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Ontology-based Traceability System for Interoperable Data Acquisition in Battery Cell Manufacturing

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Abstract

In order to support the transformation of energy and transportation sectors, costs and environmental impacts of battery cell need to be reduced. Data acquisition plays a major role in generating transparency within the complex system of battery manufacturing and enables its improvement. This paper presents a methodology for the development of an ontology-based traceability system of data acquired along the battery cell manufacturing chain. This system provides interrelations between data, data sources, and corresponding entities enabling an interoperable data acquisition. A data basis generated with this ontology-based traceability system supports and eases data analytics applications in battery cell manufacturing.

Keywords: Tracking and Tracing; Traceability; Traceability System; Data Acquisition; Ontology; Battery Manufacturing