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PM Calls for 'ideate in India, innovate in India and make in India for the world'



New Delhi, India: Prime Minister Shri
Narendra Modi unveiled the 'Global
Innovation Summit-2021', organized by
Indian Pharmaceutical Alliance) and its
partners to bring together world leaders
from across different stakeholder groups
including government, industry, academia,
investors, and researchers to discuss and
strategize priorities to foster a thriving
innovation ecosystem that will enable
Indian pharmaceutical industry to further
consolidate its position as a global leader
and become an innovation hub for the
world.

Shri Narendra Modi congratulated the IPA for organising the summit and said, "I invite everyone to ideate in India, innovate in India and make in India and make for

the world. Discover your true strength and serve the world. We have the talent, resources and the ecosystem required for innovation and enterprise. Our rapid strides, our speed of innovation and the scale of our achievements in the pharma sector have been noticed by the world. This is the best time to move forward and scale new heights. I assure global and domestic industry leaders and stakeholders that India is committed to enhance the ecosystem for innovation. May this summit serve as the flagship event to strengthen the Indian pharmaceutical industry's position in R&D and innovation."

Union Minister for Health & Family Welfare and Minister of Chemicals and Fertilizers. Dr. Mansukh Mandaviya expressing his happiness at joining the first session of the Global Innovation Summit said, "Under the able leadership of our Honourable prime minister, Sh. Narendra Modi ji, India is focusing on the complete cycle of pharmaceutical. Starting with innovation, R&D to finished products, our prime minister has given the vision of Atma Nirbhar Bharat i.e.; self-reliant India. Our research policy on health is also in the advanced stage which will provide the right platform for innovation. I urge the world to join the journey of discover in India, make in India and invest in India. I am very confident that India will achieve a very ambitious target of 130 US billion-dollar pharma industry by 2030."





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Biocon Biologics and Viatris Announce Launch of Interchangeable SEMGLEE®



Shreehas Tambe, Deputy CEO, Biocon Biologics

Bengaluru, India and Pittsburgh: Biocon Biologics Ltd., a subsidiary of Biocon Ltd., and Viatris Inc. announced the U.S. launch of interchangeable biosimilars SEMGLEE® (insulin glargine-yfgn) injection, a branded product, and Insulin Glargine (insulin glargine-yfgn) injection, an unbranded product, to help control high blood sugar in adult and pediatric patients with type 1 diabetes and adults with type 2 diabetes. Both biosimilar products are available in vial and prefilled pen presentations and are interchangeable for the reference brand, LANTUS® (insulin glargine), allowing for substitution at the pharmacy counter.

Shreehas Tambe, Deputy CEO, Biocon Biologics said: "At Biocon Biologics we are committed to expanding access to high-quality, affordable biologics to patients worldwide. The launch of our interchangeable biosimilar insulin glargine in the U.S. by our partner Viatris is in line with our aspiration to provide our biosimilar insulins to 'one in five' insulin dependent people with diabetes, globally. This is indeed a landmark event and along with the recent formulary listings, we believe it will allow us to improve accessibility, availability and adoption of biosimilars in the U.S. for the benefit of patients and the overall healthcare system."

Viatris Head of North America Jose Cotarelo said: "Viatris has a long-standing commitment to improving patient access to sustainable, quality and more affordable healthcare. We are extremely proud to stay true to that promise by bringing to millions of people with diabetes these interchangeable insulin biosimilar treatment options. We are pleased to also offer a broad range of options to help patients, which are intended to maximize access to these important medicines, regardless of financial circumstances, insurance or channel." SEMGLEE (insulin glargine-yfgn) and Insulin Glargine (insulin glargine-yfgn), co-developed by Biocon Biologics and Viatris, are now available in the U.S. market. The currently marketed non-interchangeable SEMGLEE (insulin glargine) is anticipated to be phased out by the end of the 2021 calendar year.





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SOTIO Expands its Antibody-Drug Conjugate Pipeline with Exclusive Collaboration



Dr. Yong-Zu Kim, CEO and President, LCB

PRAGUE, Czech Republic: SOTIO

Biotech, a clinical stage immuno-oncology company owned by PPF Group announced an exclusive, target-specific license and option agreement with LegoChem Biosciences Inc a biotechnology company focused on developing its clinical-stage platform technology enabling antibodydrug conjugates (ADCs) with an excellent therapeutic index. SOTIO will obtain rights to deploy LCB's ADC technology for up to five therapeutic programs targeting distinct tumor-associated antigens.

The deal enables SOTIO to combine its proprietary antibodies with LCB's ADC technology platform in order to deliver novel therapeutics for the treatment of solid tumors and includes LCB's proprietary

conjugation technology ConjuAll™ and potent linker-payload platform including multiple different payloads. Under the terms of the multi-target agreement, LCB is eligible to receive upfront and potential milestone payments worth up to \$1027.5 million, payable based on certain developments and regulatory achievements, plus royalties on net sales. The deal includes upfront and near-term milestones worth up to \$29.5 million, subject to exercise of the options and achievement of success-based milestones. No further financial details are disclosed. "At SOTIO we are building an innovative pipeline of ADC programs and plan IND filing for our lead program SOT102 by the end of 2021. The licensing agreement with our new, experienced partner LegoChem allows us to broaden our oncology pipeline with additional programs and solid tumor targets. We are looking forward to using the potential of LegoChem's ADC technology platform and to develop innovative ADCs for patients in need," said Radek Spisek, M.D., Ph.D., chief executive officer of SOTIO.

