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SWISS CHEMICAL SOCIETY NEWS

EuChemS 2020 General Assembly

The 2020 EuChemS General Assembly meeting took place on Thursday, 24 September 2020 as an online meeting. Representatives from EuChemS Member Societies and Supporting Members attended the first ever EuChemS General Assembly meeting held online, including the voting session.

The meeting was chaired by Pilar Goya, EuChemS President, who presented the highlights of the European Chemical Society in the last twelve months. Her presentation included, amongst other updates on what is new at EuChemS, EuChemS' 50th anniversary initiatives, policy work, projects, communications… Her presentation was followed by updates on the financial matters given by Eckart Rühl, EuChemS Treasurer. Presentations are available for download on the EuChemS website. Another peak of the General Assembly meeting were the elections for three elected members of the EuChemS Executive Board. Congratulations for being elected go to Renáta Orinaková (her first term as an elected member) and to Christophe Copéret and Artur Silva, who were both re-elected for a second term. Their mandate starts on 1 January 2021.

Pilar Goya, who chaired her last General Assembly in her capacity as the President of EuChemS, was warmly thanked by Floris Rutjes, EuChemS Vice-President, and Nineta Hrastelj, EuChemS Secretary-General, for her work during her mandate (2018–2020).

More information: *euchems.eu/2020-general-assembly/*

NCCR Catalysis – First Open Call for Project Funding

NCCR Catalysis is a National Center of Competence in Research (NCCR) developing sustainable chemical processes through catalysis. Its mission is to create new chemical value chains by accelerating the discovery and time-to-market of catalytic processes that enable the flexible production of customizable products from renewable feedstocks. Connecting disciplines, the NCCR brings together research from chemistry, biotechnology, chemical and process engineering, and computer science. Managed jointly by ETH Zurich and EPFL, the current network comprises twenty-nine groups across 8 research institutions in Switzerland: ETH Zurich, EPFL, the Universities of Zurich, Bern, and Basel, the Universities of Applied Sciences of Zurich (ZHAW), and Western Switzerland (HES-SO), and IBM Research.

With the aim of enhancing interconnections among Swiss scientists working in all sub-disciplines of catalytic process design, NCCR Catalysis is now offering project grants for associate members based at Swiss Universities, Swiss Universities of Applied Sciences, and other non-profit research institutes.

If you have a great idea that complements the mission of NCCR Catalysis (see Annex 1 NCCR work packages and aims on the website) please approach the NCCR Catalysis directors (Prof. Javier Pérez-Ramírez, *jpr@chem.ethz.ch* and Prof. Jérôme Waser, *jerome.waser@epfl.ch*) to discuss the potential fit and team up with the appropriate NCCR Catalysis project leader.

Grants will cover a funding envelope by the NCCR up to 250'000 CHF per project. The earliest start date is 1 March 2020 and the latest end date is 31 July 2024 (end of Phase I of the NCCR).

More information: *nccr-catalysis.ch*

Call for EuChemS Awards

European Chemistry Gold Medal

Every two years, the exceptional achievements of one scientist working in the field of chemistry in Europe are rewarded. The winner will receive a gold medal and the opportunity to give the opening lecture at the next European Chemistry (EuChemS) Congress (ECC).

Submissions for the European Chemistry Gold Medal 2022 are to be made through the online form until December 31, 2020.

euchems.eu/awards/european-chemistry-gold-medal/

EuChemS Lecture Award

Each year, the major achievements of one junior scientist working in chemistry in a country with a EuChemS Member Organisation will be rewarded. The winner will receive a statuette and the opportunity to give a lecture at the next European Chemistry Congress (ECC) or at a conference of a EuChemS Professional Network (PN)

Nominations have to be submitted via the webform until December 31, 2020:

euchems.eu/awards/lecture-award/

EuChemS Award for Service

The EuChemS Award for Service acknowledges outstanding commitment with regard to fostering chemistry and molecular sciences in Europe and the goals of EuChemS. In addition to recognized service to EuChemS, this may include activities in governmental, non-governmental or funding organizations, publicity-related activities, etc. Nominations must demonstrate achievements for improved competitiveness, visibility, coherence or structure of chemistry in Europe.

All EuChemS member organizations, Divisions/Working Parties and individuals are invited to submit nominations for the Award. Self-nominations are not accepted. Decisions on making the Award are taken by the EuChemS Executive Board, normally annually.

