

February 24, 2021

Zeon Seeks to Expand Application of Adhesive for Battery Separators Extended Lifespan and Lower Costs for Lithium-ion Batteries

Zeon Corporation

Zeon Corporation (President and CEO: Kimiaki Tanaka) is promoting the application of its technology for forming adhesive layers in lithium-ion batteries that integrate the coiled body*¹ by adhering electrodes and separator. The company has embarked on a full-scale effort to promote the technology as a solution to achieve longer battery life and lower cost by addressing the challenge of maintaining the proper distance between the electrodes in pouch cells*².

With pouch-type lithium-ion batteries, residual stress and other factors that emerge from repeated use result in creating a gap between electrodes and separator that inhibits the movement of lithium ions between the anode and cathode, which in turn affects battery life.

The coating of Zeon's adhesive (product name: AFL®) on the separator maintains the proper distance between electrodes, thereby extending battery life. AFL® is characterized by its adaptability to different processes as it can be applied in accordance with the temperature and pressure conditions required by the customer.

AFL® also offers additional benefits in the battery manufacturing process. Compressing the coiled body by hot pressing and other methods enables high-speed transportation during the manufacturing process. This facilitates injection into the battery case and significantly boosts productivity even for large scale batteries.

With regard to the laminates*³ used in laminated batteries, which are becoming increasingly popular, the challenge has been to address the declining yield caused by misalignment and bending between layers. AFL® resolves this by integrating the layers for enhanced handling and faster manufacturing.

Zeon presented detailed information on these achievements at a lecture during the International Rechargeable Battery Expo (BATTERY JAPAN) held at Tokyo Big Sight in March.

The Zeon Group will continue to play its part in developing the rechargeable battery industry toward the creation of a sustainable society.

Lecture Outline

Name: Development of Functional Binder Technology for Lithium-ion Batteries

Event: Specialized Technology Seminar, 12th International Rechargeable Battery Expo

Time: 1:00 P.M., March 4, 2021

Place: Seminar Room, South Exhibition Hall, Tokyo Big Sight

Glossary

*1 Coiled body: A sheet containing an anode and cathode insulated by a separator and wound into a coil.

*2 Pouch cell: A battery housed in aluminum pouch film.

*3 Laminate: A multi-layered sheet consisting of an anode, separator, and cathode that is cut to a certain size. The square corners reduce unused space to offer higher energy density than a coiled body.

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