SOTIO will be responsible for research, development, manufacturing and commercialization of the ADC products, while LCB will support and work closely with SOTIO for the research activities and the manufacturing of components that are specifically related to its proprietary ConjuAll™ and the linker-payload technologies. Dr. Yong-Zu Kim, CEO and President of LCB added: "This collaboration is yet another example that illustrates how

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the value proposition of the LCB platform can increase the competitive position of our partners within the ADC space. SOTIO is an ideal partner for LCB due to its expertise and strategic focus on innovative antibody drug conjugates, and we look forward to working closely together on multiple innovative programs.

Sun Pharma to introduce Molnupiravir, licensed from MSD and Ridgeback



Kirti Ganorkar, CEO, India Business Sun Pharmaceutical Industries Ltd

Mumbai, India: Sun Pharmaceutical Industries Limited includes its subsidiaries and/or associate companies) said that it is gearing up to introduce Merck Sharpe Dohme (MSD) and Ridgeback's molnupiravir under the brand name Molxvir® in India. The Drugs Controller General of India (DCGI) is currently reviewing clinical data of molnupiravir for the treatment of COVID-19 in adults in India. Earlier this year,

Sun Pharma had signed a non-exclusive voluntary licensing agreement with MSD to manufacture and supply molnupiravir in India and to over 100 low and middle-income countries (LMICs). Molnupiravir is the first oral antiviral approved by the UK Medicines and Healthcare products Regulatory Agency (MHRA) for the treatment of mild-to-moderate COVID -19 in adults.

It is under review by the U.S. Food and Drug Administration (FDA) for Emergency Use Authorisation (EUA). Kirti Ganorkar, CEO of India Business, Sun Pharma said, "The recent authorisation of molnupiravir, licensed from MSD and Ridgeback, by the UK regulator is a positive step. In line with our consistent efforts to accelerate access to new drugs for COVID-19 treatment, we are gearing up to make Molxvir® available to patients and healthcare providers across India at an economical price post approval by DCGI. Molxvir® will be manufactured at one of our plants in India and we have enough capacity to meet the demand." In the Phase 3 trial by Merck, Molnupiravir significantly reduced the risk of hospitalization or death by approximately 50% in a planned interim analysis of the MOVe-OUT trial in at risk, nonhospitalized adult patients with mild-to-moderate COVID-19. Additionally, based on the participants with available viral sequencing data (approximately 40% of participants), molnupiravir demonstrated consistent efficacy across viral variants like Gamma, Delta, and Mu.

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Lincoln Pharmaceuticals Ltd reports 13.27% rise in the Net Profit in Q2 FY22



Mahendra Patel, Managing Director, Lincoln Pharmaceuticals Limited

Ahmedabad, India: Lincoln

Pharmaceuticals Limited, one of India's leading healthcare companies has reported a net profit of Rs. 22.88 crore for the Q2 FY22 ended September 2021 as against net profit of Rs. 20.20 crore in the corresponding period last year, growth of 13.27%. Net revenue for the quarter ended September 2021 reported at Rs. 129.41 crore, higher by 4.78% over previous fiscal's same period net revenue of Rs. 123.51 crore. EBITDA for the quarter ended September 2021 was reported at Rs. 31.95 crore as compared to Rs. 29.02 crore in the corresponding period last year. EPS was reported at Rs. 11.44 per share for Q2FY22 as compared to Rs. 10.10 per

share in the corresponding period last year. Company approved a dividend of Rs. 1.50/-per share for FY 20-21 at the 27thAGM held on 30thSeptember, 2021.

Recently the company acquired a plant in Mehsana, Gujarat and plans to launch Cephalosporin products. Company plans to invest Rs. 30 crore for the expansion and expects commercial operations from March 2022. The plant is expected to contribute sales of around Rs. 150 crore in the next 3 years. The plant will cater to all the Cephalosporin products i.e. Tablet, Capsule, Dry syrup and Injectable.

Commenting on the results and performance, Mahendra Patel, Managing Director, Lincoln Pharmaceuticals Limited, said, "Company has delivered a robust operational and financial performance during the quarter and is confident to improve our growth numbers going forward. Recently the company has also received an approval from Australia's medicines and medical devices regulator - Therapeutic Goods Administration (TGA) for its Khatraj facility. TGA and EU GMP approvals will further strengthen the company's presence in the export market. Strategic growth initiatives, product and geographical expansion, operational efficiency are likely to maximize value for all stakeholders in the near to medium term."

