Aalen University

Institute for High Integrity Mechatronic Systems (ZMS)

Lifetime Prediction for Battery Storage Systems

Safety-critical systems must have a reliable power supply, which can be achieved by means of an uninterruptible power supply using a battery. Accurate knowledge of the battery state of charge, state of health and remaining useful lifetime is essential.

We offer:

- Theses (Bachelor or Master) and research masters (MSD) with subject-specific supervision
- Flexible working hours and independent work
- Practical experience in the field of applied research
- Young and motivated team

Your profile:

- Degree in mechatronics, electrical engineering, computer science or similar degree programs / relevant work experience
- Knowledge in Python, SQL, C and VHDL
- Passionate to learn, highly motivated, responsible, independent

Your tasks:

- Battery aging and performance data analysis: Identification of battery characteristic that alternating with State of Charge and/or State of Health.
- Research on embedded suitable methods to predict battery State of Charge, State of Health and remaining useful lifetime. Methods may be based on AI approaches or other techniques.
- Operation and further development of a Battery Lifetime Testbench.
- Battery aging data management (database management)

Research on Prediction Methods

Development of Embedded implementable Algorithm
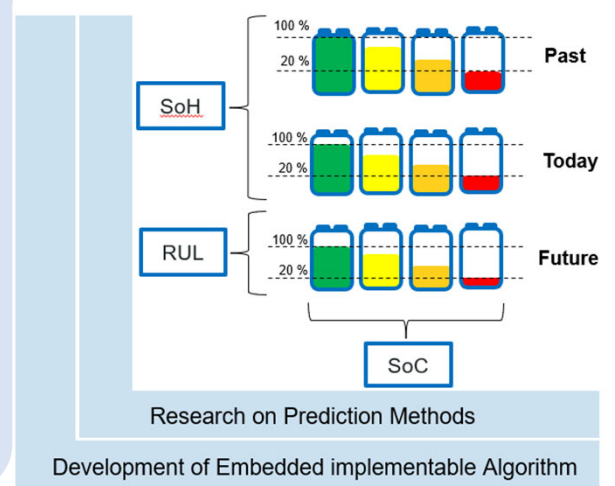
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Cooperation partners:

Advanced Mechatronics