**Meech to highlight importance of contamination removal and static control at key stages in battery cell manufacturing at The Battery Show 2024**

Following a hugely successful appearance at the 2023 exhibition, Meech International will return to The Battery Show in 2024 (Booth 10-H100) to present its range of static control and web cleaning solutions.

Neutralising troublesome static charges in separator film and removing damaging contamination is vital during battery cell manufacturing processes to guarantee optimal output quality. Meech provides a consultative approach to addressing surface contamination and static charge elimination, offering a variety of solutions specifically designed for the battery manufacturing sector. These solutions can be customised to match the material, process, and type of contamination involved.

**The importance of web cleaning in battery manufacturing**

Meech web cleaners are used in a wide variety of applications during the battery production process. For example, it is essential that the quality of the coated web is maintained during the production process. This starts with the Pre-Coating stage where Meech web cleaning solutions like the RoClean or CyClean R can be used to remove surface contamination, which is essential to maintaining the performance of the battery.

Equally, web cleaning is a key component in the Pre-Calendaring stage. Cleaning the web prior to this critical stage prevents contamination being trapped between layers which could result in the coating layer being out of tolerance.

Finally, significant debris may arise during both the Post Slitting and Post Electrode Cutting phases, making cleaning imperative to avoid the risk of future electrical shortages and expensive rejects. Depending on the process and material (bound or un-bound), Meech is one of very few manufacturers able to offer either a contact or non-contact web cleaner solution.

**The importance of static control in battery manufacturing**

Working in tandem with a web cleaning solution, effective static control is also hugely important during the manufacturing process. The battery separator film, in particular, is extremely sensitive to static charges created by friction from the winding and unwinding throughout the transfer process.Left untreated, this can lead to film contamination and where charges are particularly high even sparks, resulting in dendritic burn in the material. In turn, these burns can lead to a loss in insulative properties and create shortages in the battery cell itself. Meech Ionising bars, such as the Hyperion range, will prevent the build-up of static charges and lead to smoother, cleaner production.

Meech products on display at The Battery Show include:

**RoClean**

Unlike other brush cleaning web cleaners on market, RoClean combines dynamic air flows and a high precision rotating brush technology. The battery web passes through an ionisation cloud on entrance and exit, while the brush rotates in the opposite direction to the web or electrode sheets for thorough disruption of unbonded and semi-bonded contamination particles. Contaminants are drawn into the vacuum chamber, while the positive air flow not only disrupts contamination on the web, but it also ensures that any contamination left on the brush is also blown towards the vacuum chamber.

**Cyclean R**

CyClean-R uses carefully balanced, powerful air flows that allow converters to thoroughly clean sensitive, low-tension web surfaces.

Ideal for use in a wide variety of applications, including narrow, mid and wide web, CyClean-R is available as a single-sided and double-sided web cleaner. From its position on the web roller, it delivers optimal, consistent removal of dry, unbonded contamination from any web material (particle removal to 0.5 micron is achievable).

**Compact AHU**

The Meech AHUv3 range is integral to the Cyclean-R™ and RoClean™ specialised surface cleaners. The AHUv3 provides positive and vacuum pressure airflows and houses the system filter bag and optional HEPA filter particularly important when working in a clean room. It can be operated independently or integrated into the production controls. It is of robust design and requires minimal maintenance.

**Smart Control Touch**

SmartControl Touch harnesses the power of Industry 4.0 within scaled-up battery manufacturing applications by connecting multiple ionisation bars and sensors for advanced monitoring and control. By combining devices, it creates a single control system for static control offering improved productivity, quality and safety assurance. The unit allows users to monitor, control and adjust the performance of multiple connected Hyperion ionising bars and distance sensors via an integrated touchscreen, or remotely via a mobile phone, tablet, or desktop.

**Hyperion Feedback Sensor**

Meech’s Hyperion Feedback Sensor introduces a cutting-edge closed-loop feedback system for static control, auto adjusting the DC ionising bars based on variations in charges detected on the material. This innovative system is achieved by installing the sensor as part of SmartControl which can accommodate up to 30 sensors/bars combinations forming a comprehensive closed-loop feedback control. The goal is to achieve a perfectly neutral web even when charges vary due to changes on conditions. This dynamic and responsive process operates in a continuous loop, constantly measuring and fine-tuning to deliver the highest standard of static control for the sensitive battery production processes.

**Hyperion bars**

Meech’s Hyperion pulsed DC ionising bars, the 924IPS, 960IPS, and 971IPS, provide short, medium and long-distance static elimination respectively, meaning there is a solution for every manufacturing environment to ensure fast and hassle-free production.

Ian Atkinson, Director, International Business Development, Meech International Comments: “We look forward to showcasing our extensive range of static control and web cleaning solutions once again at The Battery Show. Neglecting to consider static charges and surface contamination within the battery manufacturing process can have serious consequences – with reduced yields or worse, latent defects being passed on into the supply chain. The Battery Show provides an excellent platform for us to demonstrate the critical importance of our products in ensuring optimal output quality in the battery industry. We’re working on a number of exciting projects which came from conversations at last year’s show, and we’re really looking forward to building on those relationships – and starting new ones – this year.”

To learn more, visit Meech at The Battery Show (Booth 10-H100) or to watch Meech’s webinar on avoiding thermal runaway in EV batteries visit: <https://youtu.be/-ACn6jrTUr0>

The full list of products displayed by Meech at The Battery Show 2024 are:

Web Cleaners:

RoClean

CyClean

CyClean R

AVUv3 Compact – 2 Pump

Static Control:

Hyperion bar 314IPS

Hyperion bar 924IPS

Hyperion bar 960IPS

Hyperion bar 971 IPS-30

Hyperion Feedback Sensor

SmartControl Touch

Feedback Sensor

Short extension cables to connect bars and sensor

**ENDS**

**About Meech International**

Founded in 1907 and headquartered in Oxfordshire, UK, Meech International is a specialist developer and manufacturer of electrostatic controls and related solutions. The Meech product range is organised into three key groupings: static control, air technology plus contact and non-contact web cleaning systems. These are used extensively within a wide range of industries including printing, packaging, converting, plastics, automotive, pharmaceutical and food production. With an established worldwide network of subsidiaries and distributors, around 80% of the systems produced by Meech are sold in 45 overseas markets.

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