From the Desk of President

ABLE Association of Biotechnology Led Enterprises

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The e-newsletter for the Indian Biotech industry

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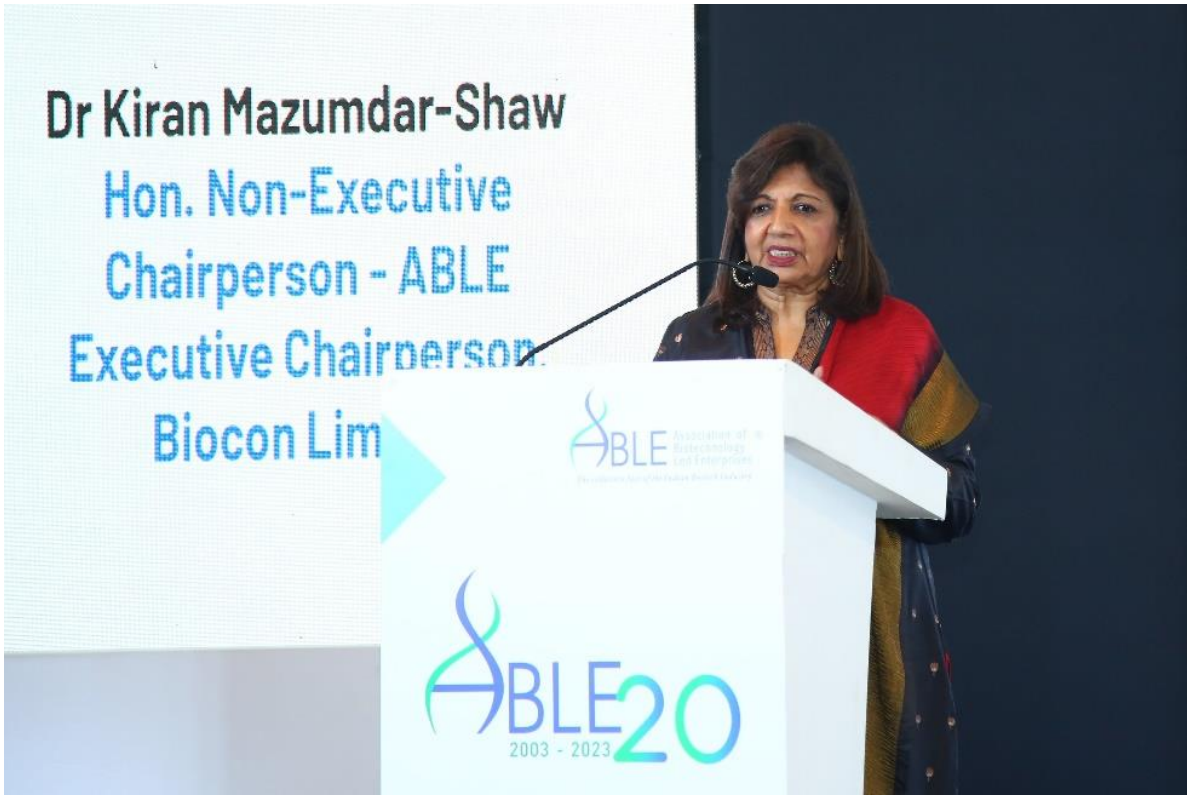
"Incentivize Research to make India a $500 billion BioEconomy by 2030"

Clarion call by ABLE Chairperson Dr Kiran Mazumdar-Shaw during the start of ABLE@20 celebrations

(Here are the excerpts of the Vision Talk by ABLE non-Executive Chairperson and Founder of Biocon Group, Dr Kiran Mazumdar-Shaw on November 16, 2022 in Bengaluru)



I just thought I would basically start my comments with the size of what we aspire the Indian BioEconomy to be. And if you remember, we had actually chosen a target of $150 billion by 2025 and are well on track to achieve that target and even exceed it. We're at about $80 billion thus far and it's growing very rapidly. And of course, we are talking about 14-15 percent CAGR in recent years and we're well on the track to achieve that goal by 2025.

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We also saw that there was an indication that we want to take that number to $300 billion by 2030. And that would also mean that we would have to grow at a very similar CAGR. So, in that same direction, maybe by just accelerating the speed of growth a little more, I do believe that for the 100th anniversary of India's independence in 2047, we ought to at least aim for a $500 billion BioEconomy. And I do believe that this is a pretty conservative target. Let me tell you why? First and foremost, the Prime Minister has actually set the country a target of $30 trillion by the same. So, if you then Dimension $500 billion in the context of $30 trillion, it sounds very small because I really believe that the BioEconomy has to be a very significant component of that $30 trillion Economy. And I guess if you were to take a multiplier effect of that $500 billion, it would make sense. So perhaps we have to contextualize it a little deeper and with more granularity.

But why am I optimistic, that we can very easily build a $500 billion BioEconomy? What do I mean by the BioEconomy? So, I think when we talk about the BioEconomy, it is about the role of Biotechnology in basically building all the supply chains that would be involved in creating a very different agricultural sector. A strong focus on sustainability and when you talk about sustainability you are of course talking about Renewable Energy, you're talking about Bioremediation and you're talking about Biotransformation and Enzyme Technologies to replace a lot of the Industrial processes that are dependent on very polluting Chemical Technologies. And if you look into all of this then it is not the end product that is going to be measured as a part of the BioEconomy but the entire supply chain that gets to deliver on that end product. And that is why I believe that a BioEconomy that dimensions itself at $500 billion is very conservative.

Now, let's look at other aspects of the BioEconomy. Let's look at Agriculture. Agriculture, can derive a huge amount of benefit from biotechnology whether it is Gene-editing technologies or CRISPR. Whether it is the use of AI (artificial intelligence), or hybrid selection. And whether it is many, many other forms of technologies that involve Genomics and other aspects of Agricultural technologies, in terms of even looking at ways of shortening, the cycle of growth etc., Vertical Agriculture, Hydroponics, Sea-farming, etc. I think there's a lot to be done and the opportunities are enormous.

Let's look at sustainability. I think reducing the carbon footprint is every national economy's Target. I think, India is very focused and our Prime Minister has certainly brought a lot of focus on Climate Change and reducing our carbon footprint. And in that of course renewable energy, especially renewable energy, derived from biological resources, is going to be very key component. I was always very excited with using raw material wastes from agriculture to do that. But today, Sea6Energy has also thought beyond waste agriculture; they've actually looked at harnessing seaweed and doing Sea-farming to create biofuels from seaweed. So, you can see that there's a lot of out-of-box thinking when it comes to renewable energy from biological sources. And again, I think that's going to be a huge opportunity for India as an economy and a must have aspect of Renewables for India.

And then we come to, of course, Food, Feed and Nutrition where Synthetic biology and BioPharma. The Biopharmaceutical technologies have a very key role to play. Today of course, India does boast of being The Largest Vaccine Producer in the World and we are certainly amongst the largest producers of generic medicines. But I'm also pleased to say that India is slowly becoming a significant nation when it comes to Biopharmaceuticals. I

know that our own company (Biocon) is amongst the largest producers of Insulin and Biosimilars in the world.

And in that same context, I think, what is also very exciting is the opportunity to leverage our very rich and vast talent pool that we have in the country. To engage with the Biotech ecosystem globally, either through services or through partnerships and I think this is happening at all levels, whether it is academic engagement, whether it is bilateral trade, whether it is partnerships between companies' joint ventures, I think everything is happening because India has a lot to offer.

It's also very important for me to basically talk about technology convergence because I think that's going to be a very important part of this growth that we are targeting. In the information age, data science is becoming extremely important and other aspects of digital technology is allowing us to advance at rapid speed and I think Industry 4.0 is extremely critical in the area of Biotech manufacturing for us to succeed. So, with all this happening, I think India is poised in a very favorable way given the kind of talent that we have both in Biosciences, Information Sciences, Computer Sciences and based on that I do believe that we have a great future ahead.

Now, what is it that will actually allow us to reach that $500 billion BioEconomy. We all know that it takes investment. It takes research and innovation and finally it takes a marketplace to take those ideas to commercial success. And here, I would always like to Benchmark what we are doing to what has succeeded in the world and when we look at the most successful Bio innovation hubs, I think the US has certainly demonstrated that it has an ideal ecosystem where if you look at the Biotech Continuum, you have Seed Capital backing ideas and concepts. You have Risk Capital, backing proof of concepts, and proof of success and then you have Venture Capital that takes over to scale those ideas and finally commercialize those ideas. Capital markets have also played a very key role in taking those ideas to the market. And I think the kind of ecosystem they've had is to basically create a virtuous ecosystem.

I think funding biotech has always been a challenge and the reason being that, it generally takes 10 years to go from Lab to Market and unfortunately most funds, that you know, run out in 10 years. And I think there's always been a challenge because of the gestational nature of biotechnology and the kind of risks associated and the unpredictable risks associated with many, many biotechnologies that has actually seen a kind of sitting on the fence approached by many investors. I think the return on investment has also been extremely disappointing to many investors. So, unless we fix this, and unless we make sure that we provide an exit to investors either through Capital markets or through M&A (mergers & acquisitions), I think you will constantly be stunted.

