EV Update Media

MAGAZINE OCT-NOV 2023 ISSUE

INDUSTRY INSIGHTS ON

- Strategies and innovations poised to enhance the overall user experience in the electric vehicle realm.
- Navigating Challenges and Opportunities in India's EV Fleet Charging Revolution"
- Intersection of IoT and telematics, uncovering their pivotal role in enhancing safety, diagnostics, and overall efficiency for electric fleet operators.
- Strategic vision, collaborative approaches, and the crucial role private players play in building a sustainable EV fleet charging ecosystem in India.
- Private infrastructure, diverse charging requirements, and streamlined processes are shaping the future of electric mobility.
- IoT and telematics, offering comprehensive solutions that redefine the efficiency and connectivity of electric vehicle fleets.
- Connectivity and data-driven decision-making contribute to optimal battery performance.
- The core elements contributing to the reliability, durability, and user friendliness of EV charging products.

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INDUSTRY PERSPECTIVE

IN CONVERSATION

Mr. Kunal Agarwal
Marketing head
Cybernetik

Cybernetik.

Q1) Could you discuss the role of IoT in your EV battery assembly solutions?

Connectivity and data-based, informed decision making are the prime advantages of IoT. Various stations of our EV battery assembly solutions are connected via IoT for station-to-station connectivity and communication. The data gathered and analysed via IoT helps better understand system performance and behaviour. This enables intelligent decision making for performance improvement, predictive maintenance, and energy use optimization.

In one of our solutions, for example, we employed structural adhesive, thermal paste, and insulation foam dispensers. The challenge here was to synchronize these stations, each of which had different curing times, within the overall operation of the system to achieve proper dispensing with minimal wastage.

Q2) What are some of the key success stories or case studies involving Cybernetik Technologies' solutions in the electric vehicle and battery industry that you would like to highlight for the readers?

Cybernetik was involved in Concurrent Engineering with a leading 2-wheeler maker. The project was challenging and we successfully delivered a system that was operationally integrated from the initial Cell Testing to the End-of-Line Testing for excellent accuracy, speed, and safety. SCADA enabled customized recipe handling while Regenerative Discharging saved electricity consumption.

Next, we built a Cell Sorting and Module Formation for an EV battery manufacturer. The solution categorized cells into four classes based on electrical parameter testing results. Thereafter, cells of one class were assembled into a single module for superior battery performance. The solution was primed for quality at high speed and easy changeover / maintenance.

Total Quality Parameter Tracking is an essential feature of both these systems.

Q3) The use of regenerative discharging to save electricity is an intriguing aspect of your technology. How does this feature translate into cost savings and sustainability for fleets adopting EVs?

Regenerative discharging is part of an End of Line Testing station. The testing here involves complete charging and discharging of the assembled EV battery to evaluate its performance across the operational spectrum. What the regenerative discharging system does is return electricity to the grid during discharging, thereby minimizing the amount of power consumed during assembly.

Battery assemblers can pass on part of the savings to the end customer. Considering the fact that battery makes up 40-60% of the cost of EVs, these savings can act as an incentive for wider EV adoption. And any resource saved, particularly electricity, transforms into environmental sustainability.

Q4) Could you share your insights on the future of transportation and the role that EV battery technology plays in realizing a cleaner and more sustainable world? How do you see the industry evolving in the coming years?

EVs will be an important tool in the fight against Climate Change in the days to come.

Among the three applications of energy viz. electricity, heating, and transportation, the last one is conventionally tough to decarbonize. EVs help overcome this fundamental threshold.

All technologies take their time to achieve mass acceptance. This is truer for transformative technologies such as EVs. As EV technology evolves to become increasingly useful, their adoption will speed up. Particularly because governments across the world are coming up favourable policies.

The EV battery industry will evolve to deliver batteries with longer range and life, are manufactured / assembled in shorter spans, and can be swapped / charged faster. Automation will play a key role in facilitating this evolution.

Another aspect of evolution will be standardization. As the industry matures, standardized batteries may develop. As of now, standardization is not possible given that it will limit innovation in this innovation-heavy industry. With standardized batteries, a greater pool of batteries will be available for swapping, something that will drastically cut down the waiting times at swapping stations.

Q5) In one of your article, you mentioned "Total quality parameters tracking ensures long battery life." Could you elaborate on how your technology achieves this and the benefit it brings to battery manufacturers?

Total quality parameter tracking involves the tracing of all parameters that affect the performance and life of the EV battery. These include electrical parameters such as resistance, charge, and voltage; position and orientation of cells and bus bars; location of welds and insulation paper; pressure, shape of adhesive beads, and the like.

What such elaborate tracking does is build quality in the assembly process, which invariably churns out EV batteries with optimal life span and performance.