Nominations have to be submitted via the webform until December 31, 2020:

euchems.eu/awards/award-for-service/

EuChemS Historical Landmarks Award

Chemistry is an integral part of the Cultural Heritage of Europe. However, while there are many touristic signs marking the very place where important intellectual developments or events happened, only a few chemical sites are identified and publicised. Most of the existing programmes are run by national chemical societies, and therefore often overlook the European, and even the international dimension, of the chemical sciences.

For these reasons, EuChemS decided to set up a Historical Landmarks Programme. It will reinforce the sense of belonging of European chemists and remind them that as far as the history of chemistry goes, people and ideas alike have circulated, been shared and shaped through meetings and communication.

Submissions for the EuChemS Historical Landmarks Award 2020 are to be made through the online form until December 31, 2020.

euchems.eu/awards/euchems-historical-landmarks/

Call for Nominations – EFMC 2021 Prizes

To acknowledge and recognise outstanding young medicinal chemists and chemical biologists (≤ 12 years after PhD) working in European industry and academia, EFMC established the "EFMC Prize for a Young Medicinal Chemist in Industry" and the "EFMC Prize for a Young Medicinal Chemist in Academia". The two Prizes are given annually and consist of a diploma, 1.000€ and an invitation for a short presentation at an EFMC Symposium. The Prize winners will be invited to give an oral communication at the XXVI EFMC "International Symposium on Medicinal Chemistry" (EFMC-ISMC 2021), scheduled to be held in Basel, Switzerland on August 29-September 2, 2021. Two runners-up will also be identified and acknowledged.

Deadline for nomination submissions: January 31, 2021.

Source: *https://www.efmc.info*

ILMAC Lausanne: Onsite Event for the First Time after the Corona-Lockdown

Despite the challenges due to the Corona pandemic, the organizers of ILMAC LAUSANNE 2020 can look back on a successful fair. On 7 and 8 October, some 721 professional visitors came to Expo Beaulieu in Lausanne to learn about and discuss innovative products, systems and applications for the entire laboratory value chain in industry and research. ILMAC LAUSANNE was thus the first meeting point for the industry since the corona lockdown in March 2020 and offered to the SCS a platform to organize two Symposia and two workshops onsite.

For two days, 117 leading suppliers from the life sciences sector presented visitors, who came predominantly from Switzerland, with the latest developments and topics relating to laboratory technology, analytics and biotechnology. "While digitalization and automation are continually gaining importance in the life sciences sector, individual solutions are still required to tackle challenges in analytics and diagnosis", explains Michael Bonenberger, Director of ILMAC LAUSANNE. "The high level of interest was reflected by the very high attendance figures for the symposia and workshops", Bonenberger continued. The InnO2 for startups was a new feature this year. A total of ten young entrepreneurs presented their visions for the future viability of the industry.

SCS Symposia in the ILMAC Forum

On October 7 at 10.00h Andrea Sting from Syngenta opened the first onsite event of the SCS since February 2020 and chaired the symposium on the topic "Industry 4.0". Four lectures and a panel discussions provided the lates findings in the field.

Speakers of the Industry 4.0 Symposium: Juan-Luis Naveira, Syngenta, Jean-Luc Robyr, School of Engineering and Architecture of Fribourg, Sebastien Gonzalez, Vifor Pharma, Michel Barthe, Firmenich SA and Mikhaél Minisini, Apptitude SA.

After lunch at 14.00h Hans Peter Lüthi, chair of the event, introduced the first speaker of the afternoon symposium.

Speakers of the Industry 4.0 Symposium: Sebastian Schmitt, Novartis, Teodoro Laino, IBM Research Europe, Yves Lachavanne, Socorex Isba SA, Benedikt Wanner, Synple Chem AG, Björn Christensen, Metrohm International, Jason Meredith, Tecan and Christoph Jansen, Mettler-Toledo.

Source: *scg.ch/ilmac/2020*

A Warm Welcome to Our New Members!

Period: 17.09.–26.10.2020

Jan Bloch, Zurich – Agnes Bombrun, Zurich – Frederic Bourgeois, Basel – Darya Budkina, Geneva – Laia Castilla i Amorós, Sion – Navid Dastbaravardeh, Basel – Nabanita Deb, Basel – Kata Dorbic, Fribourg – Terry Gani, Zurich – Vera Giulimondi, Wallisellen – Neda Iranpour, St. Gallen – Stefan Krawielitzki, Augsburg (D) – Giulietta Minzer, Basel – Dieu Khanh An Nguyen, Geneva – Anne Ries, Zurich – Kye Robinson, Geneve – Lucia Robustini, Bern – Swapnoleena Sen, Zurich – Jansie Smart, Villars-sur-Glane – Zhenchen Tang, Zurich – Pacifique Umubyeyi, Fribourg – Camille Vasseur, St. Louis (FR) – David Vonlanthen, Aarau.