I know having built a company that is pretty large, you know, where I started in a garage with very small Seed Capital, scraped around for some risk capital and then finally had to basically bootstrap ourselves into some level of scale and after which of course it has been very successful story.

I know that if I hadn't paid back my investors, I wouldn't have had those investors coming back to reinvest in what I was doing. So, I think we need to figure out how we have to do that. India needs to actually come out with policies that incentivize the research because we are not seeing enough investment in research. I think there's been a lot of discussion

around that. I think we are always very nervous and risk-averse when it comes to investing in research.

At an industry level, it is certainly very apparent. Most Industries stay clear of taking big risks when they come to Innovation and investing in Innovative research which has a high level of unpredictability. I think the government has done its bit, I know that BIRAC (Biotechnology Industry Research Assistance Council) has been a huge success, and I want to congratulate the DBT (Department of Biotechnology, Government of India) for actually making BIRAC into such a successful Flagship Venture where BIRAC has taken that risk, provided the Seed and Risk Capital to many, many Innovative companies and many of those companies are here within this room as beneficiaries of that experiment. And I think, BIRAC, I'm sure and we'll see, could get good return on that investment that they have made in many of these companies. Maybe it's very early days yet to really talk about the Quantum of return on investment but I hope that in the foreseeable future, we see a very, very rich return on investment in many of these companies that I hope will succeed in a big way.

One of the things we've also recognized as a group of members at ABLE (The Association of Biotech Led Enterprises) and under the auspices of ABLE that it is vital to have academic incubators. I think incubators that are linked with academic research institutions are certainly vital to generate new ideas and scientifically led ideas that are tempered with a strong sense of research and Innovation and science. And here, I think I would like to call out see C-CAMP (Center for Cellular and Molecular Platforms) which actually is a great partner for the National Center for Biological Science (NCBS). I want to call out BBC (Bangalore Bioinnovation Center) which has basically twinned its effort with IBAB (Institute of Bioinformatics and Applied Biology), a small research institute of bioinformatics and applied biotechnology. But IBAB itself is now a center of excellence. Then of course, Art Park at is IISc (Indian Institute of Science) and in addition to that what is very unique about Bangalore is the philanthropic capital that has flowed into new research initiatives. Kris Gopalakrishnan's (Infosys co-founder) Brain Research Center at IISc is one outstanding example of that philanthropy contribution. I know that recently Kris Gopalakrishnan, Rohini Nilekani and myself made a philanthropy contribution to the Science Gallery Bengaluru which again sees itself as a very important startup ecosystem and a research and Innovation ecosystem.

And then you got people like Subroto Bagchi and N S Parthasarathy who have invested big time in setting up the IISc School of Medicine. An MD-PhD program is going to be at the heart of what they're doing. And then you have many, many other such contributors of philanthropy too many institutes. I know Ashok Soota has recently made a small contribution to the Mazumdar-Shaw Center for Translational Research where he wants a focus on Cognitive science, Alzheimer's and a lot of that research is being done in partnership with the Narayana Health Hospital.

What I think we need now is about focused investment in frontier technologies, and even that is happening. We see Synthetic Biology is taking center stage in many, many ways. We've got String Bio here. We've got Jananom here and I think all this is going to be very important as India starts looking at specific sectors where it wants to build skills and scale.

We are seeing Cell and Gene therapy becoming a very active space. And here, we've got companies like Immuneel and ImmunoACT and Dr. Reddy's, all basically now investing in

that sector, and I'm sure in the next five years this is going to be a very attractive sector. We have many companies which are focused on genomics, on Gene editing Technologies. We have many companies that are focusing now on Novel Diagnostics etc. We have companies like Bugworks focusing on the Next Generation antibiotics.

So, I think there's a lot happening in very specialized areas of research, innovation and market opportunities. But I think what is most interesting and exciting about the BioEconomy, is the growing domestic demand for all that we are doing. India is a growing as an economy that is going to move out from being as an economy that is below the poverty line to a consumer-led economy is not too far away. Today of course, we are at a level that is not really conducive to consumerism. Today, we are below $3,000 per capita income. We need to break out at a $5,000 per capita income to really start seeing consumption take off. And once we reach what middle-income countries have as a $10,000 per capita income, that's when you will see strong consumer demand.

What the BioEconomy serves is the basic needs of people, It's Food, Feed and Healthcare and in our case, I think energy security and sustainability and of course, agriculture in a big way. And here we are serving not just the people with products but we're actually creating jobs across the Continuum. We are creating very complex supply chains which are going to be digitally connected, digitally driven, that's the excitement of this convergence of technology.

So, I think there's a lot of opportunities out there for us to tap as an industry. I think we need to focus on how do we make this ideal ecosystem that gets Investment into the areas that we really want to invest big time because we don't want just small showcase that says We also have this small company or we also are doing this. We need to do things at scale. We need to do things at global scale, because that's the opportunity.

The geopolitical dynamics of today puts us into a very, very unique position. We are now proving to be a preferred destination for research, innovation and manufacturing. Not because we are low-cost, but because we have the skills, the talent, and the scale of talent that is required for global success. That's where investors will invest and I think in biosciences all this time, we haven't been challenging our scientists enough. I think today's education has to go beyond the classroom. Today's scientific education has to be in pursuit of answering questions that have not been answered as yet. Today's scientific temper has to be curiosity-driven, experimental and it must be a scientific temper that knows how to deal with failure. I think as a society and as a biotech community, we need to understand that failure is embedded if you want long-term success in innovation. So, I think investing in high-end research, understanding what it takes to succeed is going to be extremely critical for us to succeed.

At the same time, the world is looking to India and I can't help but quote Our Prime Minister's vision for a digital India where he actually said that, "What I dream is for the world to look at India for the next Big Idea." That is where we should be. We have myriad problems. Those Myriad problems require very Innovative low-cost solutions and that's where we can play to our strengths. Affordable Innovation is where we need to focus on and that's where the research incentives have to be directed. How do we get into affordable innovation that solves problems for the world.

We just had the eight billionth baby born yesterday. For 8 billion people in the world, healthcare challenges are a plenty. Today, no one can afford a million-dollar cell therapy or a gene therapy. We have to bring it down to more affordable levels and that's where India can do well. We need to innovate those affordable solutions for those 7 billion people. The 1 billion can possibly live in their little Cocoon of million-dollar treatments, but the 7 billion can't. Can we innovate and find solutions for those seven billion who then obviously will be used by the other billion, who are used to paying more for what we can pay less for.

So, I think those are some of the exciting opportunities we have and I think we at ABLE, ought to come out with these kinds of strategies that create this enormous BioEconomy, create these enormous opportunities and exciting ecosystem that can actually generate these new ideas for the future.

So, with that, I'd just like to end by saying, “this is what we should be aspiring for the $500 billion BioEconomy that is changing the world for the better that is bringing to the world transformative ideas and ideas that can actually be useful to a larger number of people on this planet than what it is today.”

IN THIS ISSUE

ABLE NEWS

ABLE 20th Anniversary 'Curtain Raiser' event

ABLE celebrated its 20th Anniversary 'Curtain Raiser' event on 16th November, 2022 at Shangri-La, Bengaluru. During the course of the last 20 years, ABLE proactively campaigned in understanding the broader beneficial aspects of biotechnology that is now propelling the BioEconomy of the country. This is now the trend in many countries. ABLE is proud of the overall development of the BioEconomy at large and the Biotech sector in particular in India. We had Dr Kiran Mazumdar-Shaw, Hon. Non-Executive Chairperson, ABLE delivering the ABLE vision 'ENVISIONING BT @ 2047, followed by panel discussions on key topics.

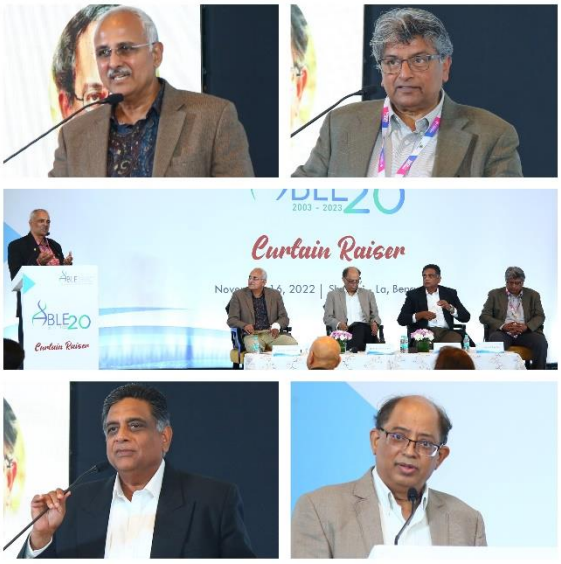
Mr GS Krishnan, Hon. President, ABLE talks on **ABLE@20 "The Journey so far"**

Mr GS Krishnan gave an overview on ABLE's journey in the past 20 years highlighting ABLE's focus areas on Advocacy initiatives, Sector development, Instituitional Support and ABLE regional chapters. He alsoemphasized on ABLE's journey since 2003, it's member accomplishments, ABLEmember successful startups and ABLE activities. Mr Krishnan also explained onhow the Industry has grown so far. India's biotechnology industry accounts for 12.5%growth in the global biotechnology market, Bio-pharmaceuticals being the largestcontributor followed by Bio-industrial, Bio-agri, CRO/Bio-IT/Research.

