SCS
Swiss Chemical
Society

Community News

www.scg.ch

www.chemanager-online.com

SWISS CHEMICAL SOCIETY NEWS

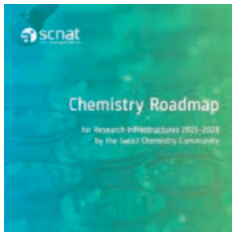
Update your SCS membership profile

By launching the new SCS website we aimed to provide a modern website with clearly structured content that also fulfills the today's safety standards. The site reflects the four business areas in which SCS is active: Events, Networks, Awards and Publishing.

Check your profile on scg.ch and review your areas of interest and affiliations with SCS thematic and social networks. We use the links to send you tailored information about the communities' activities.

We are confident that the new improved website will serve the community and pose an accurate platform for scientific exchange in all fields of chemistry as well as for networking.
Login on *scg.ch*

Chemistry Roadmap for Research Infrastructures 2025–2028 by the Swiss Chemistry Community



This community roadmap presents the vision for the future development of chemical sciences in Switzerland. It recommends to set-up or consolidate seven national infrastructures grouped into two pillars of discovery- and challenge-oriented infrastructures, which should foster multinational scientific exchange and collaboration.

The roadmap represents the view of the Swiss scientific community in the field of chemistry and is a formal element of the process to elaborate the Swiss Roadmap for Research Infrastructures 2023. This bottom-up contribution to the identification and selection of important national and international research infrastructures has been coordinated by the Swiss Academy of Sciences (SCNAT) on a mandate by the State Secretariat for Education, Research and Innovation (SERI).
Source: *chem.scnat.ch*

Chemistry Rediscovered: participate in the EYCN video competition!

The Young Division of EuChemS, the European Young Chemists' Network (EYCN), launched the 3rd edition of its video competition Chemistry Rediscovered, which is supported by the Wilkinson Charitable Foundation.
All young chemists and interested people of 12–35 years old are invited to send in their creative videos on the theme "Safety in Chemistry". Many prizes will be awarded to the best videos – the main prize will be a trip to the 8th EuChemS Chemistry Congress in Lisbon, Portugal.

Application deadline is September 30, 2021.
More information on: *www.euchems.eu*

Review Process: International Vocabulary of Metrology

The Joint Committee for Guides in Metrology (JCGM) has initiated the circulation for review of the first Committee Draft (CD) of the document JCGM 200, International Vocabulary of Metrology (VIM), 4th edition.

This document is now being circulated for review amongst the eight member organizations (BIPM, IEC, IFCC, ILAC, ISO, IUPAC, IUPAP, and OIML). As part of IUPAC, SCS and its members are asked to comment the draft and to give feedback. Please contact Dr. Zoltan Mester, President of the Analytical Chemistry Division, directly with your feedback. Deadline is 30 June 2021.
More information on
iupac.org/international-vocabulary-of-metrology

Sign-on Campaign: Developing a global science-policy body on chemicals and waste

The international development on global environmental governance occurring within the framework of the United Nations Environment Assembly (UNEA5) was presented to a broader public in February 2021. For the first time, chemical pollution will become a priority for UNEP's work in 2022–2025, next to climate change and biodiversity. Furthermore, the governments around the world are discussing how to strengthen the science-policy interface on chemicals and waste.

We would like to invite you to voice your support for establishing a global science-policy body on chemicals and waste, akin to the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). Such a body will be able to (1) greatly enhance informed policy-making by the international community in identifying and addressing the global threat of chemical pollution and (2) help engage the wider scientific community, including social and nature sciences, in conducting timely policy-relevant research and making their research visible to policymakers.
Please sign-on here to voice your support: *www.ipcp.ch*

This list of signatories will be compiled into an information document for the 2nd session of UNEA-5 (United Nations En-

vironment Assembly) in 2022 and will be posted on the IPCP website. Please also share the page with your fellow colleagues. Chemical pollution is a global threat that warrants global actions, and enhancing global governance to achieve this needs our support.
Source: *www.ipcp.ch*

Book review: All knowledge you need to know about new researches and findings of crop protection products

The new book 'Recent Highlights in the Discovery and Optimization of Crop Protection Products', based on key presentations given at the 14th International IUPAC conference on Crop Protection, May 19–24, 2019 in Ghent, Belgium, highlights the most prominent, recent results in the search for safe and effective new crop protection products. The book was edited by Peter Maienfisch and Sven Mangelinckx.

With a focus on the design, synthesis, optimization and/or structure-activity relationships of new chemistries targeting insect, disease, weed, nematode, vector and animal parasite control, the book also includes recent developments in crop enhancement chemistries and new approaches to crop protection products. The inclusion of information on testing tools, green chemistry approaches, and the latest discovery tools, like modeling, structure-based design, and testing tools makes this volume complete.

This book includes the many exciting new discoveries and findings reported. It is designed to inspire additional research and advancement in the field. We recommend scientists (chemists, biochemists, biologists, molecular modelers, R&D managers) focused on crop protection and graduate students in the above read it.

Peter Maienfisch is lecturer at the University of Basel and was Research Portfolio Manager Insect Control & Seedcare at Syngenta until April 2020. Peter is a member of the SCS since 1980 and was member of the CHIMIA Editorial board until 2015.

In additon Alain De Mesmaeker, SCS President and Sarah Sulzer, CHIMIA editorial board member are, amongst others, co-authors of some book chapters.
Source: *news.agropages.com* and *scg.ch*

A Warm Welcome to Our New Members!

Period: 06.03.–31.03.2021
Markus Ammann, Villigen – Linus Becker, Winterthur – Daniel Dunkelmann, Cambridge, UK – Frederik Eiler, Zurich – Xingyu Liu, Lausanne – Thierry Meier, Nyon – Thomas Meier, Basel – Florian Ruepp, Uster – Clara Schweinzer, Zurich.

HONORS, AWARDS, APPOINTMENTS

Heilbronner-Hückel Lectureship Award 2021 is given to Prof. Clémence Corminboeuf, EPFL Lausanne

Prof. Clémence Corminboeuf, EPFL Lausanne, is honored with the 2021 Heilbronner-Hückel Lectureship Award and invited to a lecture tour in Germany, as soon as international travel is possible again without restrictions.

The research of Clémence Corminboeuf focuses on electronic structure theory in the area of method development and conceptual work applied to the field of homogeneous catalysis and organic electronics. She and her research group contributed to the establishment of quantum chemical approaches and are increasingly involved in injecting our quantum chemical expertise into machine learning models.

The Heilbronner-Hückel Lecture Series was implemented in 2009 with the first series in 2010 together with the Gesellschaft Deutscher Chemiker (GDCh). The annual series take place alternatively in Switzerland and Germany.

The series is named after the chemists Edgar Heilbronner, born in Munich in 1921 and passed away in Herrliberg in 2006, and Erich Hückel, born in Berlin 1896 and died in Marburg in 1980.

Edgar Heilbronner emigrated together with his wife to Switzerland because of the Nazi regimes and studied chemistry in Zurich at the ETH where he also habilitated later on. In 1968 he changed to University of Basel.

