued most regardless of the company's size. A notable exception are large companies which are primarily influenced in their decision making by product and solution quality. They often take high quality interactions and convenience as a given. Smaller companies tend to be more price sensitive while larger businesses are more driven by loyalty. Chemical companies can satisfy both through subscription-based models for services and products, using a dedicated digital platform for purchases, support and more. New entrants in this field include platforms like Chemondis or Knowde as well as e-commerce players such as Alibaba, which are increasingly drawing volumes and building out digital features as well as experience-driven interactions.

3. Moments that Matter: Human vs. Digital Self-Service

Even before the upheaval of last year, interactions via digital

channels were on the rise. During the first 6 months of 2020, there were approximately 52% more interactions via digital channels than human interactions. The pandemic has spurred this on as restrictions made business as usual almost impossible. Chemical companies can capitalize on this by introducing more frequent, positive, and proactive touchpoints across the customer lifecycle. While chatbots and other automated solutions can help here, human interaction is still necessary. It's a vital component of customer satisfaction in the post-digital age. The moments that matter most for customers all continue to be high human touch. Chemical companies should look to digitalization to drive efficiency in routine and low-touch interactions while focusing the high-touch human interactions on the decisive moments for customer satisfaction. Among these are newly developed products and services which can make a difference regarding loyalty. Multichannel experiences with both human-agent and digital service channels solve the issue of preference as customers are able to use a variety of channels for communication.

4. Dedicated Access and Account Management with Digital Support

The prevalence of dedicated account management is decreasing with just 29% of respondents leveraging an individual or team to handle sales and service requests or transactions. Even when utilized the frequency of interactions is relatively low: more than two thirds connecting directly with customers only on a monthly to quarterly frequency. The reason for the diminishing emphasis on dedicated account personnel is simply that customers expect access to all relevant information through the chemical company's digital platforms. Technology can be used to streamline interactions through platform-based customer portals. These should provide a full range of ordering capabilities, including automated transactions, and permit faster electronic "conversations". This will allow customers to access up-to-date information and receive immediate feedback about requests online. Automated after sales services can handle customer interactions 24/7 through a variety of channels, ensuring queries are always answered. Sales and service representatives can drive value for buyers by targeting specific needs through the identification of new products and services such as automated replenishment, higher efficacy, CO2 reduction, better lifecycle performance and circularity to name only a few. Sales and service employees at chemical experience leaders are knowledge masters who keep their customers up to date with the latest advances. Our research found that there is clearly room for improvement as only one third of customers are satisfied with their experience of proactive support.

5. Priorities and Influencers: The Importance of Reputation

The time has come for chemical companies to take a decisively customer-orientated stance and leverage their external community influence rather than being contempt with their internal reputation and mediated reports of customer satisfaction. Our research notes that external brand reputation is highly important for buyers when selecting a chemical supplier. Other factors, like internal opinions, reviews from co-workers and past performance have less impact. The days when price was the most influential factor are long gone – cost savings also have little influence on decision making. However, returning customers are less likely to stick with a chemical company if they have experienced any critical issues with products or services. In such cases, it will take significant measures to keep the purchaser from switching to another company – 81% of customers would expect a discount of up to 25% to prevent them from switching.

6. Technology Innovations: Applying the B2C Playbook

As part of our research, we investigated the investment in and focus areas of technology innovation as key pillar of taking the business customer experience to the next level. Most companies know tech innovations are a must-have – 66% of chemical companies believe new technologies can help them get customer centricity right and boost profits by more than 10%. Chemical companies that lead with experience are increasingly implementing technology innovation across the entire buying cycle. In a nutshell: they have started to apply the B2C playbook. And they are now providing experiences that business customers truly value. Nevertheless, the journey has just started for chemical firms to match well established B2C experiences in the business-to-business realm.

Business customers of chemical companies are willing to pay more for experiences that boost value. The majority of respondents indicated a willingness to pay for features such as reduced search times, shorter order lead times, digitalized technical support as well as better (and digital) access to new products and services. If these requirements can be fulfilled a good return on investment in developing new customer experiences can be expected. Moreover, there are additional opportunities to build better partnerships with B2B customers by way of new technologies. For example, blockchain can be used to establish records transactions between chemical suppliers and buyers in a secure way to create a single source of trusted data. Likewise, 24/7 AI-powered customer service enables higher levels of data-driven service quality and can massively reduce churn rates. However, 74% of chemical companies are already facing data-related challenges. They have either got too much, too little, or poor-quality data. To solve these issues, they must commit to being a data-driven organization. Dedicated analytics teams can make effective use of the large volumes of data typically available to chemical companies by extracting deeper insights that power better decision making.

Conclusion

Changing customer behaviors, needs and demands are forcing chemical companies to rethink their organizations. By focusing on the six key areas described above, chemical companies can rise to the challenge and build closer relationships with customers and deliver even greater value. This will help them stay competitive now and in the future.