Dr PM Murali, Hon. President, Council of Presidents, ABLE talks on **"Granularity on the Road Ahead"**

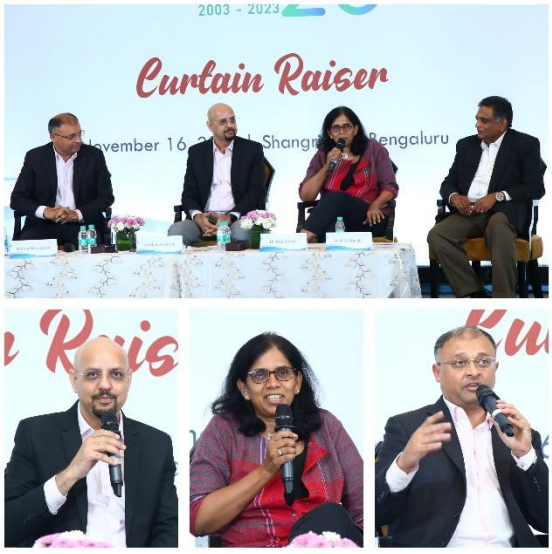
Dr PM Murali shared insights on "Granularity on the Road Ahead" to outsource ideas during this entire year from different regions and different places to come up with pathbreaking solutions in what we should advocate in future for funding, scaling up and how our industry can shape up in the coming future. He stated how ABLE has played an important role for all the biotech policies that have come from the state and the central governments till date. Dr Murali mentioned that ABLE will be focusing in the area of how companies grow, raise capital and get to the next step.

"Impressions" from ABLE Council of Presidents



The session was about the Impressions from ABLE Council of Presidents or the Past presidents since 2003. The Panelists were **Dr KK Narayanan**, Founder & Director - Sthayika Seeds; **Dr Vijay Chandru**, Director - Strand Life Sciences; **Dr PM Murali**, Chairman - Golden Jubilee Biotech Park & CMD - Jananom Pvt Ltd and **Mr Shrikumar Suryanarayan**, Chairman - Sea6 Energy. The session was moderated by **Mr Narayanan Suresh**, COO – ABLE. In this session, all the panelists shared their journey in ABLE and also visualized on how the biotech industry will grow in the coming years.

Panel Discussion on **“Investing in Biotech”**

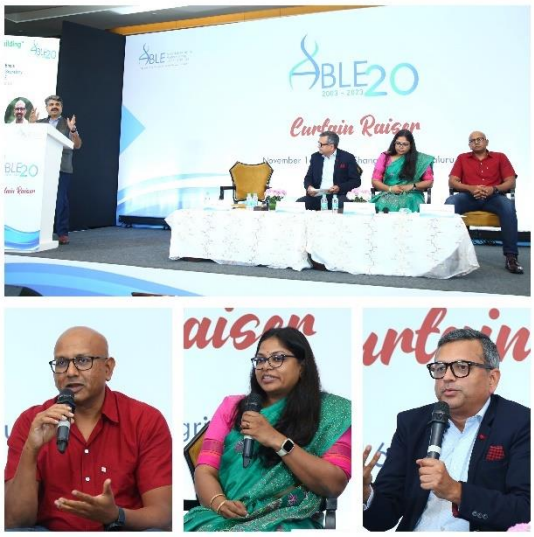


The session was moderated by **Dr PM Murali**, Hon. President, Council of Presidents – ABLE. The Panelists were **Mr Harsha Raghavan**, Founder & Managing Partner - Convergent Finance LLP & Strategic Partner - Novo Holdings; **Dr Manish Diwan**, Head - Strategic Partnership – BIRAC and **Dr Ritu Verma**, Co-Founder & Managing Partner - Ankur Capital Fund.

Panel Discussion on **“Leveraging Biotech Scale”**

The session was moderated by **Dr Anand Anandkumar**, Hon. Vice President & Treasurer – ABLE. The Panelists were **Dr Taslimarif Saiyed**, CEO & Director - C-CAMP; **Dr Jitendra Kumar**, MD - Bangalore Bioinnovation Centre and **Mr Ravi Sarangapani**, Senior Consultant & Mentor - Venture Centre.

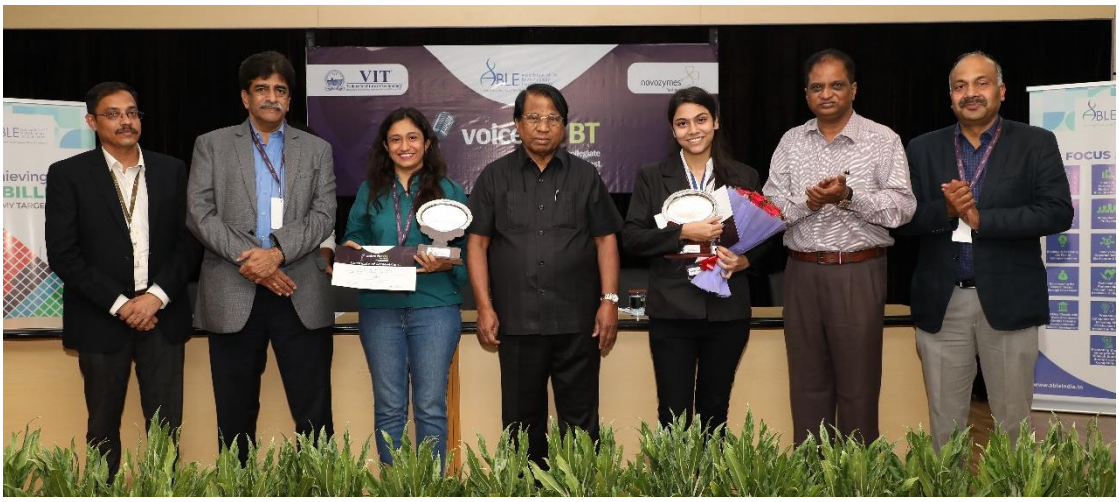
Panel Discussion on **“Capacity Building”**

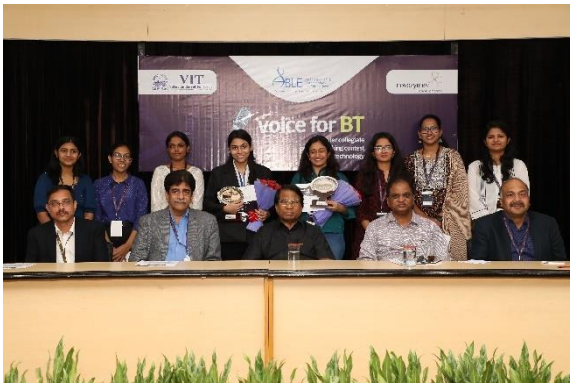


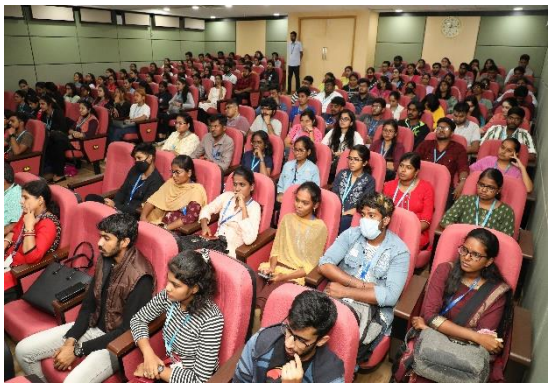
The session was moderated by **Mr Ravi Bhola**, Hon. General Secretary – ABLE. The Panelists were **Mr Naveen Narayanan**, Chief Human Resources Officer (CHRO) - Biocon Biologics; **Ms Sowmya Shresth**, Head of People & Organization - Novozymes India and **Mr Subramani Ramachandrappa**, Founder - Fermbox Bio Inc, Founder & Board Member - Laurus Bio Pvt Ltd.

‘voice for BT’ 2022 - National Finale

The National finale round of the 10th edition of ‘voice for BT’ 2022 was held on 2nd November at Vellore Institute of Technology, Vellore, Tamil Nadu**.** First two winners from each zone of India (North, South, East, West) were selected to participate in the final round. They spoke on topics related to Carbon credits & Synthetic biology. The winner were Arundhatiba Dharmeshsinh Jethwa from Atmiya University, Rajkot, Gujarat & the 1st runner up was Dyuti Mitra from NIT, Durgapur, West Bengal.