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Gerresheimer Customers Value Child-Resistant Pharmaceutical Packaging



New Delhi, India: Drugs are not meant to fall into children's hands. But just in case this ever does happen, it is crucial to prevent children from being able to open the containers by securing them with child-resistant caps. That is why more and more customers are choosing child-proof packaging options from Gerresheimer. Gerresheimer Triveni started CR closure manufacturing in India over 5 years ago, since then and thanks to increasingly fast-growing demand, created locally manufactured closure range for CR 38, CR 33 as well as for CR 28 and which all are in commercial production. This offering will in the coming months extended even further, with CR 53 production in Triveni India. Different CR-closures Gx Vials made from glass Gerresheimer's trade fair booth will focus on injection vials, also known as Gx vials.

Gerresheimer offers a fully comprehensive portfolio of glass pharmaceutical bottles extending from the smallest glass cartridges made from tubular glass up to large acid-

resistant chemicals bottles Gx Ampoules Gerresheimer offers a wide range of pharmaceutical ampoules made from type I pharmaceutical glass. The standard portfolio includes ampoules made from clear and amber glass that can hold between 1 and 30 ml. Among these products are straightstem, funnel-type, and closed ampoules that comply with the relevant ISO standards (types B, C, and D) with various breaksystems such as OPC (one-point-cut), CBR (color break ring), and score ring. Customerspecific requirements can also be applied in conjunction with the current ISO standards. Moulded Glass with DMF certificate Just over two year ago, the Gerresheimer subsidiary Neutral Glass renewed the furnace for the type I glass production.

Takeda India Launches Diagnostic Program to Support Rare Disease Patients

Mumbai, India: Takeda, a global, values-based, R&D-driven biopharmaceutical company, has announced ILLUMINATE - a rare disease diagnosis program to support improved clinical results for patients with Lysosomal Storage Disorders (LSD), independently run and managed by PerkinElmer and sponsored by Baxalta Bioscience India Pvt Ltd (part of Takeda group of companies). This program will support improved diagnostic pathways for patients with LSDs such as Gaucher disease, Fabry disease, and mucopolysaccharidosis Type II (MPSII; Hunter Syndrome).



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Simon Gallagher, Interim General Manager Takeda India

Considerably reducing diagnostic time through the program, physicians could timely initiate the therapy. Following initial recognition of symptoms that might indicate the diseases, Dried Blood Spot (DBS) testing enables physicians to confirm their diagnosis by taking a blood sample on a filter card and sending this to the laboratory for analysis. Reports are then available to the physicians, which can be accessed anytime on a password-based portal.

Simon Gallagher, Interim General Manager,
Takeda India, said, "We are committed to
bringing Better Health and a Brighter Future
to people, including patients living with a
rare disease with unmet medical needs.
The program will enable faster diagnosis,
bridging infrastructure gaps to enable
timely treatment and management of the
disease. Putting the patient at the center,
we will continue working towards improving
the standard of care for rare disease
patients through strategic partnerships

and investment in innovative solutions in personalized care and treatment."

By the time a diagnosis is usually confirmed, rare disease patients may have suffered irreversible symptom decline, limiting the effectiveness of treatment. LSD patients in India have been reported to remain undiagnosed for up to 20 years, depending on the specific disorder in question. In its first phase, the program will be implemented by PerkinElmer at specific centers in Delhi, Haryana, Uttar Pradesh, Madhya Pradesh, Gujarat, Rajasthan, Maharashtra, Kolkata, Tamil Nadu, and Karnataka.



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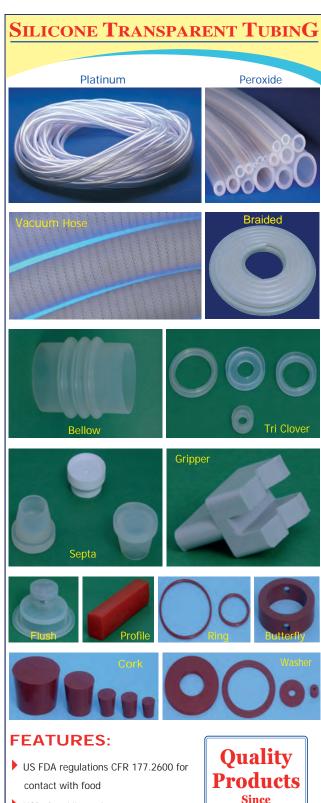












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Reviewing The Pharma Industry Year Across Various Lenses

The Indian Pharma industry has ventured across many aspects of challenges, advancements and alighting with the market demands and fallouts, as India tries to grapple around the tumultuous times of being impacted by the pandemic. In this issue, Pharma Leaders express their thoughts and opinions about the pharma manufacturing and allied industries, Learnings from Covid, Future trends that will drive the growth of pharma industry, Emerging areas & new business opportunities and many such constructive topics.

VAV Lifesciences' Upscaling the Production of Crucial Lipids



Arun KediaManaging Director, VAV Life Sciences Pvt Ltd

Arun Kedia is the CEO, VAV Life Sciences that produces cGMP certified, natural phospholipids as pharmaceutical raw materials, functional cosmetic ingredients and nutritional additive. He shares about the R&D activities of his company, importance of domestic pharma drug research, and more.

think the pandemic exposed our vulnerability as human beings. The Covid-19 pandemic has made us put health, hygiene, and safety before anything else. The industry also realized how vulnerable businesses are to such unforeseen circumstances. Companies are now putting risk and safety frameworks in place to ensure business continuity. On the other hand, the pandemic also opened business opportunities that never existed. As the demand for Covid-19 vaccines shot up, VAV had to ramp up the production of crucial lipids that were needed to manufacture the m-RNA vaccines. We had to come up with ways to quickly improve our production capacity to meet this unprecedented demand. The pandemic gave us lessons in business management, production, and distribution that no university or management textbook can ever teach you.

