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15th edition of ELECRAMA 2023 announced;
aligns with Government's energy transition goals for 2047



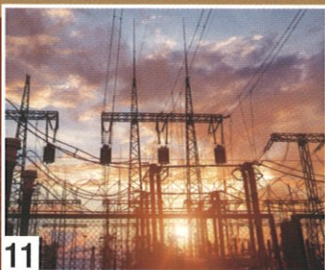
distribulect

India's only exhibition on Hi-Tech Power Distribution

buildlect

A Unique Exposition on Building Electrical Systems

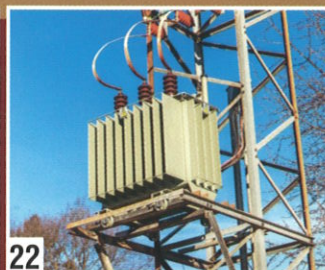
25 - 27 May 2022, BIEC, Banagalore



11



14



22



58

Cover Story : Announcement of ELECRAMA 2023

Upcoming : Conversation with Chairman DistribuELEC

In Focus : Distribution Transformers

Expert Speak : Transparent Solar PV Technology- New horizons



**COVID-19
Stay Safe**

VJTI Technology Business Incubator, Mumbai

creating a sustainable ecosystem for energy startups

Energy has played a very vital role in the economic growth of our nation. According to the Ministry of New and Renewable Energy, the Indian renewable energy sector is the fourth fastest growing renewable energy market in the world with more focus on recently evolved areas like electrical vehicles, energy storage, microgrid and smart grid. In the recent years there has been a sharp rise in the number of entrepreneurs and startups focusing on these sectors and the ecosystem including incubators and accelerators along with investors have been positively supporting their entrepreneurial endeavors. In line with these trends, VJTI Technology Business Incubator (VJTI-TBI) was set up in 2017 at the prestigious Veermata Jijabai Technological Institute (VJTI), Mumbai with the support of Department of Science and Technology, Govt. of India under the NIDHI-TBI Scheme.

VJTI (established in 1887 as Victoria Jubilee Technological Institute) has been a pioneer in imparting engineering education, research and training ecosystem in the country ever since its inception. Considering the expertise, resources and industry collaborations fostered by VJTI over the last few years it decided to create VJTI-TBI, a platform for supporting ambitious entrepreneurs and startups in the country focusing on thematic areas including Energy, Cleantech, Electric Vehicles, IoT, AI/ML and

Cyber Security of critical infrastructure. This award-winning incubator (awarded 'Smart Incubator of the Year' at ISGF Innovation Awards 2020) selects startups and entrepreneurs working in the thematic areas through a robust 2-step process by a panel of eminent experts from industry, academia and investment sector. All selected start-ups under the program are provided with co-working space, access to state-of-the-art lab infrastructure (SCADA & Automation Lab, Power Electronics Lab and AI/ML and Embedded Systems Lab) equipped to test products and prototypes in the domains mentioned above. In addition, VJTI-TBI also provide advisory services in business management, IPR, finance and accounting, legal and technical domains through collaborations with third party service providers and industry associations: Start-ups incubated within the incubator also get access to free tools including AWS credits, ZOHO platform, Zendesk CRM, Solidworks, MatLab and Simulink licenses and MyOperator cloud telephony credits. VJTI-TBI has also partnered with various corporates (Larsen and Toubro Infotech (LTI), Emerson, NVIDIA, Siemens and CISCO) and industry bodies (India Electrical and Electronics Manufacturers Association, Cyber Peace Foundation, The Institute of Engineering Technology, India Energy Storage Alliance and India Smart Grid Forum) to



provide support to the start-ups either through mentoring, funding and infrastructure support (including lab infrastructure). Some of the promising start-ups and entrepreneurs incubated at VJTI-TBI focusing on energy and cleantech are summarized below: SMDP Solutions (OPC) Pvt Ltd: Founded by Vishwesh Bhat, SMDPower Solutions, a Goa-based energy startup, has manufactured innovative IoT-based products that help customers manage their energy consumption leading to significant savings. Their existing range of products include Intelligent Common Light Controller, Intelligent Street Lighting System, Intelligent Temperature Controller and Intelligent Sense recorder for Electricity. Winner of the 'Prototyping Grant Award' from Goa State Innovation Council, the startup is currently focused on developing an IoT-based product for making Intelligent Air Conditioners. SMDP believes this product will harness the power of CoreLogiQ analytics software and shall reduce AC power bills by upto 50% giving value to customers. Contact Person: Mr. Vishwesh Bhat E-mail: vishwesh@smdp.in Website: <https://smdp.in>

