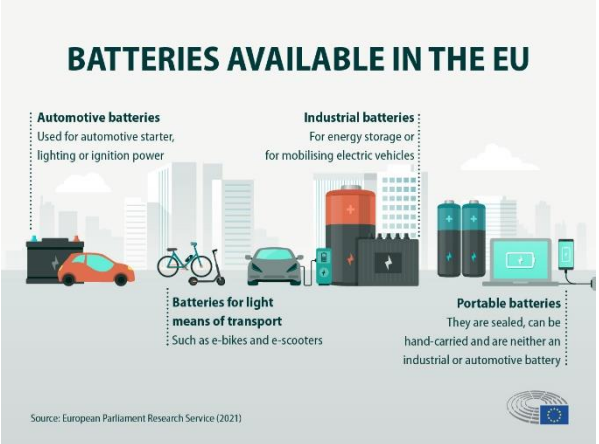
Master Thesis in Battery passport for End of life Batteries

Do you want to take part in developing a sustainable future in collaboration with experienced researchers in a professional and friendly environment? We at Chalmers Industriteknik are looking for ambitious and driven students who are interested in sustainable development and further advancing the circular economy!

Background

With the new EU Battery Regulation, a battery passport with traceability over the battery life cycle will be legally enforced by January 2026. The battery categories included in the Battery Regulation are divided into automotive batteries, industrial batteries, and light means of transport (LMT) batteries, and portable batteries. The battery passport will contain static and dynamic data, unique for every battery producer. During its lifecycle, the battery can be sold to Refurbish or Repurposing or Recycling companies. At each lifecycle stage, the passport needs to be updated. But all data does not need to be visible for all actors and only some data needs to be public. Finally, the battery passport needs to terminate at the battery end of life (Recycling stage).



Scope

This thesis work includes:

- Mapping the value chain of the battery life cycle for each battery category
- Performing a literature study of battery producers and application producers for each battery category in Europe and estimate volumes produced
- Proposing and deciding appropriate limitations of the scope
- Defining end of life strategies for each battery category
- Investigating
  - How to end a product passport?
  - What data needs to be updated at the end of life?
  - Who has the capability to classify a product passport end of life?
  - Who is the receiver of the information?
  - What purpose will this information have? What to do with the information?
  - How shall this data be stored? Where? For how long?
  - How to treat data security of classified battery data
- Interpretation of the results
- Presenting the findings to internal and possibly external audiences

Your contribution

MSc programs: Production/Materials/Industrial Design Engineering, Product Development, Industrial Ecology. We are looking for two students with a good understanding of industrial systems and life cycle thinking. They should have a strong interest in environmental sustainability. Additional merits include Circular Economy, Life Cycle Assessment and other environmental analysis courses.

Want to contribute to a sustainable future? Apply here!

To apply for this project please send us your CV and a short introduction letter (100-200 words) to hanna.persson@chalmersindustriteknik.se or maria.hammar@chalmersindustriteknik.se.
Examinor will be Mélanie Despeisse at Production Systems at Industrial and Materials Science
If you have any further questions don't hesitate to reach out to us!

Chalmers Industriteknik

We at Chalmers Industriteknik are a part the Chalmers family and our role as a research- and development organization is to bridge the gap between the academia and industry, with a focus on innovation for a sustainable society. You will be working in close collaboration with the Circular Economy team, which has a broad scope on everything related to the circular economy. Chalmers Industriteknik makes tomorrow ready for the future!

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