Future trends that will drive the growth of the pharma industry

I think the Indian pharma industry like all other industries was impacted by the pandemic with various restrictions and impediments, however, the industry has come through strongly since then. The world has taken note of the industry's quick response to the global crisis and how our industry stepped up to meet the global and domestic demand for the

Covid-19 vaccines, essential drugs and ensure a robust supply chain. Experts agree that the Indian pharma industry is being seen as a preferred global supplier of innovative medicines and novel ingredients in the post-pandemic world. Some of the trends we will see shaping the pharma industry include investments to improve manufacturing and supply chain infrastructure, industry and academia collaborations on research. and the development of innovative models to improve access to medicines while lowering overall costs. The industry will see increased applications of digital technologies in the future.

Emerging areas & new business opportunities

I think there are a lot of business opportunities for the pharma industry in chronic therapies. Therapies in cardiovascular, anti-diabetes, anti-depressants, and anti-cancers are still evolving. Novel drug delivery systems (NDDS) have proved to be greatly beneficial with applications across various medical therapies ranging from HIV to Cancer to Covid-19 treatment. Companies should look at investing more in the research and development of NDDS. There is also a huge opportunity in pharma ingredient manufacturing. For example, the Covid-19 pandemic and

mucormycosis (black fungus) infections, as well as the rising incidence of cancer or genetic diseases, brought lipids under the limelight. There was an unprecedented surge in demand for these biomolecule lipids. The need for such specialized ingredients is also an opportunity for the industry.

Key focus areas & future plans of your organizations

VAV has invested ₹15 crores (US\$ 2 million) to boost production capacity to meet the unprecedented overseas demand for lipidic ingredients.

These lipids are highly specialized biomolecules that are produced in small quantities and are used in the production of Covid-19 vaccines and other medicines for treating a variety of conditions like cancer and heart disease.

We are currently the only Indian and fourth global producer of highly purified lipids that are approved for use in novel drug delivery systems (NDDS). We are now undertaking a major expansion project at our EU GMP certified site based in Ratnagiri in the state of Maharashtra, India. On completion the expanded facility will produce about 6 times its current volume, thereby increasing lipid

production to meet about 40% of global demand. The new capacity which would be operational from June 2022 will boost VAV's sales by about 3.5 times to reach ₹45 crores (USD 6 million) by 2023.

Regulations & policy reforms
that should be introduced by the
government to further benefit for
holistic development of pharma
industry value chain in India
to realize the vision of Indian
Government becoming a global hub.

The government should encourage domestic pharma drug research. Adding more public medical colleges and universities dedicated to R&D would be a welcome step. Providing more incentives to encourage exports would benefit the industry. From our perspective as a biopharmaceutical company, the Government should look at introducing schemes and incentives for companies that manufacture specialized biomolecules that are crucial ingredients in pharmaceutical formulations. This will encourage more companies to undertake research in the field of such specialized products, strengthening the supply chain and reducing the industry's dependence on imports.

Emerging as an Immaculate Customer Service Provider in Pandemic



Janak Sheth

Managing Director, Century Pharmaceuticals Ltd

Janak Sheth is the CEO of Century Pharmaceuticals, the Biotechnology research on Asthma and Allergies to develop a novel recombinant protein for more than 40 years. He widely shares his experience and far insights about the pandemic, optimizing technology & automation, and other keen viewpoints.

Future trends that will drive the growth of pharma industry

The pharma industry has come of age. There is fierce competition as the industry which is steadily growing at 15% p.a. The government has started encouragement of backward integration of the pharmaceutical raw materials manufacturing with the PLI scheme. We in India have some distinct disadvantages vis a vis the chinese manufacturers like cost of funds, temperature conditions,

cost of raw materials, cost of power, cost effective workforce etc. The chinese manufacturers have set up huge world class plants to reduce costs and hence it is difficult for indian manufacturers to fight the competition with the chinese players on price. However the PLI scheme will allow some products being manufactured in India which were earlier being imported. Manufacturers who can make use of this scheme will have an opportunity to service the local drug production as the

requirements in India are substantial. Indian manufacturers are finding favour amongst foreign buyers as we have better quality systems in place and the GMP level at the ground level is far better than our competitors. We believe that the shift in procurement of APIs from India will grow faster with time as more products are made indigenously.

Emerging areas & new business opportunities

Covid has brought about a sea change in the industry as people were scared looking to mortality and the side effects post a covid attack. Several anti-viral products and macrolides have been used extensively and will continue to be in demand although the number of infections have reduced significantly. New biotechnology molecules are also being researched and being developed with the concept of target therapies. More new products from Biotechnology are likely to hit the market as they promise use of green chemistry and products which have much less side effects.