HONORS, AWARDS, APPOINTMENTS

Prof. Michael Graetzel, EPFL, wins the Diels-Planck-Lecture-Award and Medal

Prof. Michael Graetzel from the Ecole Polytechnique Fédérale de Lausanne (EPFL), receives this year's Diels Planck Lecture Award of KiNSIS (Kiel Nano, Surface and Interface Science), a priority research area of Kiel University. The interdisciplinary research association thus honors his outstanding research in the field of photochemistry.

Prof. Graetzel is regarded as the inventor of a new type of efficient solar cell that can be manufactured particularly cost-effectively. This is the seventh time that KiNSIS has honored internationally renowned scientists in the nano and surface sciences for extraordinary research across the boundaries of disciplines. The award ceremony and a ceremonial address took place on September 15, 2020 virtually as part of the online conference "27th Lecture Conference on Photochemistry" of the Gesellschaft Deutscher Chemiker (GDCh).

The functionality of the so-called "Graetzel cell" mimics the natural process of photosynthesis in plants. The role of the natural dye chlorophyll is taken over by sensitizing artificial dye molecules: they transfer electrons to a network of nanoparticles of semiconductor oxides, which generates electrical energy. In contrast to conventional solar cells made of highly pure and expensive silicon, relatively inexpensive materials are used for the Graetzel cell. In their further development, the organic dyes have now been replaced by the material perovskite and the liquid electrolyte by organic semiconductors. Today, the so-called perovskite solar cells achieve an efficiency of more than 25% in converting sunlight into electricity and are thus characterized by both efficiency and stability.
Source: *actu.epfl.ch/news*

Prof. Christophe Copéret, ETHZ, re-elected to the EuChemS Executive Board

Prof. Christophe Copéret, ETH Zurich was re-elected to the EuChemS Executive Board during the 2020 General Assembly that was held online on 24 September. His second-term starts on 1 January 2021. Prof. Copéret is a member of the Board of Directors of the Swiss Chemical Society since 2012 and is also president of the Platform Chemistry of the Academies of Natural Sciences (SCNAT). The EuChemS mandate allows him to bring in important topics for Switzerland on the European level and strenghten the relationship of Swiss researchers to their European colleagues.
Source: *chab.ethz.ch / scg.ch / euchems.info*

JOURNAL NEWS

Prof. Jeroen van Bokhoven, ETHZ / PSI, appointed Senior Editor of the Journal of Physical Chemistry

Starting October 15, 2020, Prof. Jeroen van Bokhoven (ICB) has joined the Editorial Board of Journal of Physical Chemistry C (JPC) as a Senior Editor. The focal point of his appointment is catalysis and its physical chemistry. JPC, published by the American Chemical Society, has a more than 100-year tradition in publishing high-quality research in the field of physical chemistry.
Source: *chab.ethz.ch*

Helvetica, Volume 103, Issue 10, October 2020

Editorial
François Diederich (1952–2020) in Memoriam
Jeffrey W. Bode, Christophe Copéret, Richard J. Smith

Communications
Trifluoromethylated 3-(Pyrazol-1-yl) propanamide (PPA) Ligands
Phil Liebing, Frank T. Edelmann

Full Papers
CO_2 to CO: Photo- and Electrocatalytic Conversion Based on Re(I) Bis-Arene Frameworks: Synergisms Between Catalytic Subunits
Daniel Hernández-Valdés, Ricardo Fernández-Terán, Benjamin Probst, Bernhard Spingler, Roger Alberto

Synthesis and Oxidative Stability of an Anionic Perfluoroethyl Cobalt(III) Complex
Scott T. Shreiber, David A. Vicic

onlinelibrary.wiley.com/journal/15222675/

INDUSTRIAL NEWS

Source: *www.chemanager-online.com*

Siegfried to Buy Two Novartis Sites in Spain

October 2, 2020: Swiss CDMO Siegfried has signed a binding agreement with compatriot Novartis to acquire two pharmaceutical manufacturing sites in Spain. The Zofingen-based group said the buy will "significantly enhance" its global production network in terms of capacity and technological capabilities and will allow it to reach a critical size in finished dosage forms, thus creating further potential for profitable growth. CEO Wolfgang Wienand said the acquisition, expected to close at the end of 2020, subject to customary closing conditions, "is perfectly in line with our corporate strategy EVOLVE and represents another major step towards our vision to create one of the most competitive integrated global networks in the CDMO industry." Both of the sites to be added are located in Barcelona province and employ altogether 1,000 people specialized in the manufacture of ophthalmic steriles (El Masnou) as well as oral solid dosage