Torus Robotics Pvt Ltd:

Torus Robotics is a Startup India recognized tech start-up working on unmanned ground vehicles (UGV) and robotics. Their flagship technology includes the world's most compact, lightweight and powerful motor technology, which is 50% lighter, 15% more efficient and 10% more cost effective than the commercially imported motors available in the market. Their flagship product named 'Kalam' is a multipurpose heavy duty amphibious UGV that shall be used for combat, surveillance and landbased logistics. Torus recently signed an MoU with BEML (formerly Bharat Earth Movers Limited), a Govt of India enterprise. They have also been recognized by national and international organizations including DRDO, Climate Launchpad, UN FLCTD and HexGn.

Contact Person: Mr. Vignesh M
E-mail: taurus.defence@gmail.com

Punaha Batteries Resurgence Pvt Ltd:

Punaha Batteries is a cleantech startup which aims to reduce e-waste in the battery industry by upto 50% through a novel mechanism to reduce the number of lead acid and nickel cadmium batteries that are discarded. The startup uses a software-controlled 'desulphation' process to regenerate the batteries, allowing them to be used for up to twice as long. Punaha has provided battery regeneration services to some big names in the industry including Godrej, Asian Paints, Coca Cola, Future Group, Mac Neill Engineering, Naval Dockyard Mumbai, Mazagon Docks Ltd and Johnson & Johnson. The



startup was selected among the Top 10 innovators under the 'Springwise Positive Innovation Challenge 2019' organized by Springwise Intelligence (UK) in collaboration with Startup India. Contact Person: Ex-CDR Harihaha Subrahmaniam

E-mail: hari@punahabattery.com
Website: <https://punahabattery.com>

VJTI-TBI is currently looking to partner with industries and businesses focusing on developing innovations in the energy and cleantech domain for promoting innovation challenges and hackathons. The incubator has already forged partnerships with LTI, ITD Cementation India, SIDBI Capital Ventures and Technoalent Engineering India and raised CSR funding of upto Rs 187 Lakhs for providing seed support to startups and for creating co-working space and prototyping labs. Partnerships with these stakeholders in the relevant domains plays a key role to help the entrepreneurs tide the difficult part of the journey in their initial years. Along with 27 existing Incubatees, the incubator plans to onboard between 10-15 more startups working in the thematic areas of energy, cleantech, AI/ ML, IoT, EV and cybersecurity in the next year. ■

Startup Innovations in EV Sector

Case studies from VJTI-TBI

New-age entrepreneurs are entering the EV market with new business models and introducing innovative technologies to automate agri-produce harvesting, promoting personal mobility and introducing last-mile micro-mobility products, etc. Dr. Faruk Kazi, Principal Investigator at VJTI-TBI, talks about VJTI's incubator set-up and how it is successfully supporting promising startups in the electric domain.

According to a market report, India has sold more than one million electric vehicles in the last two years. According to Mordor Intelligence, the Indian EV market was valued at \$5 billion in 2020 and is expected to reach \$47 billion by 2026 registering a CAGR of above 44 percent during the forecast period (2021-2026). However, the EV market in India is still considered to be in a nascent stage but is expected to grow at a much faster rate due to various government initiatives, including the implementation of the FAMEII Scheme and promotion of EV products and associated industries. In recent times, a significant contribution to this sector has come from not only traditional manufacturers but also startups.