Erich Hückel studied physics and mathematics at the University of Göttingen and habilitated at ETH Zurich as well.
More about the award program: *scg.ch/heilbronnerhueckel*

Prof. Majed Chergui, EPFL and Prof. Ruth Signorell, ETHZ elected Fellows of the European Academy of Sciences

The European Academy of Sciences (EURASC) has elected ***Prof. Majed Chergui***, EPFL Lausanne and ***Prof. Ruth Signorell,*** ETH Zurich as new members of its division of Chemistry.

EURASC admits to membership "the best European scientists with a vision for Europe as a whole", aiming to strengthen European science and scientific cooperation to improve European research, technological application, and social development.

The European Academy of Sciences (EURASC) is a non-profit, non-governmental and independent organization "of the most distinguished scholars and engineers performing forefront research and the development of advanced technologies, united by a commitment to promoting science and technology and their essential roles in fostering social and economic development."
Source: *actu.epfl.ch* and *chab.ethz.ch*

JOURNAL NEWS

Helvetica, Volume 104, Issue 3, March 2021

Communications

Photo-induced Dihydroxylation of Alkenes with Diacetyl, Oxygen, and Water
Yusuke Masuda, Daichi Ikeshita, Masahiro Murakami

Full Papers

Probing BRD Inhibition Substituent Effects in Bulky Analogues of (+)-JQ1
Storm Hassell-Hart, Sarah Picaud, Raphael Lengacher, Joshua Csucker, Regis Millet, Gilles Gasser, Roger Alberto, Hannah Maple, Robert Felix, Zbigniew J. Leśnikowski, Helen J. S. Stewart, Timothy J. Chevassut, Simon Morley, Panagis Filippakopoulos, John Spencer

Photoredox Reaction of Naphthoquinone *C*-Glycoside Revisited: Insight into Stereochemical Aspect
Yoshio Ando, Takashi Matsumoto, Keisuke Suzuki

Facile C–F Bond Activation Approach to FAMT-Based Difluoromethyl-BNCT Drug Candidates
Akitaka Yokawa, Miho Hatanaka, Koichi Mikami

Design of Chiral NHC-Carboxylates as Potential Ligands for Pd-Catalyzed Enantioselective C–H Activation
Nadja E. Niggli, Olivier Baudoin

Sequential Two-Fold *Claisen* Rearrangement, One-Pot Ring-Closing Metathesis and Cross-Metathesis as a Route to Substituted Benzo[*b*]azepine-2-one, Benzo[*b*]azepine and Benzo[*b*]oxepine Derivatives
Shyamasankar Mandal, Jeet Banerjee, Sougata Maity, Shital K. Chattopadhyay

onlinelibrary.wiley.com/journal/15222675/

INDUSTRIAL NEWS

Source: *www.chemanager-online.com*

Moderna Expects 2021 Covid Vaccine Sales of $18 Billion

February 26, 2021: For mRNA vaccine maker Moderna, March is gearing up to roar in like a lion, with the tailwind setting the pace for the year ahead. Reporting 2020 financial results on Feb. 25, the US biotech that before last year had not sold a single product said it expects to take in more than $18 billion in revenue from sales of Covid-19 vaccines during 2021. The value of the advance purchase agreements the Maryland-based company has already signed totals $18.4 billion, and it is in talks to deliver more doses over the next 2 years. In addition to supply deals with countries and political blocs such as the US, the EU, Japan, Canada, Korea, the UK and Switzerland, Moderna is in discussions with global organizations promoting fair distribution of coronavirus vaccines worldwide. Pfizer/BioNTech, which manufactures the only other mRNA-based Covid shot on the market, recently said it expects its vaccine to generate sales of $15 billion this year, but the American-German duo expects to seal additional supply arrangements. On Feb. 24, Moderna again raised its low-end target for the number of Covid vaccine doses it expects to produce in 2021 from 600 million to “at least” 700 million, while upholding its high-end estimate of as much as 1 billion. At the end of 2020, CEO Stéphane Bancel had named 500 million doses as this year’s target. In 2022, the US biotech, which has already delivered 60 million doses worldwide – all but 5 million to the US – wants to make 1.4 billion doses,. However, Bancel said the total could depend on the dose needed for booster shots aimed at new variants. The current estimate assumes that boosters will require a dose of 100 µg, but if only 50 µg is needed, more than 2 billion doses could be cranked out. Moderna plans to deliver 100 million doses to the US before the end of next month and another 200 million by the end of July. The company said it is also ramping up exports. It has pledged 310 million doses to the EU during 2021, and the European Commission has an option to take 150 million more in 2022. The UK is taking 17 million doses this year, Japan 50 million and Canada 44 million.
To unclog production bottlenecks hindering scale-up, Moderna is planning to invest both at its own sites and those operated by CDMO suppliers, which to date include industry leaders such as Lonza and Catalent. As one partner found that fill & finish operations were slowing the manufacturing process, technicians are now examining the feasibility of introducing 15-dose vials. Beyond producing its existing vaccine, Moderna is working with the US National Institutes of Health (NIH) to develop vaccines against the South Africa variant and other coronavirus mutants. The company also wants look at the feasibility of making primary vaccines for people who don’t already have antibodies. Pfizer and BioNTech said this week they are studying whether to add

a third shot to their current regimen as a second booster but at the same time are preparing for a potential rapid adaption of the original vaccine to address the new variants.

US Merck to Make Covid Vaccine for J&J

March 3, 2021: Another "Big Pharma" company with a stalled candidate of its own is stepping in to help boost national or regional Covid-19 vaccine supply. US president Joe Biden was due to announce on Mar. 2 that Merck & Co will help make the Johnson & Johnson single-shot vaccine that received an Emergency Use Authorization (EUA) from the US Food and Drug Administration (FDA) on Feb. 27. Brokered by the Biden administration, the deal between the two drugs giants invokes the US Defense Production Act, which will award Merck priority in securing equipment needed to upgrade its plants, including acquiring machinery, bags, tubing and filtration systems. Under the arrangement, Merck will dedicate two of its US plants to manufacturing the vaccine developed by J&J subsidiary Janssen. One of the plants will handle fill & finish, another will make the actual vaccine, which uses an adenovirus vector. The plants are not being identified for security reasons. The US federal government already has a stake in the J&J vaccine, having awarded the healthcare group $2 billion in federal funding for development and clinical trials. In return, healthcare giant is offering the US shots at $10 each. On receiving the EUA last weekend, it said it would deliver 4 million doses immediately and 20 million more by the end of the quarter; however, this is some 17 million doses short of the contracted volume. Up to now, Johnson & Johnson has been working with CDMOs such as Emergent, which ferments large batches of the vaccine in vats at its US plants as well as in the Netherlands and India. Catalent is handling fill & finish in the US. The FDA's green light covered the Dutch output but it was not clear whether earmarking it for the US would trigger in view of Europe's new export authorization mechanism. India thwarted AstraZeneca's plan to supply other geographies from there. While utilizing Merck's large capability could help J&J fulfill its contract with the federal government, some commentators noted that retooling of production facilities coud take several months, by which time demand may have waned. Others recalled, however, that the healthcare group has said that parallel to the current rollout, it would begin work in modifying its technology to take account of virus variants. Merck's move is the first by a US drugmaker to toll manufacture a Covid vaccine for another player. The first to come forward in Europe was France's Sanofi, which agreed to produce for Pfizer and BioNTech at its plant in Frankfurt, Germany, and later said it would turn over a plant in France to produce the J&J vaccine. Bayer has agreed to support German biotech CureVac's Covid shot at one of its German facilities. Swiss pharma giant Novartis said in late January it was exploring whether it could deploy its own manufacturing network to boost European supply, but no details have emerged.