Bengaluru Tech Summit 2022

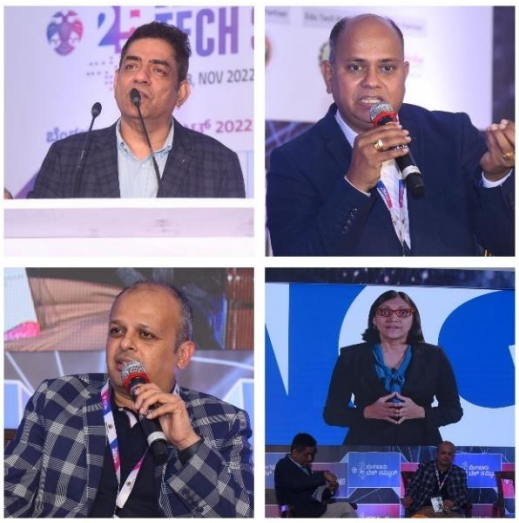
The 25th edition of India's flagship technology event and Asia's largest tech summit, **Bengaluru Tech Summit 2022** was held from 16-18 November in Bengaluru, Karnataka. The event saw an overall participation of 32 countries, 405 speakers, 9356 delegates, 585 exhibitors, 25,738 registered business visitors, over 50,000 footfalls at the Expo, and the signing of 12 MoUs. Parallel sessions on ITE, DeepTech and Biotech were going on during the conference.

ABLE as the Knowledge partner for the event had curated all the Biotech sessions. The programme gathered worldwide Industry Leaders, Top Research Think Tanks, Academics, Policymakers and explored new frontiers in biotech research and business. Some of the key focus topics included Historical perspectives on mRNA, Ignite Foundation of Life Sciences, Investing in NextGen MedTech, Vaccine Equity, Cellular Immunotherapies, Moving from Primary to Secondary Agriculture, Industrial Biotechnology, Agri Biotechnology. The sessions at Biotech Hall were:

Genomics revolution 2.0 and its implications

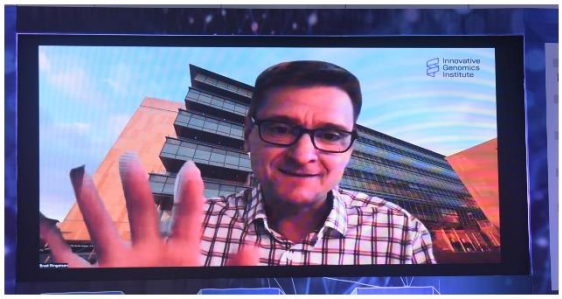
Dr Joydeep Goswami, Senior Vice President, Corporate Development and Strategic Planning, Illumina Inc. was the keynote speaker for the session. The session was moderated by **Dr. Vijay Chandru**, Co-Founder & Director, Strand Life Sciences. The speakers were **Dr Ramprasad V L**, Chief Executive Officer, MedGenome Labs Ltd; **Dr. Ramesh Hariharan**, CEO & Co-Founder, Strand Life Sciences and **Dr. Bratati Kahali**, Associate Professor Centre for Brain Research, IISc. You can watch the recording for the session **here**.

Smart Supply Chains in Biopharma



The session was moderated by Lalith Kishore, COO, C-CAMP InDx. The Speakers were **Mrinalini Lakshminarayanan**, Global Executive Director - Digital Operations Innovation, Ingram Micro; **Sameer Amte**, Managing Director,Life-Science and Retail Industry Lead India, Accenture and **Ravi Kalla**, IT Head, Anthem Biosciences.
You can watch the recording for the session **here.**

Gene Editing and Agriculture

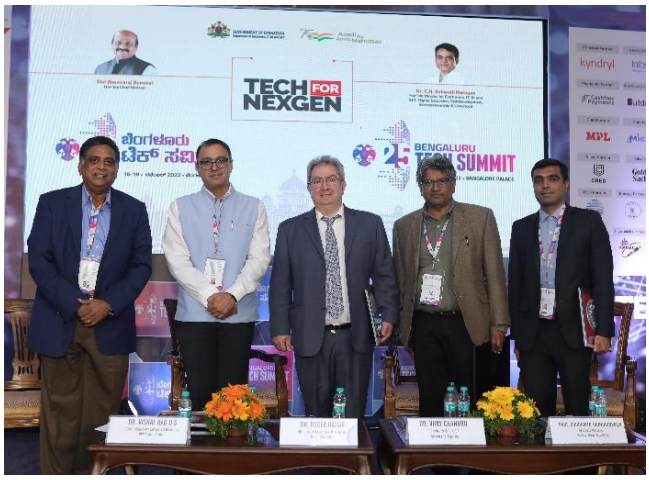


The Lead talk for the session was **Dr. Brad Ringeisen**, Ph.D., Executive Director Innovative Genomics Institute, UC Berkeley. The Speakers were **Dr KK Narayanan**, Director & CEO, Agrigenome Labs and **Prof CS Prakash**, Dean, Tuskegee University.
You can watch the recording for the session **here**.

One Health and Pandemic Prevention

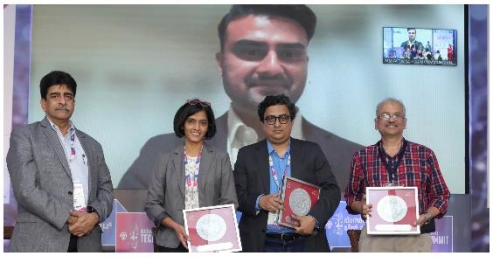
The Lead talk for the session was **Sindura Ganapathi**, Visiting PSA Fellow, Office of the Principal Scientific Advisor to the Government of India. The session was moderated by **Raghu Dharmaraju**, President, ARTPark and the Speakers were **Dr. Farah Ishtiaq**, Principal Scientist, Tata Institute for Genetics and Society; **Dr H Paramesh MD**, Visiting Professor Divecha Center for Climate Change IISc; Founder Chairman, Lakeside Education Trust; **Dr. Varsha Shridhar**, Director and Co-founder, Molecular Solutions Care Health LLP and **Dr. Thrilok Chandra**, Special Commissioner, BBMP.
Here is the recording for the session.

The Future of Genomic Medicine



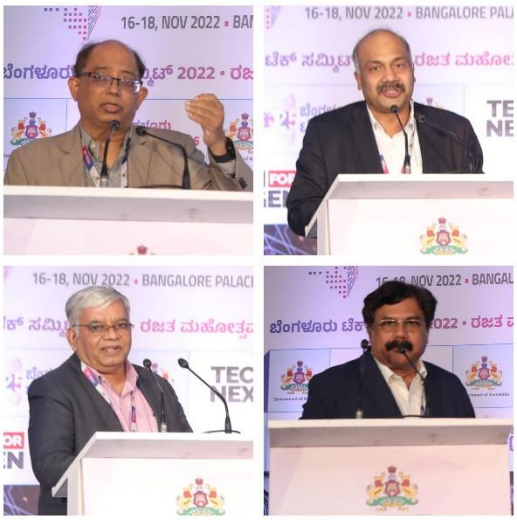
The session was moderated by **Dr. Vishal Rao**, U S, Director - Head Neck Surgical Oncology & Robotic Surgery, Dean - Centre of Academics & Research, HCG Cancer Centre. The Speakers were **Dr. Roger Hajjar**, MD - Head of Research & Development, Ring Therapeutics; **Dr. Arun Shastry**, Chief Scientific Officer, Hanugen Therapeutics Private Limited and **Prof. Siddharth Jhunjhunwala,** Associate Professor, Indian Institute of Science. **Here** is the recording for the session.

Bio Industrial to boost BioEconomy - Synthetic Biology



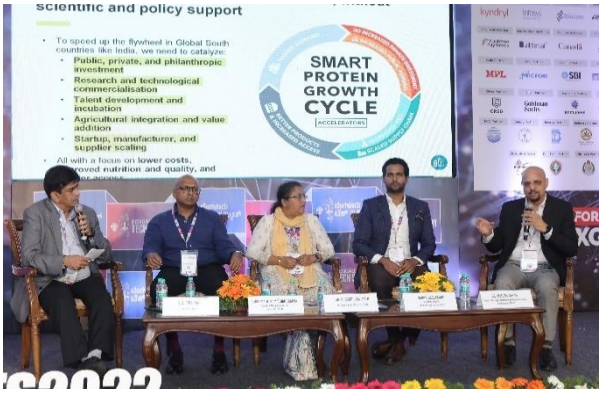
Dr. Anand Ranganathan, Professor, International Centre for Genetic Engineering and Biotechnology was the keynote speaker for the session. The session was moderated by **Dr Ezhil Subbian**, Co-Founder & CEO, String Bio Pvt Ltd. The speakers were **Dr. Anindya Bandyopadhyay**, Vice President R&D, Reliance Industries Ltd; **Dr H. S Subramanya**, Director, Institute of Bioinformatics and Applied Biotechnology and **Eswar Iyer**, Co-Founder and Chief Technology Officer, Aikium. You can watch the session recording **here**.