(OSD) forms and capsules used in inhalation devices (Barberà del Vallès). The El Masnou site is regarded as a leading player in its markets. Siegfried said this business is complementary to its existing capacity and capabilities for ophthalmology products and sterile filling at its sites in Irvine, California, USA, and Hameln, Germany. Taking over the Barberà del Vallès facilities, the CDMO said, will "significantly strengthen" its existing OSD capabilities in Malta by adding large-scale capacity and capabilities to manufacture highly potent drug products as well as enhancing the portfolio with attractive inhalation Starting in 2021, Siegfried intends to transform the two currently sites that are currently captive suppliers of Novartis into competitive customer-facing CDMO platforms offering their services to various clients worldwide. "This transformation," it said, "will include an operational efficiency review as well an investment in development capacity and capabilities to create a center of excellence for the sites' current technology portfolio in the Barcelona region. With the change, the group said it will be able to offer existing and new customers an even broader range of development services and enhanced production capacity to take on new business. As part of the transaction, Novartis and Siegfried have agreed to cooperate closely during the carve-out and post-merger integration process and make multi-year purchase commitments for the manufacturing and supply of important Novartis products, with Siegfried being awarded preferred supplier status. Under a manufacturing and supply agreement, Novartis will procure sizable volumes of products from both of the sites newly owned by Siegried. Based on the available capacity and capabilities, the CDMO said it will be able to service both Novartis and new clients as part of a broad portfolio of customers and products. From 2021, Siegfried expects annual sales to exceed 1 billion Swiss francs. It plans to finance the acquisition through its existing credit facilities. Post-closing, management said it intends to issue hybrid convertible bonds for refinancing. An equity increase is not on the agenda.

Roche Acquires Irish Biotech Inflazome

October 5, 2020: Swiss drugmaker Roche has acquired Irish biotech Inflazome for €380 million, said to be one of the largest deals in Irish biotech history. Headquartered in Dublin, Inflazome regards itself as a leader in the development of inflammasome inhibitors. The deal gives Roche full rights to Inflazome's entire portfolio of clinical and preclinical small molecule NLRP3 inhibitors. These are used to treat a large number of diseases ranging from Parkinson's and Alzheimer's to asthma, inflammatory bowel disease, chronic kidney disease, cardiovascular disease, arthritis and the liver disease nonalcoholic steatohepatitis (NASH). Inflazome explained that activated NLRP3 acts as a "danger sensor" in the body to release the pro-inflammatory cytokines IL-1β, IL-18 and induce uncontrolled, lytic cell death (pyroptosis), which leads to chronic inflammation. The company's lead molecules have successfully completed Phase 1 clinical trials, as well as several high potential earlier-stage programs. Roche intends to further develop NLRP3 inhibitors across a wide variety of indications with high unmet medical need. Matt Cooper, Inflazome's CEO, said that as part of Roche, Inflazome's "pioneering molecules are well positioned to be developed quickly and effectively so they can help patients suffering from debilitating diseases." Inflazome was founded in 2016 by Cooper, then a medical researcher at the University of Queensland in Australia, and Luke O'Neill, a medical researcher at Trinity College Dublin.

Expert Interview: Michael Quirmbach, CEO & President CordenPharma. The Coronavirus Crisis: Challenges and Opportunities for CMOs, CDMOs and CROs

October 16, 2020: So far, the pharmaceutical industry — including CMOs/CDMOs and CROs — has responded well to the outbreak of the Covid-19 pandemic. However, the coronavirus crisis has uncovered problems that have been smoldering beneath the surface and need to be addressed. That supply chains are vulnerable to disruption when major development, production and transportation hubs are blocked or shut down has become painfully obvious. The ongoing pandemic is putting pharmaceutical R&D strategies to the test and also challenging manufacturing planning and supply chain management. Particularly in this industry segment, the supply chain is global, complex and interconnected. Each link must be strong enough to ensure that the road from lab to final drug product is as smooth as possible, even under the most difficult circumstances. In addition to the pandemic, the growing threat of a no-deal-Brexit amid old and new trade conflicts and increasing protectionism, is putting even more stress on companies operating in the pharma sector. In cooperation with Wombat Capital, a cross-border investment bank, CHEManager asked executives and experts of CMOs, CDMOs and CROs operating in the pharmaceutical sector to share their opinion on current challenges for their industry and how these challenges may influence changes in their market.

