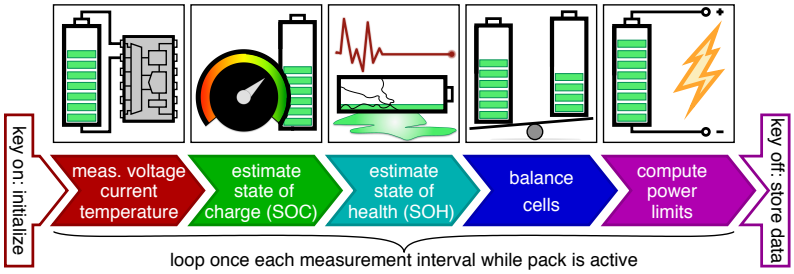
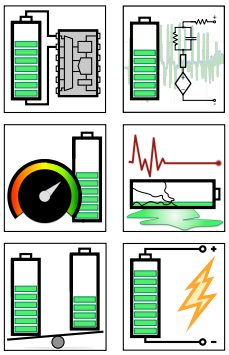
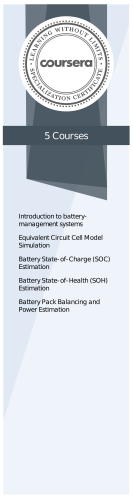
Conclusion of the specialization

- This concludes the fifth specialization course
- It also brings us to the end of the specialization
- You have now learned how to write algorithms to satisfy all computation requirements for battery-management systems





Congratulations!



UCCS

Coursera Learner

has successfully completed the online, non-credit Specialization

Algorithms for Battery Management Systems

To earn this certificate, participants must score 80%or higher on all quizzes and programming assignments. The specialization teaches participants the major functions that must be performed by a battery management system, how lithium-ion battery cells work, and how to model their behaviors mathematically. It focuses on how to write algorithms to estimate state-of-charge, state-of-health, remaining energy, and available power, and on how to balance cells in a battery pack.

Dr. Gregory L. Plett
Professor, Department of Electrical and Computer Engineering
University of Colorado Colorado Springs

- Congratulations for completing the specialization!
- I'm very pleased that you persevered to the end!

Decision point

- This brings us to the end of the non-honors version of course 5 in the BMS algorithms specialization
- Decision point:
  - Honors track has one more week in course 5, introducing concepts behind future BMS algorithms
  - Using physics-based models instead of circuit models to extend life while maximizing performance

Where from here?

- You have learned how to write state-of-art BMS algorithms
- These work well, but are limited by the models they use
  - Circuit models describe only input–output behaviors of battery cells
  - Physics-based models (PBMs) describe internal electrochemical processes also
- PBMs needed to understand aging thoroughly, to control cells to maximize performance while minimizing rate of aging
- Our research team is focused on making computationally efficient algorithms based on PBMs to perform same tasks you have learned about in this specialization
  - Good news: xKFs, bisection, etc., still apply with PBMs as they do with ECMs
  - So, what you have learned in this specialization will be fundamentally important, even if you later seek to understand physics-based BMS algorithms
- Best wishes in your application of your new skills!

Credits

Credits for photos in this lesson

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