Bio Industrial to boost BioEconomy - Bioenergy & Renewable Biochemicals



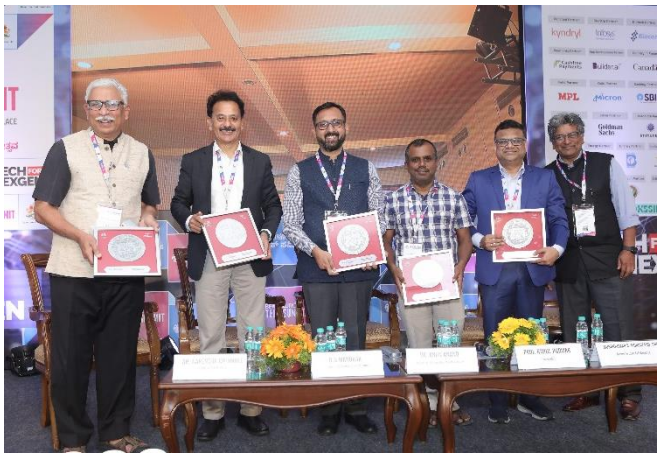
The Keynote speaker for the session was **Shrikumar Suryanarayan**, Chairman & Managing Director, Sea6 Energy Pvt. Ltd. The session was moderated by **Krishna Mohan Puvvada**, Regional President Business Director, Novozymes South Asia Pvt. Ltd. The speakers were **Dr. Pramod Kumbhar**, President & CTO, Praj Industries; **Dr. Santanu Dasgupta**, Senior Vice-President, Head of Algae to oil and Synthetic Biology R&D, Reliance Industries Limited and **Dr. VV Hemanth Giri Rao**, Senior Manager - R&D, Sea6 Energy Pvt. Ltd.. The recording for the session is **here**.

Bio Industrial to boost BioEconomy - Smart Protein



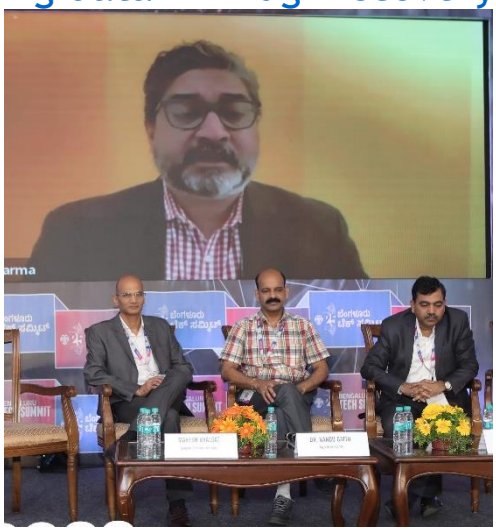
The session was moderated by **G. S. Krishnan**, President, ABLE. The speakers were **Dr. Bharathi Salimath**, Director, Sanorva Biotech Pvt Ltd; **Subramani Ramachandrappa**, Founder & Managing Director, Laurus Bio Pvt Ltd; **Varun Deshpande**, Managing Director, The Good food Institute India; **Dr Manish Diwan**, Head - Strategy Partnership & Entrepreneurship Development, BIRAC and **Dr. Bharathi Salimath**, Director, Sanorva Biotech Pvt Ltd. The recording for the session is **here**.

Biotech Future: Cell & Gene Therapy



The Lead talk for the session was done by **B N Manohar**, MD & CEO, Stempeutics Research Private Limited. The session was moderated by **Dr. Narendra Chirmule**, CEO, Director, Co-Founder- Symphony Tech Biologics, Adjunct Professor (faculty)- University of Pennsylvania. The Speakers were **Dr Arun Anand**, Chief Operating Officer and Board Director, Immuneel Therapeutics Private Limited; **Prof Rahul Purwar**, Associate Professor & Founder, ImmunoACT and **Mohankumar K. Murugesan** PhD, Scientist -E, Centre for Stem Cell Research (a Unit of inStem, Bengaluru), Christian Medical College Campus.
Here is the recording for the session.

Big data in Drug Discovery



The session was moderated by **Mahesh Bhalgat**, Chief Operating Officer, Syngene International Limited. The Speakers were **Dr. Nandu Gattu**, Vice President, Eagle Genomics Ltd; **Panna Sharma**, CEO & President, Lantern Pharma and **Dr. Kishan Gurram**, Founder, Managing Director Sravathi AI Technology Pvt Ltd.
Here is the recording for the session.

How to reach the $100 billion Biological Manufacturing opportunity for India

The session was moderated by **N Suresh**, Chief Operating Officer, ABLE. The Speakers were **Vikas Katial**, Head Manufacturing operations Biologics, Syngene International Limited; **Dr. Jaby Jacob**, Sr. President, Bharath Serums and Vaccines Ltd.'; **Srinivasan Raman**, Senior Vice President & Global Head of Manufacturing Sciences & Technology (MSAT), Biocon Biologicals Limited and **Dr. S D Ravetkar**, Director, Serum Institute of India.
Here is the recording for the session.

Bio investing: Public-Private Partnerships



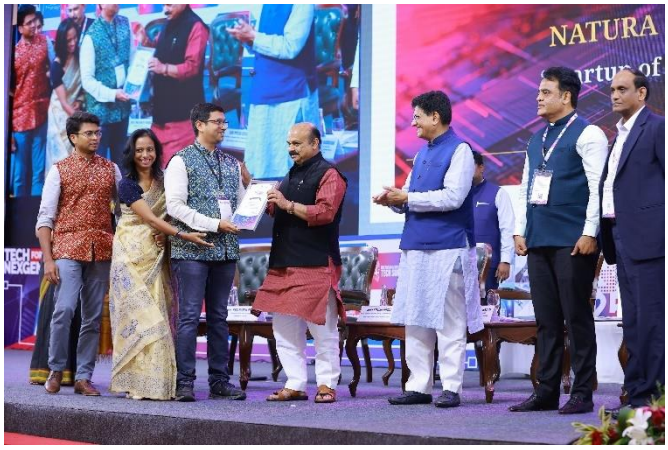

The Lead talk for the session was **Dr. Radha Rangarajan**, Director, CDRI. The session was moderated by **Dr. P. M. Murali**, Chairman & Managing Director, Jananom Pvt. Ltd. The Speakers were **Clarence Andre John Anthony**, Partner, Trilegal and **Sanjeev Yamsani**, Partner, VenturEast.
Here is the recording for the session.

SMART BIO AWARDS 2022

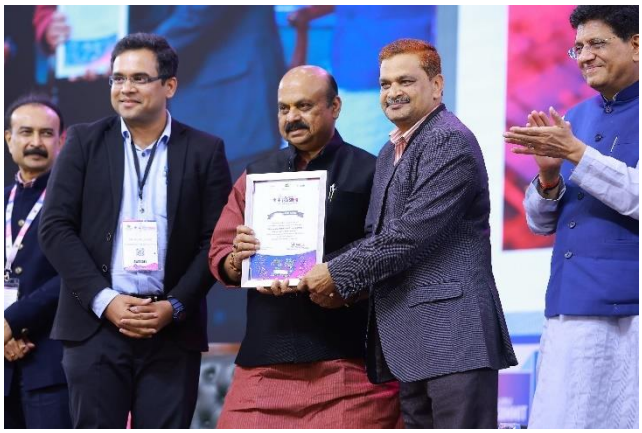
The Smart Bio Awards have been instituted by the Department of Electronics, IT, BT and S&T, Government of Karnataka with the purpose of recognizing biotechnology firms that have shown dynamic leadership and exciting technologies, standing out for their contributions in their chosen areas in Biotech.

ABLE was entrusted with the selection process. Nominated companies were evaluated by a jury consisting of a leading panel of experts from the Indian entrepreneurship ecosystem, investors, policy makers and respected business leaders.

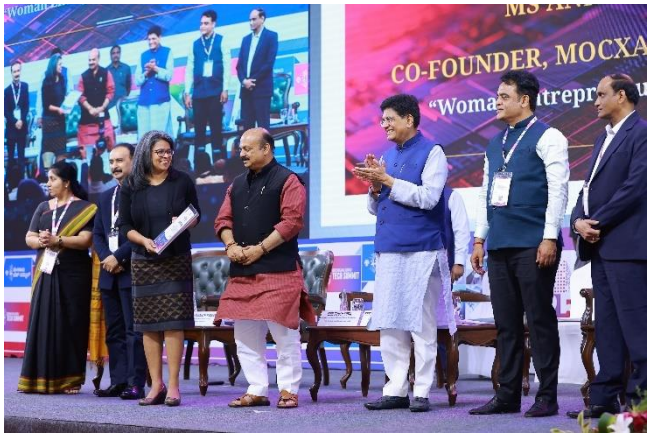
The winners for each of the category were:



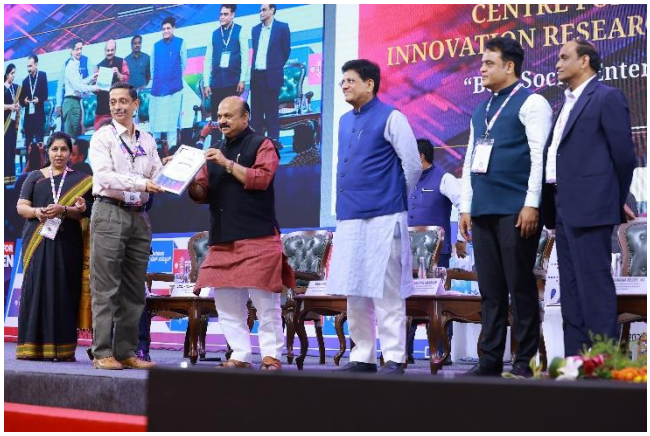
Nature Crop Care that is working on smart next generation climate smart sustainable agri innovations for increasing smallholder farmers income won the **Startup of the Year** award.