Is the Beauty Industry Sending the Wrong Message? – Ingredient Trends Reveal: Consumers Are Moving Away from Solely Focusing on the Surface

May 25, 2021: As gender and diversity, as well as the body positivity movement, become more and more prevalent among young consumers, beauty companies are finding that they are going to have to re-define how products are advertised if they want to stay relevant. The success of the beauty industry, in large part, depends on how effectively its advertising can convince consumers that they need to invest in new products in order to become more beautiful. Beauty product and cosmetic procedure companies have historically preyed upon women by leveraging their insecurities to be used against them. The results, while good for the success and growth of the beauty industry, have also effectively contributed to a rise in anxiety and self-esteem issues, particularly among young women. But today, as gender and diversity, as well as the body positivity movement, become more and more prevalent among young consumers, beauty companies are finding that they are going to have to re-define how products are advertised if they want to stay relevant. While there are few signs that the beauty and cosmetic procedure industries are going to slow at any point in the near future (projections actually show the industry growing substantially over the next decade).

Wealth, Class, And Social Status

It is no secret that beauty products have long been associated with wealth, class, and social status – but in different ways. Going back as far as ancient Egypt, wealthy Egyptians would line their eyes with black makeup made of things like charcoal or even lead in some cases. Richer Egyptians could afford more vibrant makeup made from expensive ingredients, giving them a way to distinguish themselves from their less wealthy counterparts through their physical appearance. Throughout history, nearly every culture has used cosmetics to enhance physical appearance in some way. In Edwardian England, for example, women started using makeup to very subtly enhance their features. In the early decades of the 20th Century, beauty products were becoming increasingly common, and cosmetics were used by the wealthy to give the appearance of effortless perfection. Even today, many still hold on to the belief that the art of makeup is in making it look like you are not wearing any makeup at all. But regardless of how makeup is looked at or what cosmetics trends are big in the moment, the overarching theme points to the fact that makeup, historically, has been used to associate beauty with prestige in society. A 2016 study investigated the ways in which men and women looked at cosmetics among their peers in relation to feelings of dominance or prestige. The study concluded, after surveying how both men and women perceive makeup, that men see makeup as a direct correlation with earned prestige, where women see makeup as a way for other women to assert dominance over one another. In other words, men view makeup as a natural correlation between success and status, where women see makeup and recognize it as a manipulation tool used to assert dominance. All of this has contributed to the ways in which cosmetics are advertised, as makeup is often advertised as a tool for success (even generation z often refers to becoming more beautiful as a "glow up" as if success and happiness are correlated to beauty).

Cosmetics and Body Image

Because cosmetics are often associated with status and prestige, advertisements for them have a direct connection to an increase in anxiety, as well as lower self-esteem and self-confidence, particularly among young women. Beauty advertisements are designed to make women feel that there is something wrong with their physical appearance in order to sell them a product. A 2012 study discussed the ways in which women are constantly reminded of what beauty standards are, and how they don't live up to them, through advertisements for new products. Even since then, an onslaught of new cosmetics, skin care products and cosmetic procedures have further convinced people that in order to be considered beautiful, they need to have perfect, young-looking skin with chiseled features, a sun-kissed glow and shining, full hair. From lip size to hair thickness and even eyebrow shape, cosmetics and the advertisements for them are inherently designed to point out a person's flaws so that they can sell a solution. In particular, cosmetics and cosmetic procedures designed to change a person's appearance to make them appear more skinny or chiseled are often associated with modern beauty standards but are seldom associated with directly conflicting with the body positivity movement. Where the fashion industry is highly scrutinized for its use of thin bodies as a beauty standard – and a size standard for clothing in most societies – the beauty industry is largely exempt from that type of criticism. However, the beauty industry often places an even greater importance on thinness as a form of beauty. Even among natural beauty companies and products, thin bodies are associated with health in ways that larger bodies are not. Recent movements to further canonize the body positivity movement have begun including the cosmetics industry. A 2019 Refinery 29 article pointed out the ways in which the word "skinny" is used in the beauty industry to advertise products to people. The article argues that products designed to do things like decrease signs of aging or eliminate cellulite do little to contribute to a body positive society and, in fact, are more harmful than they are effective. Other products, like beauty products designed to make dark skin appear whiter, contribute to body image issues among Black women and men that have darker, more melanated skin. Many Asian products, still, advertise white skin as a desired beauty standard, sending a clear message that darker complexions are a problem that needs to be fixed and not a form of beauty on their own. Entire books have been dedicated to discussing colorism within the global beauty industry, yet brands continue to advertise themselves as diverse while using racially ambiguous models rather than clearly Black models. In addition to body type or skin color, the one stereotypical beauty ideal that has resisted changing trends over time is age. Reducing wrinkles, looking youthful, and having smooth skin are all beauty product claims that have withstood time and still remain one of the most prominently advertised sections in beauty shops: anti-aging products. In fact, whereas in the past these products were marketed to people aged 45+, now products in this space are being promoted also to younger people under the age of 30 with claims that they proactively slow down the development of aging spots, dark eye circles, or wrinkles.