Key focus areas & future plans of your organization

We have a wide range of products.
Our R&D team is constantly working
on new products to keep us ahead of
the competition. We have developed a
unique process for the manufacture of

Molnupiravir and have patented the same. Molnupiravir has been acclaimed as a much more effective treatment in Covid and will have a huge future.

We are also trying to develop other antivirals and new products which have a niche market. These will drive our future growth in domestic as well as export markets. Owing to loyalty of our customers, most of our new products are suggested by existing customers.

How has the pandemic shaped Century Pharma's stance in the market

We were stuck with the lockdown at a time when several bunched up export orders were to be delivered. After only a week post the lockdown we started moving our export shipments through courier services who helped ship the pending orders. Our customers were wonder stuck how we could manage with 100% lockdown in place. Luckily most of our workforce came from nearby villages and COVID was affecting cities only at that time. We could ship out all our pending orders and this brought about a very positive impact on our customers.

Our company performed very well during the harsh covid times and continued to progress with the enhanced pace thereafter owing to our bold initiatives to return back to work soon. We however observed a lot of precautions of hygiene, sanitation and social distancing to prevent even a single infection amongst our workforce.

What are the major challenges for APIs manufacturing operations units and how have you addressed these challenges?

The major challenges of API manufacturers is fighting the competition from China as their cost of production is far lower than ours. We have improved our quality standard, quality systems, GMP upgradation and documentation to satisfy the toughest of all customers. We have the patronage of even the large and multinational companies who drive the company's growth because of our commitment to quality and service.

How has the sector of APIs manufacturing evolved over the years and what are the latest technologies and strategies utilized by your company to stay competitive?

The cost of manufacturing in API industry is most crucial. We have developed systems and better technology to recover most of the solvents used and also concentrate on higher yields in production with automation and training of our people. With a wide range of products and our immaculate service to our customers, we are able to retain most of our customers. We have several customers who have been with us more than 3 decades uninterruptedly.

During the COVID Lockdown period in India, how did Century Pharma poise itself to extend support amid the challenging times?

During COVID lockdown time
Azithromycin was widely used to prevent
upper respiratory track infections and
we could serve a lot of customer with
this product. We also manufactured
Amphotericin B for black fungus treatment.
With no down time in our plant we could
produce and sell a good quantity of this
vital product and satisfy most of our
customers. We became known as the
company which delivers whenever they
promise even under these challenging
times.

"Business Growth Is Directly Proportional To Employee Satisfaction"



Somesh SharmaSVP & BU Head, Discovery Chemistry
Aragen Life Sciences Pvt. Ltd

Somesh Sharma has over two decades years of post-PhD experience in pharma and contract research organizations. He has shared indepth understanding of his organization's growth and sustainability journey, covid learnings, and such key points.

Learning from Covid

Covid-19 has brought lot of disruptions to normal life and economy of various countries, but in contrary it has given us an opportunity to think differently, unleash hidden potentials and become self-reliant for unprecedent circumstances. Many businesses have already proven the saying 'never waste a crises' to build new opportunities for their growth and sustainability. Before Covid-19, there used to be a dependency on healthcare

products and PPE, however, Atmanirbhar Bharat initiative has paved the way of selfsustenance and independence.

Organizations are recognizing the value of sustainability as a corporate strategical priority and leading to restructure company's fundamental approach to meet business wellness and expansion plans. The sustainability of any business requires stable skilled work force, and recent trend of employee's resignations

have given a wake-up call to re-think employee engagements. There are few basic things which need to be re-looked and reassessed:

Learning and Development: Covid has created an environment of virtual learning to keep the pace of employees learning and education on new areas, however, organization with less agility in adapting these technologies has faulted on skill development. For success of L&D programs, it is important to create and cultivate the culture of learning at all levels, bring more engagements and connectivity within the organization, and also cultivate an environment of reskilling. It is imperative for any organization to be future-ready and learning mindsets will create a value today and in long term for business sustainability.

Flexible work hours: There is a mindset shift in employers' approach to employees, wherein, WFH became a normal process of operations during pandemic time. With improvement of pandemic situation, the employees are still seeking the same flexibility and privilege to bring worklife balance. To address this concern, the proper communication becomes a critical factor to make employees aware of existential purpose of organization and connect to them with more opportunities for development. Hybrid working model is an initiative to bring work-life harmony and nurturing the culture of empowerment and trust.

Organization health: Business growth is directly proportional to employee satisfaction and engagement levels. There are organizations who have given equal weightage to organization health index to P&L analysis, and created paths for leadership to bring cohesiveness and belongingness to team. They have built the culture of innovation and learning environment, open communication, sharing and caring, feedforward and feedback loop mechanism, and making sure to construct a kind and warm culture with shared vision.

There was a huge interruption in supply chain during the Covid time. Every organization wanted to start their operations as soon as possible to meet customer demands, however, it was impeded due to lack of coordination, cooperation and integration of business activities. This situation pushed organization to reevaluate their supply chain strategy to avoid any future derailments. The following corrective steps helped organization to regain their position.

Localization of suppliers - Material supply was harnessed with development and engagement of local suppliers.

MSME - Build strong relationship with enterprises for continuity of business and provide necessary credit support for their existence.