Novavax hopes for EUA in second quarter

US biotech Novavax said this week it hopes to apply to the FDA for an Emergency Use Authorization (EUA) for its Covid-19 vaccine in the second quarter. The UK is thought to be close to approving the candidate, due to a successful Phase 3 trial with 15,000 participants, and reports suggest that the European Medicines Agency may also give the green light soon. The going may be tougher in the company's home market, due to a lack of data from a Phase 3 trial in the US and Mexico that only recently completed enrolling its 30,000 subjects. Novavax CEO Stanley Erck told broadcaster CNBC that the "hope and expectation is that the FDA will agree to review the UK data."

US and UK diverge on Covid vaccine dose spacing

That the FDA would accept UK data in the absence of figures from the US could seem doubtful as the two countries' scientists are already at loggerheads over spacing of coronavirus vaccines. Anthony Fauci, the top US infectious diseases expert, rejects delaying a second injection in order to vaccinate the population more quickly – the exact opposite of what UK experts are recommending and some in the US political sector are urging. Fauci said this week that he and his British counterparts had agreed to disagree about what was the right approach. The US expert cited research showing that a two-dose regimen allows the body to better deal with the more transmissible variants. He added that there is insufficient evidence of the benefit of a single dose and no data showing how long the immunity conferred by one shot would last.

Novartis to Help CureVac Speed Vaccine Rollout

March 5, 2021: A few weeks ago, Novartis said it was exploring ways to participate in the European Covid-19 vaccine manufacturing effort. In the meantime, it has been busy. On Mar. 4 the Swiss drugmaker signed an initial manufacturing agreement with CureVac to boost the German biotech's overall vaccine capacity by 50 million doses in 2021 and 200 million doses in 2022. Previousy, Novartis agreed to help Pfizer and BioNTech with production of their Comirnaty-branded mRNA vaccine. Tübingen-based CureVac aims to produce 300 million doses of its mRNA candidate called CVnCoV during 2021 and up to 600 million doses in 2022 to fulfill European supply commitments. Curevac and Novartis will share technology and jointly carry out test manufacturing runs at Novartis' site in Kundl, Austria, where the Swiss pharma giant will produce mRNA and bulk drug product for the vaccine. Novartis is currently ramping up capacity at the site and hopes to have product ready to ship by summer this year. Novartis "is a pioneer and has decades of experience in pharmaceutical production of proteins and in more recent years of nucleic acids," global head of technical operations Steffen Lang said, commenting on the deal.

The German company has assembled a multi-member team to get its product to market. it recently signed a large-scale production collaboration with Bayer and is teaming up with CDMOs Fareva and Rentschler as well as the CDMO arm of Germany's Wacker Chemie. Its agreememt with the UK's largest drugmaker, Glaxo SmithKline, covers not only CVnCov but also potential variants. in December 2020, CureVac began a phase 2/3 cinical trial, working with a 12µg dose of CVnCoV. Last month, it initiated a rolling submission with the European Medicines Agency (EMA). The biotech hopes to apply for approval in mid-2021.

CO_2-Neutral Chemical Industry by 2050

The Challenge of an Industry Transformation, but a Challenge Worth Taking On.

March 9, 2021: The European Chemical Industry has set out on an ambitious path to become carbon neutral. Germany, as one of the major chemical manufacturing nations, has committed to achieve this goal by 2050. But companies need to translate this industry vision into their specific context. System changes of the scale of CO_2 neutrality for a whole industry sector require a suitable attitude from decision makers — the whole system and not only the elements of the individual company need to be investigated and designed. Major transformations call for long lead times and require consistent and persistent follow-through. The transformation needs to be supported by policy makers and civil society. It is all but clear whether enough value is created to justify the huge investments required and how new value generated is distributed among critical players and investors. We can learn valuable lessons from the current handling of the Corona pandemic as a multi-stakeholder effort and apply these observations to identify success factors for the transformation of the chemical industry to CO_2 neutrality.

What Mindset to Start With?

The German chemical industry intends to be carbon neutral by 2050. Industry-level concepts have been published underlining that the creation of a CO_2-neutral chemical industry would be potentially technically feasible within this space of time. The public debate now focusses more on how the transformation can be successfully designed and realized and does not question the desirability of the goal itself any longer. Companies need to translate this vision into their specific context. But how should they frame the challenge? Should they only think about the decarbonization of their current activities ("renovate the building") or should they think as well about the remodeling of their relations to other stakeholders such as suppliers, customers, energy providers, policy makers and civil society ("rethink the inside and the outside of the building"). We believe that the broader view is necessary. A mindset is needed that focusses on the individual decarbonization strategy and integrates as well developments and activities from society, policy, science and other businesses into the considerations.

This broad, system-oriented mindset is necessary, because too many technological, economic, regulatory and societal variables on the path to CO_2 neutrality still remain unclear.

Technological aspects: To achieve climate neutrality, incremental technical changes are not sufficient, but new technologies are required. But it is difficult to estimate when which technology will actually be available for large-scale industrial use and at what price. For many alternative technologies, large amounts of renewable electricity are a prerequisite. The ecological transformation of the chemical industry, thus, also requires a cross-sectoral approach, which must take into account new national and international infrastructures to be built.

Economic aspects: Many alternative technologies will not be competitive with conventional technologies without a global CO_2 price, due to their higher production costs. For example, it is estimated that the production of green hydrogen by electrolysis will incur additional costs of 56 % to 178 % compared to steam reforming. Studies estimate the investment costs to be acceptable for society as a whole, but a challenge for individual companies. Against the backdrop of uncertain future conditions, companies must now assess whether and how they will change their business model and in which technologies they will invest. They must plan not only how to enter new technologies (entrepreneurial innovation), but also how to exit established technologies (entrepreneurial exnovation).

Regulatory issues: The regulatory framework faces a conflict of objectives: the policy measures chosen should maintain industry competitiveness and prevent industry leakage (carbon leakage). The measure of choice often cited is the introduction of a global carbon price. This would reflect the social costs of CO_2 emissions and provide an incentive to avoid CO_2 emissions. Decisions on the right policy mix have not yet been made.

Social aspects: The majority of the population expects businesses to actively contribute to climate protection. Decisions on new technologies need to take into account public acceptance, especially in the case of CCS (Carbon Capture and Storage), which may be still in doubt. But even then, if the general public basically approves of a technology, problems may occur during local implementation, as can be observed from time to time with the construction of new wind turbines ("not in my backyard" – NIMB – phenomenon). Societal support must therefore be secured time and again at different levels (regional, national, international) and among different target groups (e. g., experts vs. others; young vs. old). The transformation is a complex endeavor with multiple influencing and interrelated factors. Companies may have to take decisions under considerable uncertainty because some technological, economic, regulatory and societal aspects may still be unclear at time of decision. Therefore, companies need to plan their individual transformation pathway as a part of an encompassing industry sector transformation.