Considering these encouraging trends, the prestigious Veermata Jijabai Technological Institute in Mumbai set up the Technology Business Incubator (VJTI-TBI), to support startups focusing on various aspects of EVs including technology, innovation, and business models. Set up in 2017 with the support of the Department of Science and Technology, government of India, under the NIDHI-TBI Scheme, VJTI-TBI was created as a platform for supporting ambitious entrepreneurs and startups in the country focusing on thematic areas including energy, cleantech, EV, IoT, AI/ML and cybersecurity of critical infrastructure. The incubated startups are provided with co-working space, access to state-of-the-art lab infrastructure (SCADA & Automation Lab, Power Electronics Lab, and AI/ML and Embedded Systems Lab) equipped to test products and prototypes in the domains mentioned earlier. The incubator is already supporting around 30 startups, and was recently named 'Smart Incubator of the Year' at ISGF Innovations Awards

2020. In addition, VJTI-TBI provides advisory services in business management, IPR, finance, and accounting, legal and technical domains through collaborations with third-party service providers and industry associations. The Incubated startups also get access to free tools including AWS credits, ZOHO platform, Zendesk CRM, SOLIDWORKS licenses, MatLab and Simulink licenses, and MyOperator cloud telephony credits.



CaseStudy

VJTI-TBI has also partnered with several corporates (Larsen and Toubro Infotech (LTI), Emerson, NVIDIA, Siemens, and CISCO) and industry bodies (India Electrical and Electronics Manufacturers Association, Cyber Peace Foundation, The Institute of Engineering and Technology, India Energy Storage Alliance, and India Smart Grid Forum) to support the startups through mentoring, funding, and infrastructure (including lab infrastructure). Startups are provided with seed support through CSR partnership with LTI, ITD Cementation India, SIDBI Capital Ventures, and Technoalent Engineering India. Following are some of the promising EV startups incubated at VJTI-TBI.

Mag9 Energies Pvt. Ltd.

Sunit Shah, Nikunj Shah, and Vikas Gupta co-founded Mag9 Energies (previously Magnes Motors India) with the sole purpose of providing micro-mobility services in the EV segment. The Team under the Magnes Motors brand was one of the first to offer an electric Go-Kart for the amusement parks in the country. Later, they also focused on developing a dirt bike for the amateur sports industry and have already developed a prototype of an electric delivery 2-wheeler for the logistics sector. Mag9 Energies has generated revenues of `1 crore from the Go-Kart product line and has also introduced an e-bike recently. These e-bikes will soon be made available on the VJTI campus as a part of their go green initiative.

Mag9 Energies have been selected as finalists in STPI Motion and other reputed incubation programs in the country focusing on EV development. PMV Electric Pvt. Ltd. PMV (Personal Mobility Vehicles), is currently developing its flagship product, EaS-E, an electric smart car for everyday use with a focus on sustainable personal mobility; to address the global challenges of pollution, climate change, urban congestion and parking issues. The two-seater fully electric smart microcar will have some top-of-the line benefits like cruise control, a feet-free driving mode in traffic, remote parking assist, over-the-air updates besides the regular air conditioner, music system, navigation, safety seat belts, etc.

The startup has received more than 200+ inbound leads for the product and has got an initial confirmation from an existing OEM distributor (exports) to exclusively distribute the product in their market (can translate into `10 crore of order book). PMV Electric has raised initial seed funds through Angel Investors in November 2020 and has got a further commitment to raise more funds.

Also, they have export inquiries under discussion, so that they can realize their dream of 'Made in India, Made for the World'.

JyoSH AI Solutions Pvt. Ltd.

JyoSH Agriculture Integrated Robot is an EV-enabled and AI-ML technology-based smart, precision farming solution for entire automation cotton cultivation, which includes weed management, crop health monitoring, and cotton harvesting. It improves the productivity and profitability of cotton farmers by saving labor and chemical costs. JyoSH AI robot is also designed to automate the cultivation of other fruits and vegetables as well.