Secure Logistics - Proactive planning with

partners on mode of transport. Collaborate and consolidate material supply to leverage freight capacity.

Inventory assessment – Assess customer demand to manage material inventory, back integrate for stable supplies, optimize production and distribution capacity.

To further strengthen resilience of supply chain, it is pertinent to identify potential vulnerable drivers and digitize supply chain operations to improve predictability, accuracy, speed and flexibility of risk management. Beyond this, Environmental, Social and Governance (ESG) is gaining lot of focus to assess material risk, improve compliance, reduce carbon footprints and maintain sustainable supplies for investment and growth opportunities.

Future trends that will drive the growth of pharma industry

Great attrition has pushed organization to reimagine talent pool and understand the potential skill gaps for future readiness – develop a skill based learning strategy, build infrastructure for skill development and capability build-up, reformat job orientation programs and bring a personal commitment for employees' rejuvenation and well-being.

Talent accessibility can't deter pharma companies to prepare themselves for unforeseen challenges, their inquisitiveness to address human health leads to development of new modalities.

Artificial Intelligence – The usage of AL and ML learning tools is becoming more popular for better predictability and outcome in drug discovery and development programs. The applicability of these tools in identifying the right molecule for synthesis, best way of synthesis and selecting the right parameters for optimized process is already providing benefits in reducing entire discovery and development process by 3-5years. With more advancement in algorithms, these tools can certainly expedite entire R&D cycle.

Data analytics - Huge data is available throughout the drug discovery and development that need to be assembled for proper analysis to derive valuable information. This requires high computing systems to build valuable assets on predictive models, diagnostic and descriptive analysis.

Automation – Technology intervention can bring efficiency in most of the mundane processes to improve speed, performance, quality, compliance, and safety. The application of automation in discovery and manufacturing will bring more transparency, productivity, resilience, flexibility and cost effectiveness.

Digitization – An important step for sustainability, accessibility and transparency for business operations. Virtual meetings, remote access of instruments, IoT enabled shop floors and augmented reality are steps towards digital transformation. Blockchain technology secures the information flow in pharma ecosystem.

Digital Therapeutics - Evidence based therapeutic interventions are getting more visibility to predict physical, mental and behavior patterns. There are many companies who have already taken a big leap in this direction - Cognivive to treat neurocognitive and neuromotor impairments, Dopavision to arrest myopia progression.

Emerging areas and new business opportunities

Covid has given testing time to human endurance, tenacity, and nimbleness. The companies who're agile, adaptive and resilient have responded positively to take next challenges and opportunities. The pandemic has defied to reconsider manufacturing & supply chains processes, improve predictability on disease management and bring relevance to future needs of human health. There are few pharma trends which are going to be dominant and derive attention in future.

Quantum computing (QC) - This field will play a profound role in drug discovery and development. These are powerful tools in comparison to traditional computational system and will provide better predictions on translation of molecular profiles from Hit to lead stage. Protein protein interactions (PPI) can be studied in

conjunction with designed molecules in a virtual biological environment. QC ability to predict, simulating structural property and interactions with proteins, development of new product formulations can change the dynamics of drug development process.

Gene Therapies – Gene editing technologies (CRISPR, CAR-T) modulates the disease by repairing or reconstructing defective genetic material. It has played a pivotal role in managing various diseases such as cancer, heart disease, diabetes, fibrosis. Recent time has seen lot of acquisition and collaboration in this field to meet unmet medical needs.

mRNA technologies – mRNA based technologies has emerged as a promising therapeutic interventions to treat various diseases as an alternative to conventional vaccine approaches. However, to have better translation to in vivo, mRNA requires efficient and stable delivery systems which has resulted in enhanced interest in lipid delivery systems.

Tech enhancement in manufacturing

- To provide affordable medicines, GMP requires overhaul of their processes, technologies like PAT, QbD, PSM, process intensification need to be incorporated as a part of development process to reduce risk and overall manufacturing costs. Technological enhancement should become part of agile response to rapidly changing regulatory framework.

Industry 4.0 will gain more significance for digital initiative and interconnecting manufacturing and distribution network.

M&A: Market will witness high propensity of collaborative and partnership engagements to mitigate the risk and expand the product portfolio to strengthen their position. According to industry experts, post pandemic will see surge in M&A to build niche capabilities and expertise to meet unusual market demands.

There will always be a continuous desire to improve human wellness through early detection and prevention tools, customized treatment, and precision interventions like robotic, nanotechnologies etc. It will be further substantiated with digital transformations and IoT enabled services for data analytics for a meaningful informed decision. The focus of healthcare should always be on innovation, operational excellence, affordability, and sustainability.



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Italvacuum - More Than 1000 Vacuum Pumps In India!





Vacuum pump Saurus 939

Italvacuum - one of the leading international manufacturers of vacuum pumps and vacuum dryers has now made a breakthrough, reaching over a thousand vacuum pumps installed in India. This fantastic result has been possible thanks also to the cooperation with Vacuum Drying Technology India LLP, based in Mumbai, sole agent for Italvacuum in India, since many years. With a very competent staff, Vac Enterprises India LLP is able to understand every customer's process requirement. This is also due to the training provided to all the salesmen and technicians, that are constantly

updated with regular courses at Italvacuum headquarters.