Multi-Stakeholder Challenge

Companies in the chemical industry have to see the transformation process not only from a scientific and technical, but also from an economic and social perspective. They need to balance along the way to 2050 their environmental ambition with their economic goals (profitability, competitiveness) and social objectives (jobs). Policy makers focus especially on social goals (jobs in Europe) and intend to design a regulatory framework that supports companies in investing in carbon neutral technologies in Europe. Here, a big challenge is to strike the right balance between preventing risks and accepting and managing those risks that are inherent to fundamental innovations. Science owns the responsibility to advance relevant technologies and to support decision making processes in business, policy and civil society. And civil society — a very diverse group — may want to make sure that the transformation process is transparent and not dominated by lobbyist groups of established industries.

Thus, multiple actors with potentially conflicting goals reflect about the best potential transformation pathway. In a decision-making model, the best option must be selected from a number of alternatives in the light of a set of objectives. With regards to the transformation, conflicts between stakeholders can be related to different elements of the decision model:

Alternatives: What alternatives (technologies, policy instruments) are considered?

Objectives: Which economic, ecological, social objectives are used for the evaluation of alternatives and how are they weighted?

Benefits: Which benefit function is assumed? What environmental effect does a technology have? What are costs and benefits to companies and society?

Timing: At what point in time should which decision be made? Does it make sense to delay decarbonization measures, because better technologies may be available in the future?

It is obvious that these questions are answered very differently by different stakeholders (companies, politicians, society). A multi-stakeholder collaboration is needed to align societal ef-

forts. Companies from the chemical industry need to engage in cross-industry and cross-disciplinary collaboration and be active participants in the societal discourse to make sure that their perspective is sufficiently taken into account by other stakeholders. Managing the related complex and sometimes new interfaces between a wide range of business partners, government authorities, academia, and external stakeholders is a management challenge on its own. These actors practically form a new ecosystem. Processes with the objective to generate value that benefits all stakeholders require all actors playing their role within this ecosystem constructively in a spirit of cooperation and co-ownership. Each party has to identify and assume its role and responsibility so that the whole ecosystem can mobilize and capture the necessary resources to deliver against the common objective of achieving CO_2 neutrality. For managing roles and responsibilities of the four groups of stakeholders, we suggest following the approach of Marc Dreyer et al. to Responsible Innovation — the so called 4-Gears Model (Journal of Sustainability Research 2020;2(4):e200033).

A Vision Put into Action

Converting the chemical industry to CO_2 neutrality asks for major redesigns and changes of major parts of its technologies, processes, assets, and structures. Implementing these transformations requires major investments in the chemical industry. Their execution commands long lead times and requires consistent and persistent follow-through — just imagine the related permits, stakeholder management, construction, logistics issue. Given the size and impact of these changes, more stakeholders from outside the chemical industry (like consumer associations, policy makers, and NGOs) have to be involved earlier and more deeply. This will demand more efforts and resources of all parties involved and potentially may slow down the transformations. Net, the journey to CO_2 neutrality resembles a marathon. But getting to the finish line by 2050 requires sprint speed. The conversion of the chemical industry to CO_2 neutrality poses a challenge only comparable to the evolution of chemistry from a field of research and discovery of individual scientists to the industrial chemistry sector of the 20th century. Looking for other examples, the development of a completely new family of vaccines against Corona with the highest speed possible comes to mind. Considering its success, what learnings may be applied to the transformation to CO_2 neutrality? Here a couple of suggestions Start with crystal-clear objectives shared by all key players involved. For developing a vaccine against a raging pandemic, these goals are obvious. For the less pressing and perceptible need for CO_2 neutrality, the final goal and especially the accepted milestones need to be precisely stated.

- Embrace uncertainty: Accept that success of your activities will depend upon developments of other actors in your ecosystem as well. Start nevertheless.
- Set many horses on the path to the finish line. This can be achieved by forming many and diverse teams utilizing different strategies. Betting on many options will increase chances of success.
- Manage risk proactively. Build resilience into the planning of resources and milestones against unexpected outcomes and put aside additional resources as a contingency reserve.
- Clearly differentiate between the development and the deployment and scale-up phase. These phases pose different challenges, require different resources, and have distinct dynamics.
- Throughout the whole project, manage expectations of key actors, in particular of stakeholders who lack the background for understanding the size of the challenge and its inherent complexity and risk.

The more downstream the projects move, the more difficult and demanding it becomes to adhere to the principles above. With success in sight, many teams are tempted to break away and race to the finish line for claiming victory for them alone — as the European Commission is experiencing in these days of deployment of Corona vaccines.

A Challenge Worth Taking On

Going after the ambitious goal of CO_2-neutrality by the year 2050 will create new growth areas for European and German industry. Exports will receive new stimuli. Indeed, a recent survey by Accenture of European industrial companies estimates the value potential of decarbonization to be €200 billion per year, €40 billion for the chemical industry alone, according to the Accenture survey. Of course, carbon tax and its projected increases play a critical role here. But all in all, European industrial companies underestimate the perceived value of decarbonization among their customers and affected consumers. Decarbonization, thus, can be seen as a significant business opportunity for Europe and in particular Germany. Germany's deep-rooted engineering and science culture may serve to demonstrate thought leadership, and its high technical, engineering, and scientific competence in chemistry and complex production systems ('Verbund' approach) can generate significant societal benefits.

Weylchem Advanced Intermediates Broadens Scope of Market Activities

WeylChem Experts Antti Koivisto and Michael Badine Discuss their Growth Strategy

March 13, 2021: CHEManager Interview with Antti Koivisto and Michael Badine, WeylChem Advanced Intermediates

WeylChem, part of International Chemical Investors Group (ICIG), has extensive experience in the field of chemistry related to advanced intermediates and reagents. The Frankfurt, Germany-based chemical group uses this expertise to develop new molecules for several applications such as agrochemicals, personal care products, pharmaceuticals, polymers, and specialty chemicals. CHEManager asked Antti Koivisto, managing director and vice president of Sales, Marketing & Sales, and Michael Badine, technical marketing manager, both representing the Advanced Intermediates business line of the commercial platform of WeylChem International, to discuss the strategy for their business segment.

CHEManager: WeylChem has consistently developed the Advanced Intermediates business area in recent years. Can you briefly explain the growth steps and the strategy behind them?

Antti Koivisto: True, although WeylChem is well-known of its capabilities, especially in custom manufacturing, we have also been able to gradually strengthen our market position for a number of line products, i.e. advanced intermediates and reagents, the last few years. Aligned with our first two strategic growth pillars, not only have we improved the business relationships with many important global key accounts, but we have also further developed the group's presence in our growth markets in the Americas and Asia.

