

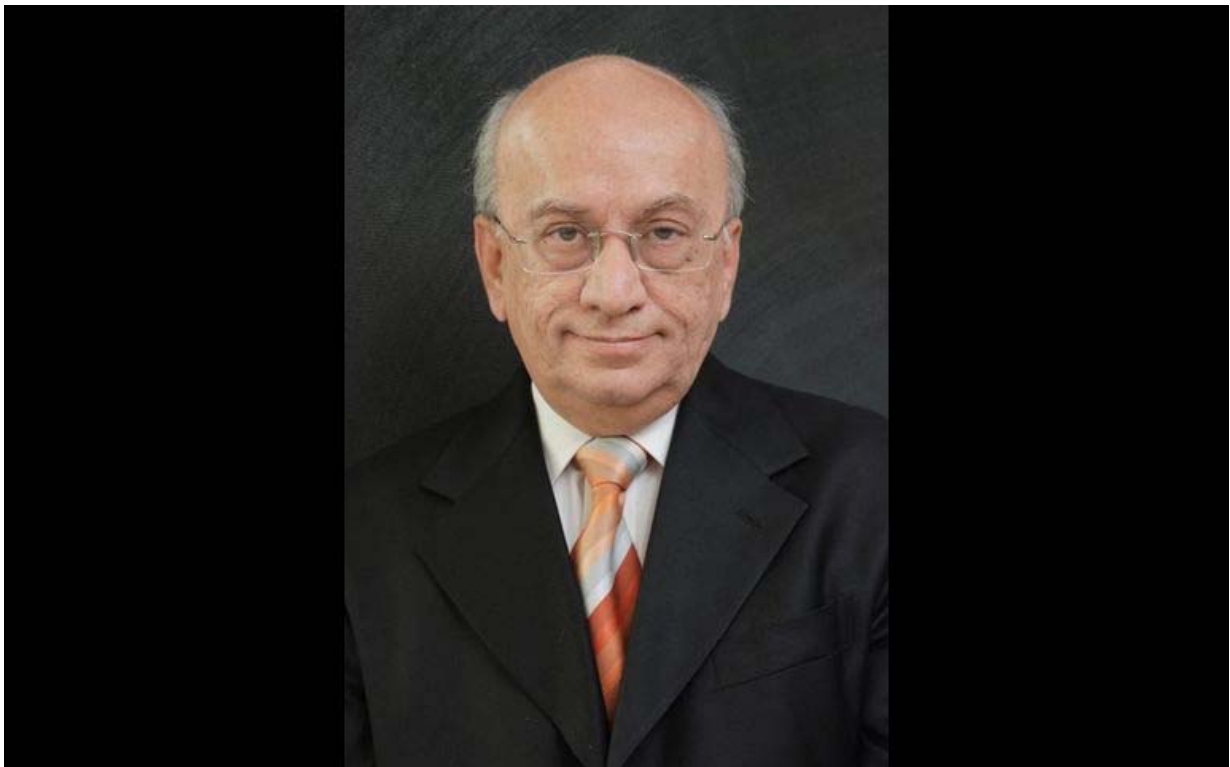
FEATURES (/FEATURES) Author: Naveen Arul

Bry-Air Iterates Criticality Of Dry Rooms For EV Battery Cell Production



The use of Dry Rooms is high in manufacturing critical components that require environments with the lowest levels of humidity possible, making battery cells an ideal application

Bry-Air is a global leader in providing solutions for dehumidification, in addition to drying, gas phase filtration, plastics drying, conveying, blending and mould dehumidification, high temperature waste heat recovery and energy smart cooling using waste heat. It offers end-to-end support in setting up dry rooms for R&D work and production of Lithium-ion batteries for Electric Vehicles (EV). **Deepak Pahwa, Chairman, Pahwa Group and Managing Director, Bry-Air (Asia)**, gives us insights into the concept of Dry Rooms and dehumidification



[\(/images/Web-images/2020/June/Bry-Air---Deepak-Pahwa.jpg\)](/images/Web-images/2020/June/Bry-Air---Deepak-Pahwa.jpg)

EV APPROACH

According to industry estimates provided by Bry-Air, post COVID-19, the global EV and its infrastructure market is projected to reach 4.18 million units by 2021, a CAGR of 22.1 % from 2020. In the context of EVs, the battery is the most expensive component, which accounts for 40 % of the total cost of manufacturing. Li-ion batteries have the highest adoption in the global EV market, but lead-acid batteries seem to be higher in adoption in India.

As per JMK Research, the Li-ion battery market in India is expected to increase from 2.9 GWh in 2018 to about 132 GWh by 2030. The Dry Room facility or the infrastructure where these batteries are manufactured plays a critical role in developing cutting-edge, high-quality Li-ion batteries, noted Pahwa. A small amount of moisture in the battery can completely ruin it, since lithium is highly aggressive, corrosive and hygroscopic in nature. This makes Bry-Air an important part of the ecosystem for the manufacture of li-ion cells, which make up the battery.

IMPORTANCE OF DEHUMIDIFICATION IN PRODUCTION

Pahwa explained that when a battery experiences high temperature, the manner in which it reacts is a result from the way it was manufactured. Therefore, the entire performance of a battery eventually trickles down to the steps and precautions taken during the manufacture of the cells. This means that the amount of moisture present during manufacturing needs to be as low as possible. There is a need to be a relative

humidity of 0.05%, with temperature ranging from -40°C to -70°C in the manufacturing area, Pahwas said.

This also means that the presence of humans in the space used to manufacture these cells needs to be restricted, since humans are the highest providers of moisture in that scenario. This has also led to the increased levels of automation inside the Dry Rooms, so as to decrease the amount of human presence required. However, Pahwa said that the level of automation in the Dry Room depends on the end-requirement, as well as the cost availability of the cell or battery. Therefore, the control of moisture in the production of li-ion cells becomes paramount.

CONCLUSION

Pahwa said that Bry-Air is well-equipped to tackle the possible EV growth situation both locally, as well as in international markets. He noted that the challenge is currently in the areas of investments that companies need to make into the field of cell manufacturing for EV batteries. The cost of investment for the manufacture of li-ion batteries is about Rs 700 crore per GWh, which could act as a factor in delaying investments into this.

TEXT: Naveen Arul

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