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Nurturing Innovation: Empowering India

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The National Biotechnology Development Strategy 2015-20 which was unveiled in the year 2015 aims to establish India as a world-class bio-manufacturing hub. It intends to launch a major mission, backed with significant investments, for the creation of new biotech products, create a strong infrastructure for R&D and commercialization, and empowers India's human resources scientifically and technologically.

This strategy has a target to turn biotechnology into a US $100bn industry by 2025 and organization like Biotechnology Research Assistance Council (BIRAC) is playing a very important and active role in achieving the same.

BIRAC recently celebrated its 7th foundation day with the theme of ‘Nurturing Innovation: Empowering India’. It was attended by over 300 participants including innovators, policy makers, investors, academic researchers, startups and entrepreneurs. The Foundation day also witnessed the commemoration of young innovators and scientists who made significant contributions to the fields of hygiene and sanitation and the reduction of the disease burden in India.

Dr. Renu Swarup, Secretary, Department of Biotechnology & Chairperson, BIRAC, speaking on the occasion said “Biotechnology holds enormous potential for impacting economic growth of the Country, which has been successfully demonstrated by BIRAC over these 7 years. Today across the country we have witnessed a growing demand for new innovation and these are technologically empowering the country. I am confident that India which has taken on a very strong leadership position will be a front runner in the Global ecosystem. The key to success is scalability and sustainability”.

Dr. Chris Karp, Director, Discovery & Translational Sciences, Bill & Melinda Gates Foundation said, “Our common goal is to harness (catalyze, source, nurture) innovation to develop and drive to impact transformative tools to address global health and developmental inequity. In terms of BIRAC’s motto- Ignite, Innovate, Incubate….Impact”.

The 7th Foundation Day also saw the launch of various innovative products by Dr. Rajiv Kumar, Vice Chairman NITI Aayog. While launching the same, he said “BIRAC has done excellent work in being able to connect and communicate with upcoming innovators. It is important to not just function as the fund provider, but to handhold and aid young innovators to develop and scale their innovations for improved health outcomes in India”.

The products that were launched include:

Smart Scope by Periwinkle Technologies Pvt. Ltd.

Founded by Veena Moktali, a Pune based start-up Periwinkle Technologies is dedicated to enhancing medical diagnostics and care by designing innovative products that use technology. Smart Scope by this start-up has been designed for doctors to perform routine cervical health checkups in women. The clinical validation of the device has been done by Tata Memorial Centre, Mumbai and Deenanath Mangeshkar Hospital & Research Centre Pune. The development of this product was supported through BIRAC-MEITY-IIPME scheme

When asked about her innovation, Veena Moktali said, “This has the value add of providing a single-visit and highly accurate (90%+ sensitivity) screening test for cervical cancer and related high risk abnormalities which many women are vulnerable to because of hormonal changes. Every year around the world, 1B+ women can be screened with this. When compared to the prevalent lab-based techniques and other cervical diagnostic equipment, the Smart Scope® has advantages in terms of immediateness of result, ease of use by semi-skilled staff, expert-independent procedure, referral mechanism for complete follow up, portability, and independence of other infrastructure needed.”

“It will reduce the mortality due to cervical cancer - currently at 300K worldwide deaths every year - by making early detection of precancerous changes possible at OPD level. It will give women a chance to have better reproductive health through access to an easy and affordable test at a local primary healthcare provider (public and private). This is especially important since there is no effective cervical cancer screening test available anywhere in the world today”, she added.

GOsteri, MicroGO LLP

MicroGO was founded by Rachna Dave who believes that identifying the right problems is more challenging than finding solutions and these solutions can be achieved by designing simple and frugal technologies. Their innovative technology ‘ GOsteri’ is on-the-go surgical sterilization solution. It disinfects via gaseous form of surgical sterilant chlorine dioxide. It does not require continuous use of power or steam. The development of this product was supported through BIG scheme.

When asked about her innovation Rachna Dave said, “It is portable, easy to carry and use and can perform sterilization on the go. One can place the surgical instruments activate the device and head towards the destination by the time he/she reaches, the sterilization is complete. Since it does not require any power or water it can even sterilise at any resource limited areas or in remote locations.”