As a major enabler for the above, we made some changes to the organization. When we centralized our marketing and sales organization under the WeylChem International umbrella in 2019, We also launched a few new roles aiming to further support our strategy of broadening the scope of our market activities and fueling growth. In addition to "traditional" sales and business management roles, we, for example, launched roles focusing more on new business development in markets we had identified as growth regions and/or applications for the AIR business line. In addition, we also launched a new role of technical marketing manager in the sales & marketing team, focusing on combining

market needs with our product development as well as further supporting our application know-how enabling us to serve our customers even better. I am happy that Michael Badine was up for the challenge. This has all been part of a strategy of strengthening new product development and increasing the emphasis on the technical interaction with customers. We have already started to see benefits of these activities.

Advanced Intermediates offers a broad range of molecules for several applications starting from the development up to commercial scale. Which applications are most important for your business today, and do you plan to shift focus in the future?
A. Koivisto: Indeed, the diverse mix of end-market applications is one of the keys to the resilient performance of our business in the last years. We have a strong foundation in market segments such as agro and pharma. These will likely continue being strong going forward while we expect pharma to grow in significance in the future, especially our growing regions of Asia and the Americas and likely a number of value chains coming back and/or further strengthening in Europe. To further support the growth in Pharma, we have plans to provide our customers a more comprehensive, cross-departmental offering. Already today, we have a lot of know-how, ever developing product offering and services in the WeylChem Group. In addition, we also have growing shares in polymers, coatings, and a wide variety of industrial applications. All this diversity and growing presence gives us a good basis for the future.

Are there other changes ahead for the Advanced Intermediates business, perhaps in light of the ongoing Covid-19 pandemic or changing market conditions?
A. Koivisto: There are a lot of exciting changes coming up in the AIR business but not so much related to Covid-19. What makes me especially happy is that these activities will strengthen our third and last growth platform built around new product development.
We are currently investing a lot of efforts in finalizing our update on Aromatic Ring Chlorination and Halex production assets. At the same time, our sales and marketing teams are working together with the customers to finalize plans for delivery and identifying additional global business opportunities.
Michael Badine: Even though the macroeconomic situation is currently difficult, we still believe that this year will be a very exciting one for us based on our growth initiatives. We have also developed new products for pharma and personal care applications at our facility in Lamotte, France. We will be launching the first of these products a little later this year. More information will soon be provided on our communication channels (you can follow us on LinkedIn). We are looking to expand growth opportunities in the USA, and as part of my role I will be contributing to this initiative. We have also launched an initiative to identify new building-blocks we can produce which would capitalize on the strengths of WeylChem and thereby help our customers building their end-products more efficiently. Additional new product development projects together with the customers that may have been put on hold in 2020 due to Covid-19 will resume, giving us also added benefits and possibilities for longer-term growth. Given the likelihood of Covid-19 being brought under greater control by 2022, we want to get ready with the right portfolio for growth already in 2021. We have finalized upgrading our digital platforms. We are in the final stages of having a harmonized group-wide installation of SAP S/4HANA and an improved CRM platform, this is part of our continuing investment in digitization.

One of your latest investments is a production plant for aromatic ring chlorination in the Industrial Park Höchst in Frankfurt. Why is this plant important for your business?
M. Badine: We want to participate in the markets' growing need for halogenated aromatic compounds. These compounds are key building blocks for a range of sophisticated end-products, for example in Pharma and Agrochemical Active Ingredients. Not only can we sell chlorinated products to the market, but we can also convert these via our HALEX plant to fluorinated analogs which are also valuable intermediates. We have extensive halogenation production know-how, which we can now better use to serve the market, opening doors for new applications and customers.

What are the environmental benefits of this investment, and to what extent can this plant improve the offering for your customers?
M. Badine: With this investment WeylChem will optimize its use of resources. For example, 4-chlorobenzotrichloride, a by-product of side-chain chlorination, can be elaborated by aromatic chlorination to 2,3,4,5-tetrachlorobenzoyl chloride in the new plant, and therefore will not need to be disposed of anymore. As all the other by-products are already being used or sold, the side-chain chlorination will then be almost waste-free. Customers will have the peace of mind knowing that they have a competent partner that is producing these complex building blocks sustainably, to the highest environmental standards, with chemistry that is actively contributing to a circular economy.

In general, which trends are driving chemistry innovation in the advanced intermediates segment, and how do you position the business in order to fulfill the requirements and offer value to your customers?
A. Koivisto: Customers are increasingly showing interest in sustainability and materials based on renewable feedstocks. This is a trend we are following, for example with our Velvetol bio-based poly-1,3-propanediol and our bio-based glyoxylic acid product ranges. It goes without saying that lifecycle analysis and carbon footprint analysis are key elements we use to support our customers sustainability goals.
M. Badine: We are striving to be a partner that can understand customers' applications and develop chemistry to suit them. The challenge is for us to "walk in the customers shoes" and understand how our materials are performing in their applications and how we can use our chemistry to solve their problems. We are eager to rise to this challenge by, for example, investing in front-line sales resources with more technical profiles to serve customers even better.

Streamlining the Path to Peptide Market Supply

Expert CMOs Provide High-quality Peptide APIs to Pharmaceutical Innovators

March 16, 2021: Interview with Michael Postlethwaite, Senior Director, Sales & Business Development, European Territories, AmbioPharm

More and more active pharmaceutical ingredients are based on peptides. However, the production of peptide APIs is demanding and requires special know-how and equipment. AmbioPharm specializes in the development and production of peptides and peptide-related products. The US company recently opened a branch in Zurich, Switzerland, to serve European customers from there and to establish and expand partnerships. Michael Postlethwaite, senior director, Sales & Business Development, European Territories, at AmbioPharm, explains market trends and his company's growth strategy, particularly in Europe.

CHEManager: Mr. Postlethwaite, what trends are currently dominating the peptide market?
Michael Postlethwaite: The peptide field is responding strongly to the current Covid crisis, where there is great promise in

peptides being developed for acute Covid symptoms and the longer-term effects of this debilitating condition. Aside from this, cancer and diabetes continue to dominate the clinical and commercial peptide API space. New targets and peptide-based treatments for cancer are being discovered all the time, often based on new approaches and new technologies like toxin conjugates.
It should be noted that one of the oldest peptides on the market, Goserelin, is still hard-hitting and one of the higher grossing peptides on the market. The GLP-1 market is immense, and continuously innovated by dual-agonist molecules, co-formulations for greater efficacy and ever greater improvements in pharmacokinetics brought about by molecular design. The rise of innovative manufacturing processes and in particular oral peptide molecules and formulations such as Semaglutide has energized this segment.

What are the growth drivers on the peptide market?
M. Postlethwaite: The peptide market has shown strong and consistent growth over the previous years, with 8–9 % growth year on year. This is expected to continue as the 'druggability' of peptides improves, as does the discovery of new targets and innovation. Cancer and metabolic conditions will continue to drive growth, but there are many new areas being explored. For example, treatments for Alzheimer's will be a huge driver if successful, as would treatments for pain, maybe using nature's toxins as templates, novel antimicrobials and even cosmetics/cosmeceuticals. AmbioPharm is well positioned with expertise and capacity for all of these.