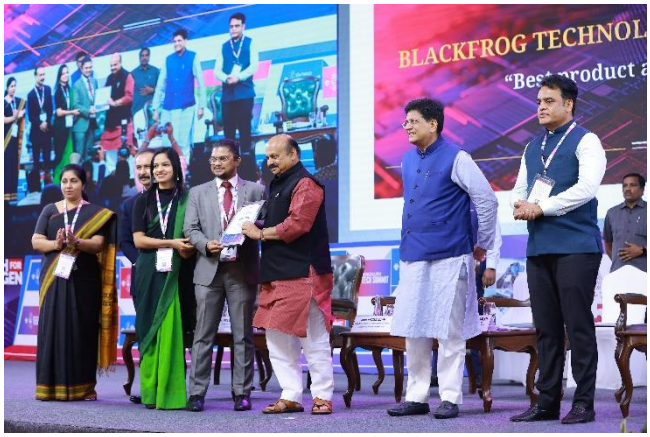
Stempeutics Research an advanced clinical stage Biotech Company focused on developing and commercializing novel therapeutics based on adult stem cells won the **Innovator of the Year** award.



Mocxa Health, an Indian healthcare startup that is developing advanced technology-based solutions for the diagnosis and monitoring of neurological and mental health conditions like seizures, epilepsy, sleep disorders, movement and gait disorders such as Parkinsonâ€™s disease won the **Woman Entrepreneur of the Year** award.



Centre for Incubation, Innovation Research & Consultancy, a multi-disciplinary research, innovation and incubation centre being a joint initiative of Sri Sharada Peetham Sringeri and Jyothy Institute of Technology won the **Best Social Enterprise/ Institute** award.



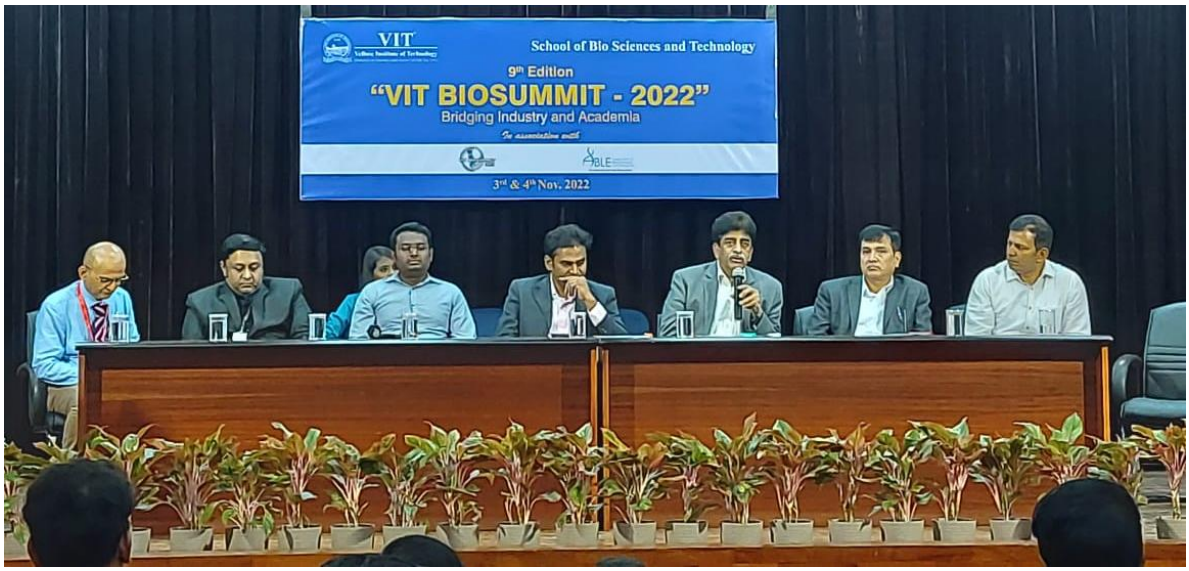
Blackfrog Technologies Private Limited, a technology startup company that seeks to improve the efficiency of immunization supply chains. They have developed patented technologies for precision cold-chain and vaccine traceability systems won the **Best product against COVID-19** award.

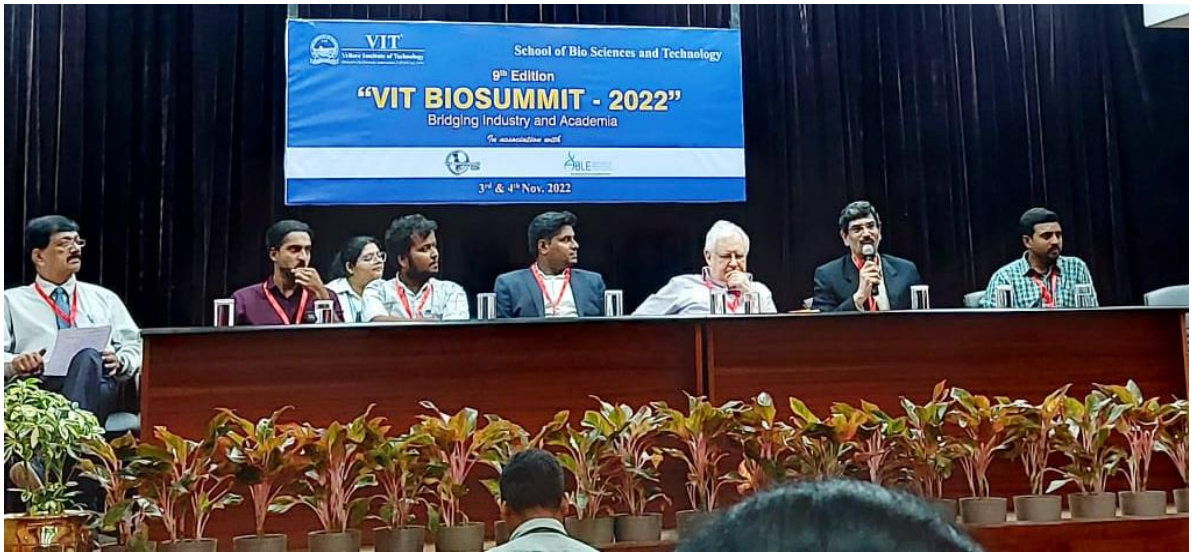
VIT BIOSUMMIT 2022

VIT Biosummit 2022 was organized by Vellore Institute of Technology in association with ABLE on 3-4 November, 2022 to bridge the industry and academia. It brought together leaders from government, academia and industry for compelling discussions and comprehensive coverage on industrial employability, skill set requirements, innovative thinking and higher education.

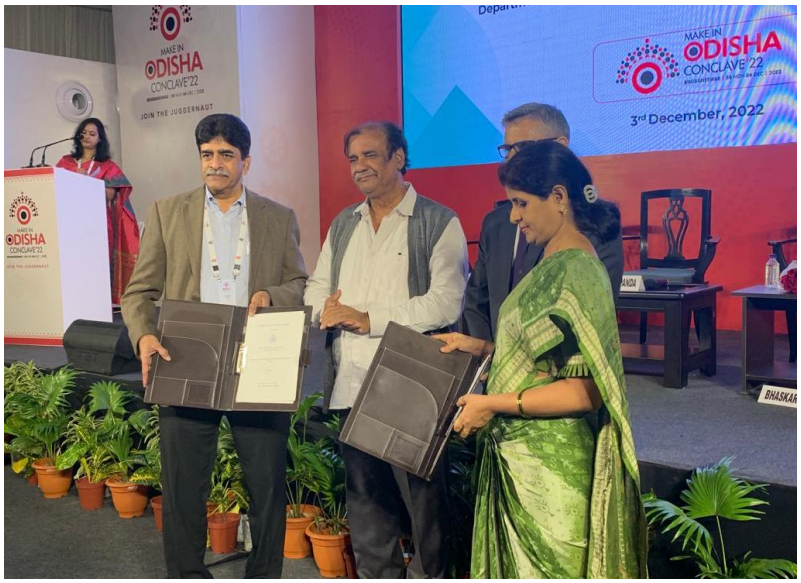
Special address was given by GS Krishnan, President, ABLE. Mr Krishnan also was a part of the panel discussion on “Priming students towards Industry”.

