

IMPROVEMENT OF CHARGING SPEED (FAST CHARGING)
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Negative impacts from the dominant use of petroleum based transportation have propelled the globe towards electrified transportation. With this thrust, many technological challenges are being encountered and addressed, one of which is the development and availability of fast-charging technologies. To compete with petroleum based transportation, electric vehicle (EV) battery charging times need to decrease to the 5 - 10 min range. This project provides a review of EV fast charging technologies and the impacts on the battery systems, including heat management and associated limitations. In addition, the project presents promising new approaches and opportunities for power electronic converter topologies and systems level research to advance the state-of-the-art in fast-charging.