What has triggered the upswing of peptide chemistry in the pharmaceutical industry?
M. Postlethwaite: Peptide therapeutics have suffered in the past from challenges such as poor pharmacokinetics, high manufacturing costs, parenteral routes of administration, et cetera. However, peptides offer high selectivity, efficacy and are relatively safe and well-tolerated as a drug class. As technology and manufacturing know-how increased across the peptide field, this has led the costs downwards, becoming much more attractive to innovators, and to long-term medicine development. Being a highly specialized area of manufacturing, CMOs have established the expertise, equipment and GMP infrastructure to provide the highest quality peptide API to the pharmaceutical industry.

Where do you see the critical success factors for a CMO to grow in the peptide market?
M. Postlethwaite: There are many factors that contribute to successful growth within the peptide field. From the perspective of a CMO, we must meet the needs of our customers and sponsors. These are often driving the requirements as we move forwards. Innovation is key as technology is constantly changing, as are the challenges brought to us by our customers in terms of chemistry, material requirements and demand, quality, cost and timelines. AmbioPharm has developed expert know-how and capacity to respond to these demands, and provides cutting-edge innovation to manufacturing, while adhering to the strict quality guidelines existing in all the different territories across the globe. In addition, we have built up the largest capacity for GMP manufacture in the peptide field, setting ourselves up for the growth of the peptide market.
Environmental awareness has accelerated the peptide field towards 'green chemistry' approaches to manufacturing. Many sponsors now consider this when innovating a new peptide, but also in the process of selection of a CMO for manufacturing clinically and commercially. AmbioPharm has taken huge steps in this direction to embrace the reduction of solvents, as well as recycling solvents, and to introduce less solvent-intensive approaches to synthetic peptide manufacture. This can also have a benefit of cost reduction once technology and infrastructure are established.

What role does the European market play in the expected growth?
M. Postlethwaite: The largest market for peptide therapeutics has been in North America, however, Europe has always provided a significant and growing market. Increasing prevalence of conditions such as diabetes and cancer within the European territories lends itself to market growth. There are many innovators in the peptide field located within Europe, and investment into development of peptide-based medicines is very strong. In addition, many top-tier academic institutes are located throughout Europe, often in the vicinity of hubs for innovation or academic/industry exchange. Several peptide blockbusters have originated in Europe, e.g. liraglutide, and the peptide pipelines of European companies both large and small are strong.

How do you position AmbioPharm in this market?
M. Postlethwaite: In other territories, especially in the USA where the headquarters are located, AmbioPharm is already strongly established. Our company has already established manufacturing capability and know-how and has devoted much investment into responding to the needs of the peptide market in terms of batch sizes and manufacturing timelines. Our philosophy is that with our unique approach to large-scale manufacturing, we can capture cost-savings and efficiencies during synthesis by leveraging our Shanghai synthesis capacity, located near the points of supply of most starting materials, and follow it up with the large-scale downstream capacities and isolation capabilities in North Augusta, USA. In Europe, the market strongly suggests a need for readily available capacity for large-scale peptide manufacturing, and that is what we are here to deliver. We have capacity from grams to multi-tens of kilo batch sizes to sponsors in all phases of development and commercial supply with minimal lead-times. Process development, analytical validation etc. are also managed with minimal lead-time and highest efficiency, streamlining the path to market supply.

What specific peptide manufacturing capabilities and technologies does AmbioPharm have in the US and in China?
M. Postlethwaite: Since its inception AmbioPharm has had significant growth and boasts world-class facilities in both Shanghai and South Carolina in the USA. The Shanghai facility has recently moved into a dedicated state-of-the-art campus and encompasses all aspects of peptide manufacturing, including large-scale facilities for liquid-phase and solid-phase peptide synthesis, respectively. This is backed up by appropriate downstream facilities, including large-scale HPLC columns, and significant lyophilization capacity. The North Augusta facility in South Carolina has also undergone a large expansion and encompasses the largest scale downstream facilities in the peptide field, including large-scale HPLC purification and scale-appropriate isolation, mainly lyophilization. The new processing buildings in North Augusta also house large-scale development and manufacturing capacity for alternative isolation techniques such as crystallization and precipitation, as well as the infrastructure needed to install a spray-drying suite that is currently in advanced evaluation. Both sites, Shanghai and North Augusta, have the appropriate analytical capabilities needed for GMP API release and are overseen by the same stringent quality system, which is fully FDA compliant.
With these facilities, we are confident that we can supply from milligrams to multi-hundreds of kilograms per year of the best quality R&D and GMP peptide APIs in a cost-effective and timely way.

Clariant and India Glycols Form Renewables JV

March 17, 2021: Clariant and India Glycols Limited (IGL) are forming a joint venture for renewable ethylene oxide (EO) derivatives. To support production, IGL has entered into long-term supply agreement for EO made from bio-ethanol as well as further utilities.

The companies said they expect the JV, to be owned 51% by Clariant International and 49 % by IGL, to become a leading supplier of renewable materials to the rapidly growing consumer care market in India and neighboring countries. "This opportunity to partner with India Glycols is an important step in Clariant's journey to strengthen our core portfolio, while adding value with sustainability. It enhances the capacity of our Industrial and Consumer Specialties business in India and beyond, whereas the access to renewable ethylene oxide broadens our global offering to customers and this makes Clariant a leader in "green" ethylene oxide derivatives", said CEO Conrad Keijzer. Under the terms of the agreement, IGL will contribute its renewable bio-EO derivative business to the JV, which comprises a multipurpose production facility that includes an alkoxylation plant in Kashipur, Uttarakhand. In return, Clariant will contribute its local Industrial and Consumer Specialties business in India, Sri Lanka, Bangladesh and Nepal, as well as an (undisclosed) net cash payment for majority ownership in the venture. Christian Vang, global head of Clariant's business unit Industrial & Consumer Specialties, said the Swiss company sees "opportunities for profitable growth based on strong local organic demand as well as the global megatrend for renewable products."

Pharma Logistics: A Global Perspective

A Closer Look at Pharma Distribution and Logistics in Different Parts of the World

March 18, 2021: Over the past few years, Camelot has been monitoring pharma distribution in different regions of the world. Our insights have been published in various editions of CHEManager International. We covered North- and Latin America, Asia, Africa, and Russia, highlighting real-life project and operational experience, market specifics as well as trends we observed. This article summarizes the key take-aways and provides a global view on trends and perspectives in pharma distribution. One of the most important objectives of pharmaceutical companies is to ensure safe and reliable distribution of drugs to their patients. However, companies are confronted with very diverse maturity levels of the pharmaceutical markets, different growth potential depending on the geographical region, varying logistics infrastructures as well as political and tax regulations. Therefore, different region-specific approaches in pharmaceutical distribution are necessary.

Opportunities and Challenges

The global revenue of pharmaceuticals has seen a steady increase every single year since 2001, accounting for $ 1.25 trillion today. Moreover, a further increase of approximately 4.6 % annually is expected from 2020–2027. Today, North America, with total sales amounting to approximately $523 billion 2019 is the largest single pharma market. However, while mature markets like the US and Europe are saturated with growth mainly depending on new products and services, emerging markets such as Latin America, Asia, and Africa, still offer a high potential for growth with existing portfolios. They are therefore closely monitored by pharma companies. Despite these promising developments, pharma distribution is still a major challenge, involving diverse region-specific market risks and issues. The US market faces high pricing of pharmaceuticals due to missing governmental price controls and limited access to lower priced medicine from abroad. Regions such as Latin America, Africa and Russia still struggle with geopolitical risks, corruption, and illicit medicine. The African continent, moreover, must cope with security issues, unstable political situations and approx. 30 % of counterfeit products. Although these challenges are rather obvious, they indicate that a detailed analysis is inevitable for pharmaceutical companies before entering those markets.