What in your opinion and from your perspective are the main impacts of the coronavirus pandemic on the drug supply chains?

Michael Quirmbach: The Covid-19 pandemic showed the fragility of global pharma supply chains, resulting in companies and governments having to now carefully reconsider and rethink their current strategy. Thus, while the past focus was mainly on cost reduction, the future focus will be a much stronger shift towards security of supply and the resiliency of the supply chain. Although the term resilience of the supply chain is becoming a new buzz-phrase which is rather vague and open to interpretation, it generally means that suppliers will face more scrutiny and the need for a deeper understanding about the sourcing behind their partners and suppliers. For example, companies are sourcing raw materials and key starting materials from suppliers who might source materials or components from others, who in turn might source from others, and so on. When one part of this network is exposed to risk, all parts are vulnerable to disruption. Therefore, the growing complexity is driving a need for a much more thorough understanding of how the supply chains have been designed, the cornerstones of their foundation, and how efficiently they have been constructed to manage risk.

Many Western CDMOs have already shifted operations back to the USA and Europe as intensive business activity in China has driven up labor costs. In addition, national policies, trade-related developments, such as Brexit and the US-China dispute, and impacts of pandemics are likely to require repatriation of at least part of the supply chain in many countries. Could CMOs/CDMOs be beneficiaries of restructured supply chains?

M. Quirmbach: The answer is certainly yes, and it is expected that pharma & biotech companies will put significantly more emphasize on this topic both in the short and long-term. In particular CDMOs who possess assets in key geographic locations in the Western hemisphere should benefit. The US government has already called for the reshoring of global supply chains, or even decoupling from China. These efforts are not only limited to the US – e.g. France has called for greater industrial sovereignty of Europe in light of economic vulnerabilities created by the pandemic. Other recent examples worth mentioning here is the partnership between Sandoz and the Austrian government

to boost integrated antibiotics production in Europe. As part of the joint plan, the Austrian government would provide or coordinate public funding worth about €50 million towards the total investment, with expectations that this initiative will enhance the European-based manufacturing of essential medicines. We can expect to see more of these examples in the coming month within Europe and the US.

What do you think the impact of the repatriation of the drug supply chain will have on the M&A activity in the CMO/CDMO industry? Do you think that this would create an impact on valuations?

M. Quirmbach: As the consolidation of the highly fragmented CDMO industry continues through M&A activities, the repatriation of the supply chain will, for sure, additionally contribute to it with an even stronger emphasis on companies with assets & technology based in the US and EU. Companies with the right geographical and technological footprint will therefore have higher valuations compared to those prior to the Covid-19 pandemic.

Has the inability to hold face-to-face meetings with prospective clients and conduct client visits to sites affected your new business development since the outbreak of the coronavirus pandemic?

M. Quirmbach: Although we continue to see a good amount of new inquiries and projects coming our way, many of them stem from discussions we initiated prior to the pandemic or are based on our strong existing customer base including major strategic global accounts. To approach new customers today is certainly more difficult for our sales team, in large part due to the inability to hold face-to-face meetings. To circumvent this, we have created a network-wide digital initiative to bring customers closer to our facilities through virtual site tours and videos.

EU regulatory authorities and the FDA have issued guidance on conducting clinical trials during the Covid-19 outbreak. Have you as a CMO/CDMO been affected by these changes?

M. Quirmbach: We have not been directly impacted by this guideline, but some of our customers have experienced delays in starting their clinical trials, or even have made the conscious decision to postpone them, which resulted in the cancellation of a manufacturing slot.

The race is on to develop treatments and vaccines against Covid-19, and so is the need to assure supply of these potential drugs and vaccines. Pharma companies are leveraging their internal manufacturing networks but are also partnering with CMOs/CDMOs. What supply and manufacturing strategies/alliances are in play?

M. Quirmbach: There are a number of publicly announced collaborations in place, but one could assume that many more have already been initiated or are currently being negotiated that have not been announced yet, considering the vast pipeline of various vaccines across the unprecedented efforts by the pharma industry. A few known collaborations are summarized:

Moderna announced various collaborations with CDMOs in support of its vaccine candidate, mRNA-1273, which has progressed to Phase III clinical trials. Thus, Moderna is building up drug substance manufacturing capacity through its CDMO partner Lonza, which is adding manufacturing lines in New Hampshire and Visp, Switzerland. Because the mRNA is encapsulated in lipid nanoparticles, it requires specific proprietary lipid excipients, which are being manufactured by CordenPharma through our manufacturing network in Switzerland, France and the US. Other collaborations for the drug product manufacturing were signed with Catalent and Rovi Pharma Industrial Services.

