# Article information:

Actively temperature controlled health-aware fast charging method for lithium-ion battery using nonlinear model predictive control - ScienceDirect  
<https://www.sciencedirect.com/science/article/pii/S0306261920307443>

# Article summary:

1. Analysis of effects of temperature and current on charging time and degradation.

2. Optimization of charging current using nonlinear model predictive control to reduce degradation.

3. Integration of pulse currents to recover ions out of plated lithium, resulting in significantly reduced charging time and extended cycle life.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article is generally reliable and trustworthy, as it provides a detailed analysis of the effects of temperature and current on charging time and degradation, as well as an optimization of charging current using nonlinear model predictive control to reduce degradation. The article also provides evidence for its claims by citing experimental data collected at different currents and temperatures, as well as testing the proposed method in Battery-In-the-Loop with a large format pouch type lithium ion battery. Furthermore, the article does not appear to be biased or one-sided, as it presents both sides equally and does not promote any particular product or service. However, there are some missing points of consideration that could be explored further such as potential risks associated with the proposed method or other possible solutions that could be used instead. Additionally, there is no mention of any counterarguments that could be made against the proposed method which could provide a more balanced view on the topic.

# Topics for further research:

* Lithium ion battery charging risks
* Alternatives to nonlinear model predictive control
* Battery-In-the-Loop testing
* Effects of temperature on battery charging
* Optimization of charging current
* Counterarguments to nonlinear model predictive control

# Report location:

<https://www.fullpicture.app/item/e1d9e2528d6f4671bb8ee49c550b6aeb>