Logistical Requirements and Network Distribution Structures

Alongside general market-specific challenges, additional aspects regarding the successful distribution of drugs to the end customers need to be carefully considered. One of the most important issues is the underlying and often fragmented distribution infrastructure, including the availability of sea- and airports, street networks, and suitable warehouses. This is especially important when considering the long distances that need to be covered even in domestic transportation for eample in the US, China or Russia. Therefore, advanced distribution networks are a prerequisite to offer next-day delivery, which is a common practice in pharmaceutical business. When it comes to the underlying logistical infrastructure and the distribution networks, there are significant differences. While in mature markets like North America or parts of the APAC regions including Japan and Australia, the general distribution infrastructure is highly advanced, in other regions like Africa and APAC including India and Indonesia or even Russia, this is different. Fragmented streets, dilapidated airports or poor warehouse conditions are still present, which often hinders the efficient, safe and timely distribution of pharmaceuticals. Since the main infrastructure in such regions is centered around major cities, this issue is exacerbated in rural areas. The maturity of the North American infrastructure is also reflected in the existing network distribution structures. The market is clearly dominated by three major wholesale distributors — McKesson, Cardinal Health and AmerisourceBergen — which all have immense distribution networks with dozens of warehouses and specialty facilities scattered throughout the country to accommodate nearly every pharmaceutical distribution need and to facilitate next-day delivery for the majority of their customers. From a geographical perspective, the most important pharmaceutical distribution hub is New Jersey. Outside most of North America and Europe, there are several regions that face major issues in their network distribution structures. For instance, the distribution in Africa is often managed by distributors and several subcontractors rather than logistics service providers. As such, pharma companies lose transparency of the processes and mechanisms in the market. Thus, when distributing into Africa, the preference should be to limit the dependency on national or sub-regional distributors. Today, it is often feasible to distribute via regional hubs in South Africa and Dubai making use as well of road transportation for further inland distribution as this has become more viable and secure in recent years. In contrast to Africa, the distribution networks in Latin America are at least well developed around urbanized centers. However, coverage of rural regions remains a challenge, owing to large distances between different centers and difficult topologies. Factoring in the often volatile political situations, we have observed specialized national or local solutions and only limited capabilities and regional networks in Latin America. Thus, it is no surprise that the typical pharma logistics setup requires a local distribution center in almost each individual country combined with higher local inventory levels. Many pharma companies typically distribute their products directly from production to the local stock locations in the country, which leads to a high share of airfreight. Offering many flight connections and stable climate, Panama has gained a lot of traction over the past years as regional hub, and even Montevideo is experiencing growing popularity due to constraints and restrictions in Brazil.

Like in Africa, the distribution in Russia and large parts of Asia is strongly dependent on national and regional distributors,

which compared to logistics service providers, are responsible not only for storage and transport but also for the commercialization of pharmaceuticals. In Russia, for instance, Ruls, Protek and Katren are the largest distributors, which account for more than 50 % of the total Russian market. As a consequence, most of the Russian distributors own pharmacy chains or even have their own local production, which is likely to strengthen the vertical integration in the future.

Recent Developments and Outlook

The future of pharmaceutical logistics is expected to remain dynamic, challenging and loaded with procedural, technological, and operational innovations as logistics processes and structures adapt to growth and increased complexity. The Covid-19 pandemic, for instance, has shown how much the globalized world depends on the supply especially from China and how vulnerable the pharmaceutical supply chains still are. The shutdown of pharmaceutical manufacturing combined with the unavailability of transport capacity, has not only resulted in major disruptions in medical supplies like masks or surgical gloves, but also of basic medicine like headache remedy. Business strategies around risk mitigation and improved supply chain resilience like "near-shoring", "dual sourcing" and "right sizing" of inventory levels are now pursued where feasible and justifiable. Moving forward, it will be key to reduce the complexity as well as increase the flexibility and resilience of the global production and distribution set-up, enhancing the view so far mostly focused on cost and service levels. With those business strategies in mind, pharma companies with digital twins of their production and distribution networks have the advantage of being able to identify and develop suitable alternatives. This can be achieved using agile technical solutions that support the need for continuous analytics of the respective options and their impact even at a tactical level. We strongly believe that such business strategies are a game changer for the pharma industry and that digital twins will be essential in mastering the global production and distribution challenges, breaking down the barrier between network design and supply chain planning.

EU-UK Vaccine Cold War Gets Hotter

March 18, 2021: As the world awaited conclusive words from the European Medicines Agency (EMA) on the safety of the AstraZeneca Covid-19 shot, the vaccine war between the UK and the EU appeared to be intensifying. With manufacturers struggling to meet supply commitments, both sides see their inoculation programs at risk. Up to now, the EU has used its new export control rules mechanism only once, denying AstraZeneca permission to ship 250,000 doses from Italy to Australia, but the European Commission now suggests that the time has come to protect the bloc's dwindling stockpile. Beyond the current export restrictions, one avenue supposedly being opened is invoking Article 122 of the EU treaty to keep vaccines made in member states from being shipped elsewhere. Similar to the US Defense Production Act, this would allow restrictions in case of "severe difficulties in the supply of certain products." In addition to blocking exports, officials could waive patents and intellectual property rights on vaccines, a move sure to be unpopular with manufacturers. Commission president Ursula von der Leyen said 41 million vaccine doses have been exported by manufacturers from EU production sites to 33 countries in six weeks, with more than 10 million of the total going to the UK. This, she said, accounted for more than the total number of shots administered in the ex-member state in February and over a third of the total number of UK vaccinations so far. EU figures show that as of 11 March, 3.9 million doses had been shipped from the EU to Canada, and 3.1 million to Mexico. Around 1 million doses are said to have gone to the US, which has ordered close to 1 billion vaccine doses, including the not yet approved AstraZeneca shot. Some of the doses are being produced in the US by domestic and foreign CDMOs. US president Joe Biden has said he plans to talk with heads of state in other countries about redistributing any surplus doses. Mexico has inquired about taking US doses of AstraZeneca's product that are sitting in storage while the FDA continues to study the company's data. Separately, AstraZeneca is seen as having asked Washington to free up some of the doses for Europe, to no avail. According to UK state broadcaster BBC, the British government has made no official mention of any vaccine exports nor confirmed that any have taken place. It said prime minister Boris Johnson told the House of Commons recently that the country also "has not blocked the export of a single Covid-19 vaccine or vaccine components." While BBC said "publicly available information suggests vaccines are not being exported from the UK," it recalled remarks by AstraZeneca CEO Pascal Soriot that the company's contract with London assumes the government will have the highest priority. The heads of both the US and the UK have stressed that while their first priority is to inoculate their own populations, they are helping to fund the Covax initiative that distributes vaccines to poorer countries. In response to von der Leyen's claims that AstraZeneca has fallen short on its supply commitment to the EU while diverting doses across the channel, health secretary Matt Hancock replied that the UK government had contracted for delivery of the first 100 million doses of the company's shot and that the company's EU production facilities were simply fulfilling contractual responsibilities. The threat of export restrictions could loom over vaccine makers and their CDMO partners more severely in the second quarter when, instead of an expected surplus, country leaders find that their supplies are dwindling. After cutting its commitments to Europe, AstraZeneca could find itself reneging on a promise to the UK even without European export controls, reports suggest. US biotech Moderna is due to deliver "a few hundred thousand" doses in April, BBC said, but the UK could receive 20 % fewer vials than promised as CDMO Lonza tries to scale up production at its Visp site in Switzerland. Elsewhere, Catalent is planning to expand output at its fill & finish plant in Anagni, Italy to produce Johnson & Johnson's single-shot coronavirus vaccine but this is thought unlikely to start up before the fourth quarter. The British vaccine task force has reportedly warned the National Health Service that there could be a "significant reduction" in weekly deliveries from manufacturers starting the week of Mar. 29, due to "reductions in national inbound vaccines supply." The need for second doses is expected to double from the beginning of April, the officials noted. According to an analysis by Financial Times, the UK will need to deliver a minimum of 2 million shots per week throughout April to be able to delivering second doses 11 weeks after the first. The paper said vaccine supplies will increase up to the end of March, when people aged 50 and older are due to receive their first doses. After that, having to delay vaccinations for those younger could upend plans to ease nationwide lockdown restrictions. In contrast to some other countries, the UK is stretching intervals between doses to assure that as many people as possible receive at least one shot. It has even considered delaying the second dose indefinitely, as some studies have shown a single shot to be sufficiently effective to slow infections. Manufacturers of mRNA drugs and virologists, some of them British, have urged that all follow their recommendations of spacing shots two to three weeks apart. Pfizer/BioNTech meanwhile have agree to move up delivery of 10 million dose of their vaccine from the third or fourth quarter to the second quarter to fill the expected supply gaps. The deal must still be approved by member states.