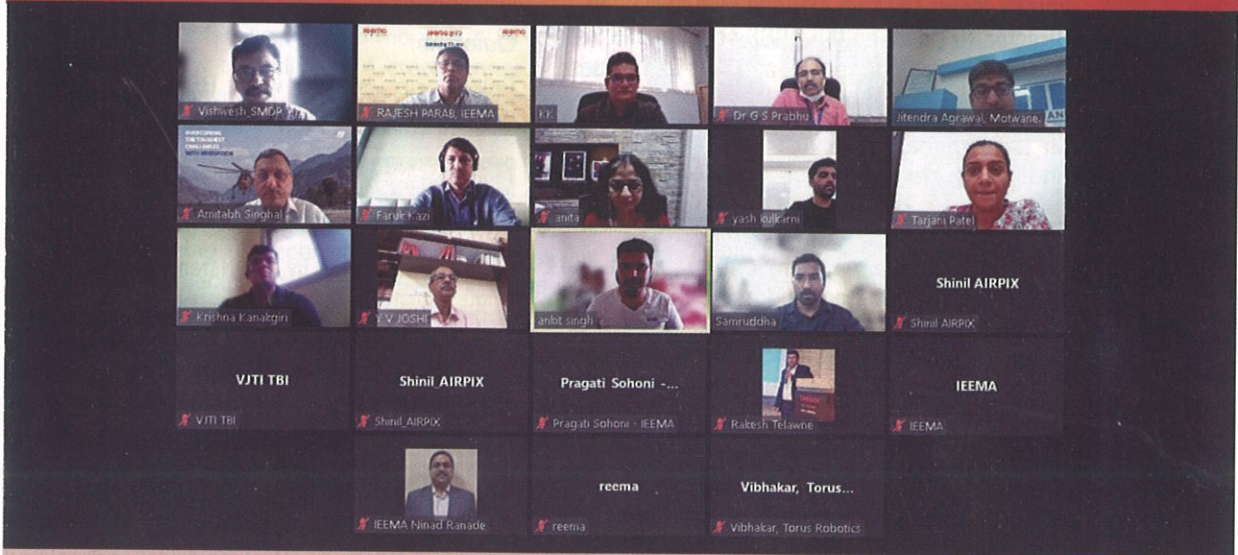
The co-founders, Dr. Sharadchandra Lohokare and Jitendra Ahirrao, have a combined experience of over 50 years in mechatronics, product development, AI-ML, and program management. JyoSH AI Solutions are the winners of the Agri India Hackathon held in



Feb 2021 under the 'Farm Mechanization' category. They have been selected for NIDHI PRAYAS funding and by NASSCOM for DTC (Deep Technology Club). At present, the startup is also incubated at SINE, IIT Bombay and AIC-RMP, Mumbai. They signed an MoU with Dr. Panjabrao Deshmukh Vidyapeeth, Akola, for agri-domain support, and Jadhao Agro Industries, Amravati, for product manufacturing.

Along with Mag9 Energies, PMV Electric, and Jyosh AI Solutions, VJTI-TBI expects to support more EV-based startups in the future cohorts. With the right support of lab infrastructure, training, mentoring, and fundraising, the incubated startups can definitely aim to take their tech-based product/ service to the next level. ■

IEEMA and VJTI - TBI Curtain Raiser and Interactive Session with Select Startup



IEEMA and VJTI- Technology Business Incubator collaborated to organise its first Start-up Conclave to be held in June, 2022. The objective of the Conclave is to support the innovation and entrepreneurship ecosystem.

A pre virtual Curtain Raiser and interactive sessions with select Start-ups was held on **Friday, 25th March, 2022**. Eight shortlisted Start-up participated in the curtain raiser and presented their Product /Technology to the IEEMA Technology and Innovation Support Council (TISCO) and Industry Experts.



IEEMA VJTI-TBI Startup Conclave

Venue: VJTI, Mumbai

Coming soon in June, 2022



IEEMA and VJTI - Technology Business Incubator (VJTI-TBI) collaborated to Organise its first Start-up Conclave. The objective of the Conclave is to support the innovation and entrepreneurship ecosystem. This will also step towards knowing the nature of technology-based innovation/ products and services being developed by Startups in the country. Also support Government of India "Make in India" efforts.



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