Addressing Mechanical and Electrochemical Aging of Cylindrical LFP Battery Cells by Laser Structuring of Electrodes

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- Implementation of lithium iron phosphate (LFP) 3D electrodes in cylindrical batteries
- Identification of an optimized process window for ultrafast laser structuring of LFP electrodes
- No coating defects after winding of 3D structured electrodes at small inner core radii of cylindrical cells
- Improved rate capability for batteries with structured electrodes compared to those with unstructured electrodes

Schematic illustration of unstructured and structured electrodes after winding at small radii