Italvacuum offers excellent solutions for the treatment of wet powders from filtering and centrifuging processes. Striving to serve its customer's needs all around the world, the firm offers multiple versatile turn-key installations, as well as tailormade equipment and systems, according to the client's individual process requirements in the chemical, fine-chemical and pharmaceutical industry. The Italian company provides

users working with Active Pharmaceutical Ingredients (APIs), Fine Chemicals and Intermediates with utmost quality, innovation and safety. Moreover, their original and patented product selection complies with all the general international regulations (ATEX, UL, PED and ASME) and with the latest FDA and cGMP norms.

Apart from the cutting-edge technology, the Italian manufacturer was able to succeed in India by providing toptier training and in-house courses to the technicians from Vacuum Drying Technology India LLP so that Italvacuum





is able to understand and fulfil all the requirements of their customers.

The vacuum pump that guarantees best performances, ensuring total recovery of extracted solvents, even in severe operating conditions. A simply designed machine, that combines traditional robustness and reliability with the most evolved technology. Resistance, strength and consumption of oil virtually eliminated thanks to the innovative LubriZero® system. A solution which guarantees perfect operation and optimum results with total respect for the environment. Saurus939® has no fear of aggressive and corrosive solvents, powders and condensates, nor distillation by-products. But above all it does not fear confrontation because it is designed and manufactured to work 24 hours a day with a constant

excellent performance and minimum operating costs, thanks to a low-energy motor, negligible oil consumption and easy, immediate maintenance. Powerful, efficient, but absolutely safe: Saurus939® guarantees optimum safety through the whole process and complete purity of the final product. In other words, ensures an uncontaminated vacuum. Saurus 939® has a wide range of use and could be employed in different sectors: Chemicals, Pharmaceuticals, Cosmetics, Oil & Gas, Plastics & Rubber, Bioscience and Waste Management. Especially effective in the processes of drying, reaction, distillation, crystallization, filtration, evaporation and polymerization.

Since 1939 Italvacuum produces vacuum pumps with great technical know-how and a thorough knowledge of the needs of



its customers, which has also progressed along with the developments in chemical and pharmaceutical industries. The company's awareness on those changes over time, enabled its engineering services to build up unparalleled expertise in vacuum processes. Focusing on individual needs, pilot tests can be arranged at the manufacturer's headquarters to determine the best possible solution for the clients. Since efficiency and safety are of highest priority, Italvacuum's qualified personnel provides the following services after an installation:

- 1) Scheduled Preventive Maintenance;
- 2) Technical Assistance;
- 3) Service Parts;
- 4) System Upgrading and Overhaul.

In giving assistance in all of these areas, the firm ensures the proper function as well as durability of the product and a fruitful production process.

Not only Saurus939®: the dryer series:

Multispray Cabinet Dryer®, tray vacuum dryer with C.I.P. (Clean in Place)
Multispray® patented fast-washing system.

Multispray Cabinet Dryer® is not a conventional tray dryer. It achieves high quality results and promises efficiency, safety and flexibility for any product batch. However, what sets this dryer apart from all others, is a guaranteed total cleanliness of the inner chamber and all heating plates, in compliance with the latest FDA and cGMP standards. Due to the C.I.P. (Clean in Place) Multispray® patented fastwashing system, the equipment can be completely cleaned in just a few minutes, minimizing washing liquid consumption and enabling the user to change batches quickly.

Criox® System, rotary vacuum dryer / powderer with electric lump-breaking units.

This rotary vacuum dryer consists of a double cone chamber, characterized by smooth surfaces without edges and sharp corner and a powderer with electric lump-breaking units, ensures continuous revolution of the processed mass and allows a homogenous and delicate mixing. This also increases the product surface exposed to evaporation and thus enhances the system's efficiency. Furthermore, it prevents the forming of lumps and allows

for grinding and powdering during the last phase, limiting the use of the mill, making Criox® versatile and profitable.

LaboDry®, laboratory-scale tray vacuum dryer.

LaboDry vacuum tray drying ovens have been designed and manufactured to meet the requirements of small batches and high potency API. Featuring a construction with seperate cells and skid-mounted auxiliary accessories, these static vacuum dryers are designed for glove box installation. Regarding the materials in contact with the product, LaboDry® can be manufactured in AISI 316L (1.4404), AISI 904L (1.4539) and ALLOY C-22 (2.4602).

Bi-Evolution Dryer®, bi-conical rotary vacuum dryer available with a wide range of accessories.

This biconical rotary vacuum dryer, capable of totally extracting solvents and water from moist masses - mainly from centrifugation or filtration processes - can be used for a wide range of products, such as intermediate or fine chemicals. Itallows efficient drying of friable, easily degradable, temperature and photosensitive products, as well as sterile/injectable active pharmaceutical ingredients (APIs) or chemical reagents.

Planex® System, patented horizontal vacuum dryer with ZeroFriction® planetary movement eccentric agitator.

