

Research topic: Accurate material analysis of PCBs for EVs (DIG3)

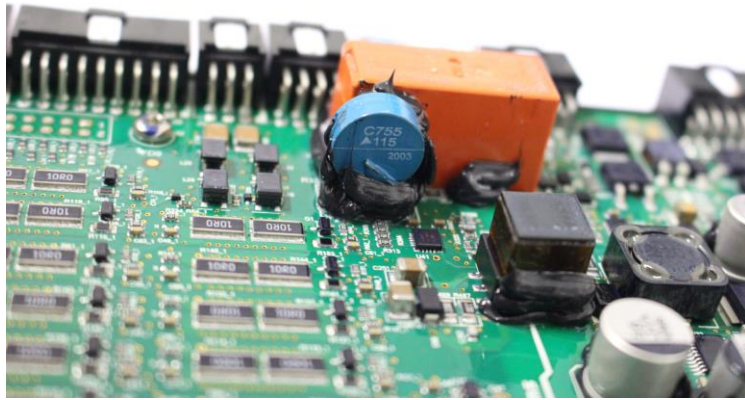
- Research line: Resource management for a Circular Economy
- Research group: Sostenipra

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Giving batteries a second life

The material information of products and their components is a crucial set of information necessary for the circular economy. Supported by the DigiPrime project, researchers at Sostenipra are studying the material composition of the Printed Circuit Boards (PCB) that make up the Battery Management System (BMS) of electric vehicle batteries. Updating the material information of such BMS is crucial as current literature has only used generic and outdated PCBs material information for sustainability assessments such as Life Cycle Assessments (LCA).

The student in this Masters Thesis will inventory the components and materials of selected BMS to perform LC inventories. The inventories will be uploaded in the DoSE and LCADB databases to facilitate data availability for LCAs. The results will support further research on raw material and component demand-supply.

Main goal: Inventory the material and component composition of BMS for their circularity assessment

MAIN TASKS:

- 1) Identify components from battery management systems from batteries reused in DigiPrime project
- 2) Create material and life cycle inventories of BMS analyzed
- 3) Contrast current life cycle inventories of batteries
- 4) Identify key components and materials for new products regarding supply criticality
- 5) Research their limitations in reusability according to battery design
- 6) To write a peer-review paper for submission in a peer-review journal.