Dr Balasubramanya S, General Manager, ABLE was also a part of the panelist in the session “Placement opportunitiesfor life science graduandsin the post pandemic world”.





ABLE signed MoU with the Government of Odisha



The Make In Odisha Conclave'22 is the flagship investor summit of the Government of Odisha that was held in Bhubaneswar, Odisha from November 30 to December 04, 2022. The Conclave was a unique opportunity to understand Odisha's policy and regulatory environment, and the vast existing and emerging business opportunities across sectors.

During the conclave, the Department of Science and Technology of Government of Odisha signed a Memorandum of Understanding (MoU) with ABLE to bring Biotech Industries to Odisha for setting up of their enterprises, to mentor & nurture Biotech startups, bring International knowledge Groups to Odisha for investment purpose and to prepare a conducive Biotech Policy for Odisha.

'Make in Odisha Conclave 2022'reinforces Bio-economy of the State by hosting sessions on Emerging landscape of Biotechnology in Odisha

On Day three of 'Make in Odisha Conclave 2022', one of the largest investment summits in India, sectoral session on Biotechnology was held in presence of investors and entrepreneurs. About 170 participants, including entrepreneurs, Government officials, and academicians took part in the session. The Session deliberated on competitive advantages of Odisha in the promising areas of Biotechnology such as agriculture, marine and diagnostics.

With Government support under Biotech Policy 2018 and IPR 2015, Bharat Biotech through its Anchor Tenant Sapigen BiologiX Pvt Ltd has invested more than ₹500 Cr for manufacturing various vaccines in Odisha Biotech Park at Andharua. They have also committed to invest another ₹700 Cr for expanding its scope.

Speaking about the abundant opportunities in the state, Shri Ashok Chandra Panda, Hon'ble Minister of Science & Technology, Government of Odisha said, "Odisha is a unique littoral state with abundant biodiversity. The 480 km long coastline, rich mangrove and

swamplands in Bhitarkanika, brackish water lakes like Chilika, forests like Simlipal and medicinal plant rich Mahendragiri give ample opportunity for Biotechnology explorations. The myriad agro-climatic zones and natural resources of the state offer tremendous opportunity, particularly in the fields of agriculture, food processing and floriculture along with Marine Biotech."

Citing the grand success of the Millets Mission in the state which has been wholeheartedly supported by the Hon'ble Chief Minister, Panda said, "Biotechnology offers solutions to a range of issues concerning health to food security. We are going to offer all kind of support to Biotechnology startups."

After successful partnerships with Narayan Hrudalaya, L V Prasad Eye Institute, Care Hospitals, Ziqitza Healthcare Ltd., Glocal Healthcare, Tata Trust, CDAC, etc. providing specialized healthcare services in various formats, the Government is keen to partner with private players to fulfill the unmet demand in the healthcare sector.

"Keeping in mind the importance of the sector, the Govt of Odisha in its IPR 2022 has identified Biotechnology as a 'Thrust Sector'. All eligible Biotechnology ventures will be given adequate Govt handholding with support offered by various policies, ranging from Biotechnology policy to Startup policy, to set up enterprises and grow. With industry academia linkage, collaborative environment, world class industrial facilities, network of angel & venture capitalist funds and govt support, the sector is poised to grow. There will be opening of opportunities for many startups with the positive biotechniology climate in the state." Shri Panda said.

The Hon'ble Minister said institutes like KIITs and ILS have been allotted Rs 2 Crores each to take forward further research and upgradation in Biotechnology. Moreover, the Govt has tied up with the Utkal University and Odisha University of Agriculture and Technology (OUAT) for the betterment of Biotech Sector in Odisha. "Bhubaneswar will become a vibrant Biotechnology hub in the coming years," Shri Panda said.

Commissioner-cum-Secretary, Science and Technology Department, Shri Bhaskar Jyoti Sarma and Joint Secretary, Science, and Technology Department, Ms. Puja Mishra also spoke on the occasion. Deputy Director, Department of Science and Technology, Sashikant Dash proposed the vote of thanks.

The plenary session was followed by panel discussions on 'Bio-pharma' and 'Agriculture & Industry' which were participated by industry leaders, entrepreneurs and various stakeholders.

Dr. Anu Acharya, Founder Mapmygenome, Dr. Shesheer Kumar, Foundde-Huwel Life Sc, Hyderabad, Dr. Nusrat Sanghamitra Jahan, Founder CyGenica, Pune and Dr. Amulya Panda, Associate Director, Panacea Biotech spoke at the panel discussion on Bio-pharma. The discussion was moderated by Dr. PM Murli, President, Council of Presidents AMBLe & Chairman Golden Jubilee Biotech Park for women, Chennai.

The speakers at the Panel Discussion on Agriculture included Mr. GS Krishnan, President, ABLE, Bangalore. Dr. Manish Diwan, Head- Strategic Partnership & Enterpreneurship Development (BIRAC), New Delhi, Dr. KK Narayanan, Founder Kottaram Agro Foods Pvt Ltd, Bangalore and Mr. Krishna Prasad, Sr VP, Shilpa Biologicals, Dharwad. It was moderated by Dr. Mrutyunjay Suar, Chairman, BCKIC, Bhubaneswar.

Source: www.orissadiary.com

Capacity Building Workshop for Startups working on Rural Technology & Rural Entrepreneurship Development

ABLE with support from the Department of Electronics, IT & Bt, Government of Karnataka is coordinating and collaborating with other ecosystem partners in the State to conduct a series of Capacity Development Workshops for Startups working on sectors focused on Rural Impact and Renewable Energy, Climate Change and Sustainability.

ABLE in collaboration with JSS Science & Technology University, Mysuru is conducting the Capacity Building Workshop for Startups working on "Rural Technology" and promote "Rural Entrepreneurship" on Saturday, 10th December 2022 at Mysuru from 10.30 AM to 01.30 PM followed by a networking lunch.

Please register if you interested to join the workshop http://bit.ly/3gQHXxB

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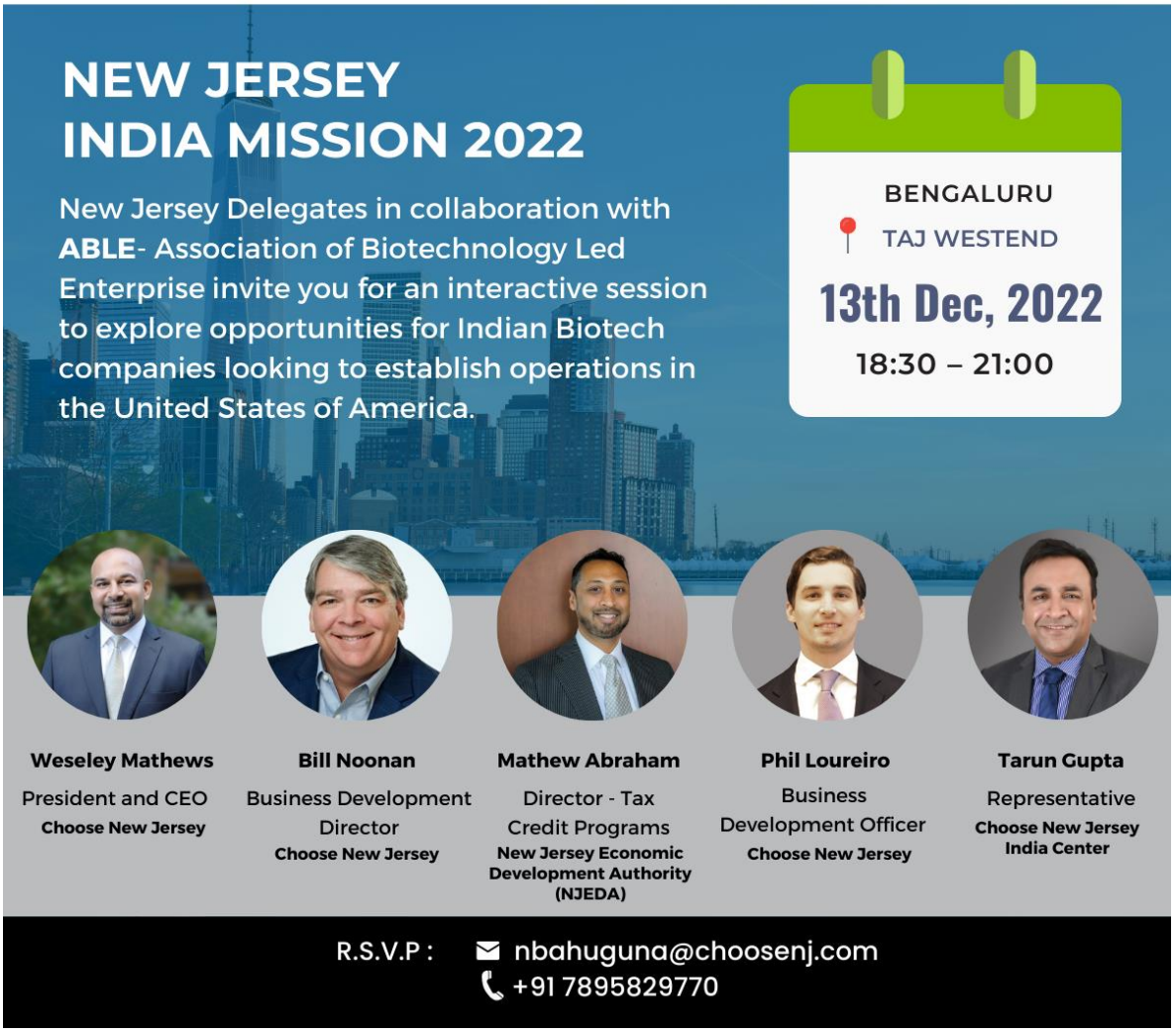
ABLE Association of Biotechnology Led Enterprises
The collective face of the Indian Biotech Industry



ABLE has signed a MOU with BioNJ to encourage member companies' to collaborate and explore the possibilities of expanding their business in New Jersey, USA.