Planex® System provides another ideal solution for drying powders from filtration

and centrifuging processes. This multipatented dryer's eccentric agitator with two independent movements is able to rotate simultaneously on its own axis and tangentially to the drying chamber, which guarantees a better mixing of the whole product. The reduced size of the agitator in relation to the diameter of the chamber allows higher rotation speeds, with a lower energy consumption than conventional industrial dryers, ensuring the best endresults.

CosmoDry® System, horizontal vacuum dryer with concentric agitator available with a wide range of accessories. The innovative horizontal paddle vacuum dryer is the result of highly advanced research and a careful analysis of the production requirements of the most demanding customers. CosmoDry® System ensures power, loading flexibility, drying speed, easy unloading and most importantly; the highest quality of the dried product. Compared to conventional dryers, the special design of the agitator with heated shaft means that the internal parts can be dismantled into several sections, quickly and conveniently.

Contact Details

Website: www.italvacuum.com



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in











Reducing Cell Culture Contamination with INTEGRA's Versatile Pipettes



INTEGRA Biosciences - a leading provider of high quality laboratory equipment supplies a comprehensive range of liquid handling tools that are ideal for sterile cell biology workflows. Each piece of equipment, from electronic pipettes to robotic pipetting systems and media dispensers, has been expertly designed to fit comfortably under a laminar flow hood to reduce the risk of cell culture contamination. Paired with the company's GripTip pipette tips, which meet the highest sterility requirements thanks to the VIAPURE Statement of Quality, cell biologists can have complete confidence in their cell handling.

Contamination, whether from the environment or from the crossing of cell lines, can have significant consequences for the reliability of results and the validity of scientific conclusions. It is estimated that more than 15 % of cell culture studies are based on misidentified or cross-contaminated cell lines, and the

incidences of biological contamination are expected to be even more. INTEGRA has developed its liquid handling solutions with this in mind.

This starts with the VIAFILL media dispenser, which is designed to provide non-contact dispensing for the filling of microplates and/or seeding of cells to reduce the risk of contamination. The easy-to-clean and compact design of the company's electronic pipettes - VIAFLO, VOYAGER, MINI 96, VIAFLO 96 and VIAFLO 384 - allows them to be safely used under a laminar flow hood, helping to ensure sterile handling. Combined with Sterile, Filter GripTip pipette tips – which form the perfect seal with each pipette so that they never leak or fall off - this virtually eliminates the risk of crosscontamination and aerosol formation. And to minimize user contact and the risk of human error, you can even pair a VIAFLO or VOYAGER pipette with the ASSIST PLUS pipetting robot, offering a completely walkaway solution for cell biology applications.

Contact:

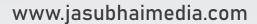
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From Solids to Liquids: Trinamix Expands NIR Spectroscopy Portfolio By Transmission Solution

TrinamiX GmbH, a wholly owned subsidiary of BASF SE, is presenting the latest addition to their pioneering portfolio: A portable solution to grant institutions and companies immediate insights into the molecular composition of liquids. trinamiX has once more successfully transformed the established method of near-infrared (NIR) spectroscopy into an accessible, affordable, and easy-touse solution for broad usage beyond common lab applications. By opening up the world of what is naturally hidden from the eyes, the solution enables customers across various markets to make informed decisions - right on the spot, anywhere they are. For the past few years, trinamiX has been significantly miniaturizing NIR spectroscopy, thus bringing lab power to customers across various industries all around the world. Equipped with trinamiX' Mobile NIR Spectroscopy Solution, they are empowered to perform detailed onthe-spot analyses of diverse solids, e.g., to identify different kinds of plastics during recycling or to assess the nutrient value of agricultural raw material. More recently, the company has successfully built upon their expertise and developed an additional transmission solution to grant detailed insights into what a given organic liquid is made of. "Having a lab analyze your samples is time-consuming. It takes up to several weeks until you get to know what you're dealing with," says Nils Mohmeyer, Head of Business Development & Sales Spectroscopy at trinamiX. "Our customers will be equipped with a fast and convenient way to analyze

a broad variety of liquids right on the spot, wherever they are.

The waiting time is reduced to minutes." Whether it is, e.g., people in small inhouse laboratories, at universities or right at production facilities: None of them need any NIR expertise in order to perform and interpret measurements - by using three integrated components: a portable highperformance spectrometer, cloud-based analytics, and an app to instantly show results on a Windows PC or smartphone. The whole lab can easily be set up right where it is needed, taking the complete NIR fingerprint of organic liquids with a wavelength range of 1450 to 2450 nm. trinamiX is on their way towards transforming how NIR spectroscopy of liquids will be performed in the future. The first customer to benefit from these advantages is BASF's brand OASE®, which offers highly specific solutions for gas treatment. With BASF as a strong development partner, trinamiX has successfully tailored their transmission solution to the compositional analysis of OASE gas treatment solutions. The result, so-called OASE digilab, enables OASE customers to continuously monitor the condition of their gas treatment process in real time. OASE set a first example of how customers substantially benefit from trinamiX' NIR spectroscopy solution for liquids. And there will be more: To offer their solution to customers across various industries and markets, trinamiX is continuously enhancing their solution, also by joining forces with further development partners <





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