Ingredient Trends Are Going Back to the Roots (literally)

Although these superficial beauty ideals remain prominent in the industry, consumers are moving away from solely focusing on the surface. They are increasingly conscious of what they put on and into their bodies and, in line with the growing preference for whole foods when it comes to our diet, consumers are looking for beauty products with natural, plant-derived ingredients because they believe these ingredients to be "better for them" and for the environment. Whether this is true warrants a separate discussion in and of itself since it is not necessarily always the case – poison ivy, for example, is a natural substance that's not always good for you, and sometimes the most environmentally responsible ingredients are synthetic. What is true, though, is that the words "natural" and "clean" are not regulated by governing bodies and can therefore be applied by brands based on their own definitions – and there is incentive to do this since consumers respond to it. This trend is also reflected in the search trends we are seeing on the platform. Searches are primarily conducted by formulators and R&D teams within beauty brands when sourcing ingredients as they develop a new product. The most searched terms on Covalo's beauty ingredient search engine in the first months of 2021 include "Oils", "Plant Extracts", "Powders", "Surfactants", and "Essential Oils", with "Plant Extracts" being a consistently high-ranking term since mid-2020. Despite wanting more natural products, consumers still want to see results that address the skin "problems" so deeply ingrained in our society, such as reduction of wrinkles, dark spots, and so on. This is reflected in rising searches for performant yet natural ingredients that ingredient-savvy consumers are picking up on. One example is Bakuchiol. Since 2019 we have seen a 300% increase in searches for this ingredient, an antioxidant that is often referred to as the natural alternative to retinol, which is the incumbent star anti-aging ingredient (a vitamin-A derivative touted for speeding up skin cell turnover, thereby reducing fine lines and dark spots). Bakuchiol is derived from the seeds and leaves of a plant native to India and Sri Lanka that is commonly known as babchi.

How Can the Beauty Industry Change?

In the future, brands and cosmetics suppliers should be careful to avoid language in advertising that contributes to harmful stereotypes on what is and is not considered beautiful. In an

age where diversity is being celebrated, products that advertise to whiten skin, remove signs of aging, make your face appear more slender, or use cosmetics as a way to attribute wealth and success are likely to feel more outdated and obsolete. Similarly, in a world where the boundaries of gender are stretching – especially among younger consumers – makeup and cosmetics are being attributed as a fun way to express your creativity rather than exhibit beauty and social status. When it comes to the natural movement, brands should be clear about what they define as natural or clean, and even when marketing these products they should remain conscious of the beauty issues or ideals that are being promoted to ensure the product is still inclusive.

UK Regulator Casts Doubt on AstraZeneca's Alexion Buy

May 26, 2021: AstraZeneca's agreement to acquire Alexion Pharma for $39 billion, sealed in December 2020 and approved by the US Federal Trade Commission (FTC) in April 2021, may not be a done deal after all. The UK's Competition and Markets Authority (CMA) announced on May 25 that it has launched an anti-competition investigation into the transaction. The CMA said it will examine whether the transaction would hurt competition "within any market or markets in the United Kingdom." The agency is soliciting public comment until Jun. 3 and hopes to make a decision by Jul. 21. If in the meantime it has reason to believe a "realistic prospect" of threats to competition, it may launch a more in-depth assessment lasting a minimum of 24 weeks or up to 32 weeks in special circumstances. From a portfolio perspective, analysts say there is no significant geographic or product overlap between the two companies. The Cambridge, UK-headquartered Anglo-Swedish drugmaker said it still hopes to complete the acquisition by this year's third quarter. The boards of both companies have given their thumbs up and shareholders have approved. In addition to the US, the plans have also been greenlighted by antitrust authorities in Brazil, Canada, Russia and Japan, among others, although the EU and China have not yet weighed in. Alexion is based in Boston, Massachusetts and rings up most of its sales in the US. It manages international operations from Switzerland. AstraZeneca has pitched the acquisition as a means to establish a strong presence in rare disease and immunology, supplementing its current focus on oncology and cardiovascular and metabolic diseases. The acquisition could potentially add five new products to its portfolio. The FTC's undiluted approval surprised observers who had expected higher hurdles under new US president Joe Biden, a Democrat. Some analysts had predicted that the commission's leadership, which has hinted at more aggressive oversight of biopharma deals in particular would block the takeover or attach tougher conditions. Matches such as that of Bristol-Myers Squibb and Celgene have been blamed for high drug prices and anti-competitive behavior. This was the biggest biopharma M&A deal sealed in 2020. Others speculate that the FTC could just let its UK counterpart – or another – do the work. Speaking to the US trade journal Fierce Pharma, a lawyer familiar with approval process tactics explained that the US agency has to convince a federal judge to block a merger, but its counterparts in other jurisdictions can do this on their own. If the CMA, for example, said the deal would hurt competition and blocked it, the US agency could avoid leaping through time-consuming judicial hoops.