We have a high-level delegation lead **Mr. Weseley Mathews, President and COO**, **Choose New Jersey** visiting Bengaluru under the **New Jersey Indian Mission 2022**. The delegation is interested to have an interactive session with the Indian Biotech companies to explain available opportunities and also facilitate companies looking to establish/expand operations in the New Jersey, USA. The representatives will include members of the Economic Development Office of the State, attorneys, and other stakeholders.

This is an invitation-only event, offering networking and a roundtable discussion. The formal invitation to the event will be sent separately.
If interested, please RSVP to Dr Balasubramanya S mailto:gm@ableindia.org.in

ABLE holds a Special General Meeting on 11th November 2022

A Special General Meeting of ABLE members was held on 11th November 2022 to discuss the need to amend the bylaws of the organization. For the last few years, many members have been voicing the need to make suitable changes in the bylaws of the organization that has been in existence since its launch in 2003 and make it contemporary. And reflect the changing needs of the fast-growing biotechnology industry. The meeting was held at ABLE office premises in Koramangala, Bengaluru.

The Executive Council discussed this request and approved the holding of a Special General Meeting of members to discuss the proposal. Members discussed at length the pros and cons of making significant amendments to the bylaws. A subcommittee comprising some of the former Presidents and office bearers too has been discussing the possible changes in the bylaws.

A resolution to seek members approval to make changes in the bylaws was proposed by Dr Anand Anandkumar (Bugworks Research). The proposal was seconded by Dr Shama Bhat (Bhat Biotech). After detailed discussions, members passed the resolution to make changes in the bylaws unanimously. The office bearers will convene another Special General Meeting within 30 days (scheduled for December 9, 2022) the proposed amendments to the bylaws.

KEY BIOTECH EVENTS IN NOVEMBER 2022

IN THIS ISSUE

Shreehas Tambe Appointed Managing Director & CEO of Biocon Biologics

Biocon Biologics Ltd (BBL), a subsidiary of Biocon Ltd, announced that **Shreehas Tambe,** Deputy CEO of Biocon Biologics**,** has been appointed as the **Managing Director and CEO** of the Company. Mr Tambe will lead BBL in realizing its goal of being a global biosimilars leader.

Mr Tambe takes over from Dr Arun Chandavarkar, who will continue to serve as a non-Executive, non-Independent Director on the Board of Biocon Biologics.

Welcoming Mr Tambe, **Kiran Mazumdar-Shaw, Executive Chairperson, Biocon & Biocon Biologics,** said, *"I am extremely pleased that Shreehas is taking on the responsibility of leading Biocon Biologics as MD & CEO at a time when the company is gearing up for global leadership in biosimilars with the closing of the Viatris acquisition. His demonstrated track record of business success, deep technical and operational expertise provide him with proven leadership capabilities to assume this role. Shreehas will be aided by a highly experienced Executive Leadership Team in building a future-ready, world leading biosimilars player and a well-recognized global brand that is committed to impact global healthcare. I extend my best wishes to him for a successful journey ahead."*

BBL has successfully completed its multi-billion-dollar (USD) acquisition of the global biosimilars business of its partner Viatris Inc. in November 2022. BBL and Viatris have obtained all applicable approvals from key global regulators including the U.S. Federal Trade Commission, the Competition Commission of India and the Reserve Bank of India, and its investors.

Effective from November 29, 2022, BBL will recognize the combined revenue and associated profits from the acquired products, a step-up from the existing profit share arrangement.

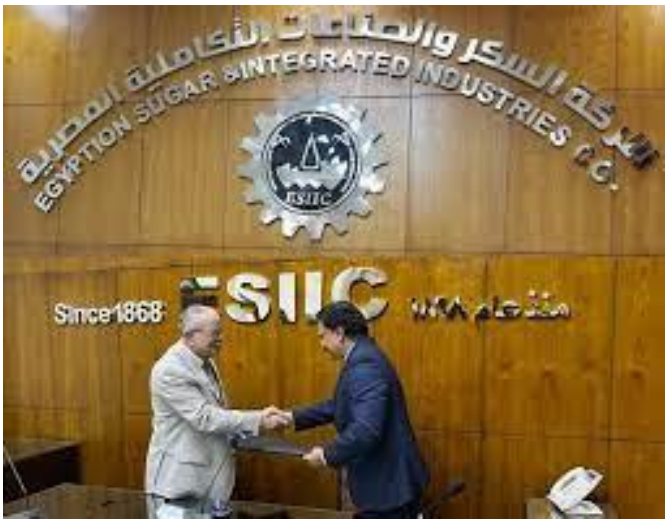
Bharat Biotech gets CDSCO approval for use of Intranasal Vaccine for Covid-19

ABLE Member, Bharat Biotech International received approval from the Central Drugs Standard Control Organisation (CDSCO) for iNCOVACC use under Restricted Emergency Situation for ages 18 and above, in India, for heterologous booster doses.

Bharat Biotech takes a significant step forward in its fight against Covid-19. The intranasal Covid-19 vaccine iNCOVACC has been given the nod by the National drug regulator to be used as a heterologous booster. The vaccine has got approval for restricted use in emergency situations on those aged 18 years and above, after two doses of either Covishield or Covaxin. It becomes just the second approved covid-19 vaccine in India after Biological E's Corbevax.

Dr. Krishna Ella, Chairman & Managing Director, Bharat Biotech, said, "This is a great achievement for us and the global scientific community to enable nasal administration of COVID vaccines. Despite the lack of demand for COVID vaccines, we continued product development in intranasal vaccines to ensure that we are well-prepared with platform technologies for future infectious diseases. We thank the Ministry of Health, CDSCO, Dept of Biotechnology, Govt of India, Technology Development Board, and Washington University, St. Louis, for their support and guidance."

Praj, ESIIC partner to accelerate bioeconomy in Egypt



Pune-headquartered ABLE Member, Praj Industries (Praj) has signed an MoU with Egyptian Sugar and Integrated Industries Company (ESIIC) of Egypt. As a part of this MoU, both parties will drive sustainable climate actions to combat evils of climate change. India's most accomplished industrial biotech company Praj and Egypt's largest sugar sector company ESIIC have come together to set up first and second Generation ethanol projects in Egypt. Praj and ESIIC will develop infrastructure, help formulate policy framework, and create awareness etc. to mainstream Bioeconomy. Sugarcane bagasse and rice straw are envisaged to be feedstock for conceiving Egypt's first second Generation ethanol project. Low carbon ethanol produced from these 2G ethanol plants will be supplied as feedstock for production of specialty chemical. This sustainable biochemical will reduce dependency on the chemicals derived from fossil route. Bioethanol supplied as chemical intermediate is based on circular bioeconomy principle that will reduce GHG

emissions by recycling of carbon. Dr Pramod Chaudhari, Founder Chairman, Praj Industries, said, “We are delighted to partner with ESIIC who are exploring use of ethanol beyond transportation application. To combat evils of climate change, harnessing cleaner greener technologies is an imperative as sustainable climate action. I am confident that, this partnership for furthering bioeconomy will accelerate energy transition as well as give boost to journey towards carbon neutrality.”

Yara India ties up with Sea6 Energy for Biostimulant AG

Yara India, which is part of the Oslo-based, Norwegian multinational Yara International, has tie up with Bengaluru-based start-up and ABLE Member Sea6 Energy, to market and distribute its biostimulant AG Boost in India.

AG Boost is being launched under the umbrella brand Nourish and fits well into the Integrated Nutrient Management (INM) program. It is a technologically advanced and patented biostimulant that aims to bolster agricultural productivity and improves fertilizer use efficiency and nutrient uptake, resulting in better productivity for the farmers. As per the agreement, Yara India will market AG Boost across the country through the distribution network of its crop nutrition business, which has over 3,500 dealers and 980 YCNCs (YARA Crop Nutrition Centers) across 18 states.

ASSOCIATION OF BIOTECHNOLOGY LED ENTERPRISES (ABLE)

Comments and questions are welcome and should be addressed to:

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