Novavax announced a manufacturing partnership with CDMO Fujifilm Diosynth Biotechnologies (FDB) to make the bulk drug substance for NVX-CoV2373 at its site in Morrisville, NC, which began production in July. AGC Biologics was contracted to manufacture the Matrix-M Adjuvant to expand Novavax' capacity, while the PolyPeptide Group (PPL) is supporting the manufacturing of critical intermediates for the Matrix-M Adjuvant.

Emergent BioSolutions is supporting Astra Zeneca in the commercial drug substance manufacturing of the adenovirus vector-based vaccine candidate, AZD1222, which was co-invented by the University of Oxford and its spin-out company, Vaccitech, and licensed by AstraZeneca. Also Emergent announced a collaboration with Janssen Pharmaceuticals for large-scale drug substance manufacturing for Johnson & Johnson's investigational SARS-CoV-2 vaccine, Ad26.COV2-S, recombinant based on the AdVac technology. Emergent will provide CDMO services to produce the drug substance on a large-scale over the next five years.

The CMO/CDMO industry has managed to support efforts to develop vaccines and therapeutics for Covid-19 despite already being at a high level of utilization. What made that possible?

M. Quirmbach: The future production of multi-million vaccine doses will require manufacturing spread across multiple sites, where seamless network integration is key for innovators and CDMOs working very closely together to meet the anticipated demand. The benefit and success of the major CDMO partners to adapt to these changing market environments will rely on the ability to react fast, provide flexibility and quickly increase capacity by ramping up production or even constructing new facilities / lines. This strong collaboration among the innovators and suppliers exemplifies what is achievable, if all parties are working together towards one common goal!

"Emerging", "virtual" and other small (bio)pharmaceutical companies are driving the discovery and development of new drugs but are mostly dependent on the availability of financing – which could become more restricted due to the economic downturn cause by the economic and epidemiologic disruptions to the global economy. As emerging biopharma companies are important customers of CMOs/CDMOs, how is this going to affect your business?

M. Quirmbach: This could potentially impact us during 2021, especially in terms of new business, as emerging biotechs and virtual companies will require re-financing, but were not able to progress their programs during the last year due to delayed clinical trials.

For the biopharma CMO/CDMO industry, the pandemic crisis has created great opportunities. What is your opinion on whether and to what degree the CDMO industry will enjoy long-term benefits from its role in tackling the current crisis?

M. Quirmbach: The CDMO industry will continue to benefit from the crisis – short and long-term – as pharma & biotech companies engage in the ongoing search for agile, reliable and competent partners to meet the increasing demand for drug substance, drug product and ideally, integrated supply services. Also, as the NCEs are showing ever-increasing complexity, this will require various technologies, leading to greater and greater requirements to outsource service providers for the most optimal use of pharma's know-how, resources and infrastructure.

Your broader corporate strategy is to offer fully integrated supply (APIs, drug products, packaging, and logistics), including development and manufacturing of highly potent and oncology products. How do you implement this strategy?

M. Quirmbach: CordenPharma's company strategy is guided by our four distinctive technology platforms and driven by our customers' requirements. We keep a close eye on any potential gaps in our ambitious strategy which could be turned into benefits, all aimed at our mission to be a leading CDMO partner with fully integrated end-to-end services. Over the last few years, we have expanded our capabilities by both heavily investing in technology, development and manufacturing capacity expansion, as well as through focused acquisitions. As it relates to the latter, we carefully analyze the assets with a clear focus and ask ourselves if this adds value to our service offering, and ultimately to our customers. All this has been achieved through the strong commitments by our shareholder International Chemical Investors Group (ICIG).