WuXi Buys Pfizer China Plant

March 18, 2021: China's WuXI Biologics has agreed to buy Pfizer's biologics manufacturing facilities in Hangzhou for an undisclosed price. The transaction is expected to close in the first half of 2021. The Shanghai-based company said the acquisition will immediately boost its capacities for commercial drug substance (DS) and drug product (DP) capacities to address surging manufacturing demand. The GMP facilities include two 2,000 liter single-use bioreactors expandable to four 2,000 liter bioreactors, as well as capacities for vial filling and pre-filled syringes. Chris Chen, CEO of WuXi Biologics said DS and DP capacities are in urgent need now globally. The company added that with total estimated capacity for biopharmaceutical production planned in China, Ireland, Germany, the US and Singapore exceeding 300,000 liters after 2023, it will provide its biomanufacturing partners with a robust and premier-quality global supply chain network. The agreement with Pfizer follows purchases earlier this year of plants in Switzerland and Germany. The biologics group is also building a biomanufacturing campus in Worcester, Massachusetts, USA, which is scheduled to go into operation in 2022. In February, WuXi STA agreed to buy Bristol Myers Squibb's manufacturing facility in Couvet, Switzerland, its first facility in Europe. The transaction is expected to close during the second quarter. Earlier, WuXi Biologics agreed to purchase Bayer's biologics substance plant at Wuppertal, Germany, for €150 million. This deal is expected to close in the first half of 2021. In January 2020, the Chinese firm acquired a Bayer plant at Leverkusen, Germany.

Clariant Opens Catalyst R&D Center in China

March 29, 2021: Clariant Catalysts has opened a new R&D center at its One Clariant Campus (OCC) in Shanghai. The research unit is part of the Swiss specialty chemicals producer's new Innovation Center China in the east coast metropolis. The company counts itself among a handful of international players to have built a full-fledged comprehensive catalyst research unit in China. Currently, Clariant has two catalyst production plants in China, in Shanghai and Panjin, with a third under construction in the Dushan Port Economic Development Zone in Jiaxing, Zhejiang province. Announced in September 2020, the latter will produce its Catofin catalyst for propane dehydrogenation (PDH). Full run is expected to be reached in 2022. The business that now belongs to Clariant Catalysts first became active in China nearly 50 years ago, providing full catalytic solutions to Chinese nitrogen fertilizer producers. Kevin Chan, head of Clariant Catalysts China, said the new research center is part of the business's commitment to local innovation and growth in the People's Republic, where it aims to be the leading innovator in catalysis, benefiting China and beyond. With the new catalyst research facility, Clariant's Chinese innovation center now has five technology Platforms, including Chemistry and Materials, Biotechnology, Catalysis, Process Technology and Emerging Technologies. Together with the application platforms of the business units, these will form the basis for market-driven innovation and allow an adequate response to sustainability challenges, the company says. Researchers at the center will collaborate with international academic institutions, including top universities in China that provide advanced research on key technologies and catalysis globally. At the same time, the activities pursued there will be strongly integrated into the Clariant Catalysts network of 10 R&D centers worldwide. The Chinese chemical industry, growing steadily at higher rates than other regions over the past years, now represents the world's largest chemical market, accounting for 46 % of world chemical sales.

Celanese Plans Major Capacity Expansions in Europe, Asia

March 29, 2021: Celanese has announced a slate of plant expansions, new builds and debottlenecking projects across Europe and Asia to beef up its vinyl acetate monomer (VAM) and emulsion polymers output. The US-based chemicals and specialty materials producer said the investments will support significant business growth and strengthen its commitment to being the world's foremost emulsion polymers and VAM producer. At its Nanjing site in China, Celanese will initially increase its VAM capacity by 50,000-60,000 t/y, ramping up eventually to an extra 90,000 t/y. The project, which Celanese said is made possible by its novel, next-generation catalyst and advanced technology package, is expected to lift annual nameplate capacity at the site from around 300,000 t/y to nearly 400,000 t/y. The company did not disclose when the new capacity will be available. An expansion of acetic anhydride at Nanjing is also planned, raising production by 10,000 t/y to approximately 130,000 t/y by 2022. "Celanese is the global leader by volume in the production of vinyl acetate monomer. Based on our capital cost and the efficiency of production, we believe we have the most advanced manufacturing and technical capabilities of any producer," said Florian Kohl, vice president of Celanese's global vinyl chain businesses. Capacity expansions for vinyl acetate ethylene (VAE) emulsions will also be implemented at Nanjing and at Frankfurt, Germany. A new VAE reactor will be added to each site, increasing production at Nanjing by about 65,000 t/y and at Frankfurt by about 45,000 t/y, both due on stream by 2023. The latter project builds on the company's global vinyls expansion program that started in January 2020, encompassing expansions and debottlenecking at Nanjing and Geleen in the Netherlands that Celanese said are "progressing well. To help drive growth of its VAE emulsions business, Celanese is also debottlenecking its European capacity for redispersible polymer powders, gaining approximately another 20,000 t/y of output by 2023. The move follows the acquisition of the Elotex redispersible powders business from Nouryon in April 2020, adding production plants in Frankfurt, Geleen, Moosleerau in Switzerland, as well as in Shanghai, China.