“Our healthcare needs access to safe surgical sterilization, lack of which drives up the healthcare infection rates. Inadequate sterilization also contributes to the spread of HIV and other diseases that spread via contact through bodily fluids. At present we do not have any technology that is portable and can sterilize surgical instruments on-the-go. With 70% of our population in rural areas we need a field deployable, portable, reliable, durable, affordable, non-steam equipment that can perform surgical sterilization even in scarce resources”, she added.

Poorti by Aarna Biomedical Products Pvt. Ltd

Aarna Biomedical Products which is a Delhi based start-up is the brainchild of Dr. Pawan Mehrotra. After years of cancer research work in England and discovering novel human proteins involved in cancer progression, Dr. Mehrotra returned to India in 2012 to join The Centre for Chemical Biology and Therapeutics at National Centre for Biological Sciences, Bengaluru, India – a joint initiative of the University of Cambridge, United Kingdom and the Department of Biotechnology, Government of India. His work revolved around discovering new therapeutic interventions for breast cancer patients. As he visited the oncology OPDs, he noticed women wearing sarees draped on either the right or the left side. This lead him to innovate a Post-mastectomy rehabilitation kit named “Poorti” comprising of silicon breast prosthesis, covers and post mastectomy brassieres of different sizes together with patient information forms and brochures. The development of this product was supported through BIG scheme.

ArmAble by BeAble Health Pvt. Ltd

BeAble Health is a spinoff from the first batch of fellowship in Healthcare Entrepreneurship at the Center for Healthcare Entrepreneurship (CfHE) – IIT Hyderabad. BeAble Health works towards enabling health and lives through the convergence

of good design and technology.

'ArmAble' is their first product and is aimed at solving a pressing need for intensive, engaging and regular rehabilitation therapy for Upper Limb. It is aimed at conditions such as Cerebral Palsy, Multiple Sclerosis, Traumatic Brain Injury, Fracture and Frozen shoulder. The development of this product was supported through BIG scheme.

Speaking about ‘ArmAble’, Habib Ali, a Biomedical Engineer and a CfHE Fellow who co-founded BeAble, said, “The constant mentoring and support by CfHE helped us identify a strong need and conceptualize an appropriate solution. This strong research foundation and a significant grant from BIRAC under the guidance of IKP Hyderabad have accelerated our journey to the product. The ecosystem enablers have played a crucial role in our journey so far, and it is just the beginning.”

Thin-film platform by BonAyu Life Sciences Pvt. Ltd

Founded by Vishal Kataria, a Bhuvneshwar based startup BonAyu is revolutionizing the way health-care and lifestyle products are consumed. Their vision is to make a positive difference in the lives of consumers through the development of a novel, innovative, bio-degradable proprietary delivery platform for health supplements and cosmetic applications.

Their innovative mouth-dissolving, thin-film platform is an alternate to tablets, capsules, liquids syrups for the delivery of Food supplements and medicines. The development of this product was supported through BIG scheme, From BonAyulife sciences, is with us to launch this product.

AUM by Innaumation Medical Devices LLP

Innaumation Medical Devices LLP is a Bangalore based start-up. Dr Vishal Rao and his team have invented the AUM voice prosthesis to help throat cancer patients get their lost voice back, at an affordable price. Dr. Rao has vast experience in the field of Oncology and Head & Neck Surgery and has been trained in Oncology at Tata Memorial Hospital, Mumbai.

Most throat cancer patients who undergo laryngectomy are unable to speak after the surgery due to removal of voice box. Normally, these patients go for the western prosthesis, however, the most popular european prosthesis costs around INR 25000-30000, which many patients cannot afford. The Aum Voice Prosthesis is priced at INR 50. The development of this product was supported through BIRAC’S BIG scheme.

Mush D+ by Innotech Interventions Private Limited

Founded by Dr Priyangshu Manab Sarma, Innotech Interventions is a Guwahati based start-up which with the aim of meeting societal needs and facilitating sustainable development engages in developing and commercializing innovations. Dr. Sarma along with his team has developed a process for enhancing Vitamin D content of Mushrooms through a natural organic process ‘Mush D+’ that can enhance vitamin D in mushrooms to a concentration so that it can be used as a fortified food to meet the recommended daily dose of Vitamin D. The development of this product was supported through BIG scheme.

BIRAC also celebrated women in entrepreneurship, who were responsible for impactful biotech innovations, through the BIRAC TiE-WInER Awards.