Expert Interview: Matthew Moorcroft, Lonza. The Coronavirus Crisis: Challenges and Opportunities for CMOs, CDMOs and CROs

October 17, 2020: So far, the pharmaceutical industry — including CMOs/CDMOs and CROs — has responded well to the outbreak of the Covid-19 pandemic. However, the coronavirus crisis has uncovered problems that have been smoldering beneath the surface and need to be addressed. That supply chains are vulnerable to disruption when major development, production and transportation hubs are blocked or shut down has become painfully obvious. The ongoing pandemic is putting pharmaceutical R&D strategies to the test and also challenging manufacturing planning and supply chain management. Particularly in this industry segment, the supply chain is global, complex and interconnected. Each link must be strong enough to ensure that the road from lab to final drug product is as smooth as possible, even under the most difficult circumstances. In addition to the pandemic, the growing threat of a no-deal-Brexit amid old and new trade conflicts and increasing protectionism, is putting even more stress on companies operating in the pharma sector. In cooperation with Wombat Capital, a cross-border investment bank, CHEManager asked executives and experts of CMOs, CDMOs and CROs operating in the pharmaceutical sector to share their opinion on current challenges for their industry and how these challenges may influence changes in their market.

What in your opinion and from your perspective are the main impacts of the coronavirus pandemic on the drug supply chains?

Matthew Moorcroft: I think in contrast to other industries, the pharmaceutical and CDMO industry has fared well overall during the turbulence of the coronavirus pandemic. The notion of healthcare and medicine has been once again thrust in the spotlight. As we can see, pharmaceutical companies have responded in droves to throw the kitchen sink at the problem – with over 500+ drugs now being tested in clinical trials. The industry has responded with herculean efforts to keep employees safe and keep manufacturing plants open and concerns over drug manufacturing and supply have fortunately not materialized to the extent people were forecasting. Pharmaceutical companies have likewise turned to their CDMO partners to help balance the load and support the explosion of Covid-19 vaccines and treatments in their pipelines and, in turn, CDMOs have done their part to respond. Lonza is an example of a CDMO that has received over a hundred enquiries and we are focusing on a number of projects for customers developing therapies and vaccines

Many Western CDMOs have already shifted operations back to the USA and Europe as intensive business activity in China has driven up labor costs. In addition, national policies, trade-related developments such as Brexit and the US-China dispute, and impacts of pandemics are likely to require repatriation of at least part of the supply chain in many countries. Could CMOs/CDMOs be beneficiaries of restructured supply chains?

M. Moorcroft: Reshoring and repatriation of outsourcing activity to the US and Europe is not a new concept and over the last decade CDMOs with western assets have long been net beneficiaries to capture the changing buying behavior of pharmaceutical customers. CDMOs with a proven track record of quality systems and manufacturing excellence have been in the best position to capture the bulk of these trends. The recent pandemic illustrates the need for derisked supply chains that include assets across different geographies working to the highest global standards.

What do you think the impact of the repatriation of the drug supply chain will have on the M&A activity in the CMO/CDMO industry? Do you think that this would create an impact on valuations?

M. Moorcroft: It is fair to say that supply chains won't be transformed overnight and relocating projects can take many months, even years, so there will be a slow and gradual cadence to any change. As more drug substance and drug product business repatriates to the west, there will naturally be more opportunities for US and European CDMOs to fill existing and new capacity. Small molecule CDMOs with idle capacity will be able to take an opportunity to fill empty slots and update their order books, and biologics manufacturers will be in a strong position to prioritize projects to maximize their product mix. Repatriation opportunities will need to be balanced against the influx of new molecules being tested in Covid-19 therapies so capacity planning will become a finely balanced affair.

EU regulatory authorities and the FDA have issued guidance on conducting clinical trials during the Covid-19 outbreak. Have you as a CMO/CDMO been affected by these changes?

M. Moorcroft: It is widely reported that business has continued for many CDMOs despite the headwinds of being able to hold face-to-face customer meetings, host site visits or attend the hundreds of cancelled trade shows, which would have taken place in the absence of travel restrictions. Some pharmaceutical clients across the industry have reported project delays due to clinical progress whilst equal numbers of others have been keen to put pen to paper on long-negotiated manufacturing slots with preferred suppliers to ensure supply chains are not impacted. In light of challenging in person opportunities, most CDMOs will have had the foresight to turn to the variety of digital means to continue business development activities with use of virtual meeting software or the use of virtual tours to give site introductions.

The race is on to develop treatments and vaccines against Covid-19, and so is the need to assure supply of these potential drugs and vaccines. Pharma companies are leveraging their internal manufacturing networks but also partnering with CMOs/CDMOs. What supply and manufacturing strategies/alliances are in play?

M. Moorcroft: Pharmaceutical companies will have an existing network of CDMOs and many will already have a preferred supplier list and will be strategically placing projects with those they know have the capacity and technical capability to deliver within the tight timelines required. Others will use this as a remit to tender projects to CDMOs which are outside their network as a means to alleviate capacity issues – either internally or with existing suppliers.

