Ultrafast laser structuring providing refinement on electrode design for cylindrical batteries

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Abstract for WEB (100 words, 3-5 bullet points):

Manufacturing 4690 cells involves the use of laser structuring for thick-film electrodes. Those batteries undergo an accelerated electrolyte filling process. Electrolyte rewetting during battery operation is significantly enhanced contributing to an increased cycle lifetime and prevents lithium plating during fast charging. The R2R pilot line is undergoing further development to enhance process efficiency. It uses advanced, high-power, ultrafast lasers which have been successfully used with various types of electrode material.

- Pouch cells and cylindrical cells with structured electrodes
- Electrolyte filling process accelerated
- Electrolyte rewetting during battery operation
- Fast charging capability improved
- Increased battery cycle lifetime

Abstract for Print (70 words):

Manufacturing 4690 cells involves the use of laser structuring for thick-film electrodes. Those batteries undergo an accelerated electrolyte filling process. Electrolyte rewetting during battery operation is significantly enhanced contributing to an increased cycle lifetime and prevents lithium plating during fast charging. The R2R pilot line is undergoing further development to enhance process efficiency. It uses advanced, high-power, ultrafast lasers which have been successfully used with various types of electrode material.