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Master thesis / Bachelor thesis / Project work

Analysis and evaluation of the potential of the sodium-ion battery for large-scale production in the automotive sector

Picture source Solarserver

Initial situation:
More and more gigafactories for lithium-ion battery cells are currently being built in Europe. However, experts keep warning of a lithium shortage due to the high demand. An alternative technology is the sodium-ion battery cell. Compared to lithium-ion, this has fewer rare materials and also has other advantages over the lithium-ion battery cell, such as cost and safety factors. However, sodium-ion technology has a significantly lower energy density. The potential of this technology for automotive applications cannot be clearly determined due to the different assessments.

Your task:
In this thesis, the functioning, properties and production method of the sodium-ion battery are to be worked out in a literature review. In particular, the potential of production in a gigafactory will be investigated. Secondly, the production method, including the choice of technology, of a lithium-ion battery cell will be compared with the production method of the sodium-ion battery cell and it will be investigated whether gigafactories that have already been built can be used for the production of the sodium-ion battery cell. Finally, an assessment of the potential of sodium-ion technology will be made based on the results obtained.

Requirements:
- Degree in engineering, computer science (or comparable)
- Structured way of working
- Good knowledge of PowerPoint, Word and Excel

Offered:
Fast processing
- Delimited tasks and flexible processing
- Professional supervision and insight into industry and practice
- Independent implementation with consultation via Microsoft Teams

Interested?
Please send a current transcript of grades as well as your CV and references to the e-mail address below.

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