The CMO/CDMO industry has managed to support efforts to develop vaccines and therapeutics for Covid-19 despite already being at a high level of utilization. What made that possible?

M. Moorcroft: More than ever before we are seeing diversification in the modalities under investigation for vaccines and therapies. For example, two of the six vaccine candidates in phase 3 trials are mRNA vaccines. Although there are clearly challenges in scaling new technology like mRNA, the footprint required is considerably smaller than more traditional vaccines. The flexibility offered by a CDMO is key at this time and is something we have been working to develop at Lonza. In 2018 we invested in Ibex Solutions at our site in Visp, Switzerland. These are pre-built manufacturing shells that can be fitted out rapidly with different technologies and scales and hooked up to existing services. This cuts the time needed for new asset builds and is vital when companies need to make decisions on their manufacturing capacity even at very early stages. As we've seen during the pandemic, the timelines for trials are moving at an unprecedented speed and bringing on new capacity needs to keep pace. For example, we are currently building three production lines for Moderna as part of Ibex Solutions in Visp, Switzerland and we expect to start operations before the end of 2020.

"Emerging", "virtual" and other small (bio)pharmaceutical companies are driving the discovery and development of new drugs but are mostly dependent on the availability of financing – which could become more restricted due to the economic downturn cause by the economic and epidemiologic disruptions to the global economy. As emerging biopharma companies are important customers of CMOs/CDMOs, how is this going to affect your business?

M. Moorcroft: Despite the downturn in many industries, most indicators point to a strong funding environment for small and emerging pharmaceutical companies during H1. Investor money has migrated towards the pharmaceutical industry that could offer new drugs to combat the pandemic and there has been an uptick in 2020 funding activity compared to last year – with some financial institutions being more bullish and reporting financing levels at all-time highs. This funding environment is made more remarkable given it comes on the back of a period of which has seen strongest levels of investor confidence in recent years.

For the biopharma CMO/CDMO industry, the pandemic crisis has created great opportunities. What is your opinion on whether and to what degree the CDMO industry will enjoy long-term benefits from its role in tackling the current crisis?

M. Moorcroft: The pharmaceutical industry as a whole has experienced unprecedented levels of media attention and public interest since the start of 2020 as governments and healthcare institutions demand new medicines and therapies to help fight the effects and the spread of the Covid-19 virus. Many pharmaceutical companies have expanded the number of drugs in their pipelines as well as forming new alliances with suppliers in order to meet the overwhelming demand from patients for novel, effective and safe therapies. Whilst the pharmaceutical industry has its own captive manufacturing, much of this unforecasted demand is actually turning to CDMOs who are being tasked to supply clinical material and launch-ready volumes to meet the aggressive timelines and demands. Many of these relationships with be existing through strategic supplier networks or established supplier lists, but some will be opportunities for pharmaceutical companies to explore new CDMO partners. For contract manufacturers as a whole, the industry will see this as yet another opportunity to demonstrate their ability to work on complex projects in tight timelines – building continued awareness for not only the biggest brands in the CDMO industry but an equal opportunity for emerging and niche suppliers as the rising tide lifts all boats.

Roche and Dyno in Gene Therapy Pact

October 23, 2020: Swiss pharma Roche has agreed to collaborate with US biotech Dyno Therapeutics to develop adeno-associated virus (AAV) vectors for gene therapies for central nervous system (CNS) disease and liver-directed therapies. Dyno will apply its proprietary CapsidMap platform to identify and design novel AAV capsids with improved functional properties. The Massachusetts-based firm said CapsidMap uses artificial intelligence (AI) to rapidly discover and systematically optimize AAV capsids (the cell-targeting protein shell of viral vectors), significantly outperforming current approaches for in vivo gene delivery and expanding the range of diseases treatable with gene therapies. Roche and its subsidiary Spark Therapeutics will be responsible for preclinical, clinical and commercialization activities for gene therapy product candidates using the novel capsids. Under the terms of the transaction, Roche will pay Dyno an undisclosed upfront sum, as well as additional payments during the research phase. Dyno is also eligible to receive clinical and sales milestone payments and royalties for any resulting products. The total potential value of future milestone payments could exceed $1.8 billion. "Dyno's innovative AI-powered approach to designing optimized AAV vectors will further complement and build on our progress in gene therapy," said James Sabry, head of Roche Pharma Partnering. Eric Kelsic, Dyno's CEO and co-founder, added that the partnership represents the company's largest collaboration to date, noting that continuing interest by leading gene therapy developers is accelerating its growth plans and positive impact on patients.