

54th CIRP Conference on Manufacturing Systems

Marking of Electrode Sheets in the Production of Lithium-Ion Cells as an Enabler for Tracking and Tracing

Alessandro Sommer^{*a}, Matthias Leeb^a, Sajedeh Haghi^a, Florian J. Günter^a, Gunther Reinhart^a

^a*Institute for Machine Tools and Industrial Management, Technical University of Munich, Boltzmannstr. 15, Garching 85748, Germany*

* Corresponding author. Tel.: +49-89-289 55467; fax: +49-89-289-15555. E-mail address: Alessandro.Sommer@iwb.tum.de

Abstract

The production of lithium-ion batteries is highly complex and characterized by continuous as well as discrete material flows and processes. A first step towards controlling the complexity of battery production is to create transparency through data collection. Electrodes as one of the key elements in a battery cell play a decisive role for the battery performance. The allocation of production data to electrodes enables a detailed digital twin and an individual grading system. This paper presents a concept for the marking of electrode sheets and requirements on markers as well as on marking technologies due to boundary conditions.

© 2021 The Authors. Published by Elsevier B.V.

This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Peer-review under responsibility of the scientific committee of the 54th CIRP Conference on Manufacturing System

Keywords: Tracking and Tracing; Data Allocation; Battery Cell Production; Digital Twin
