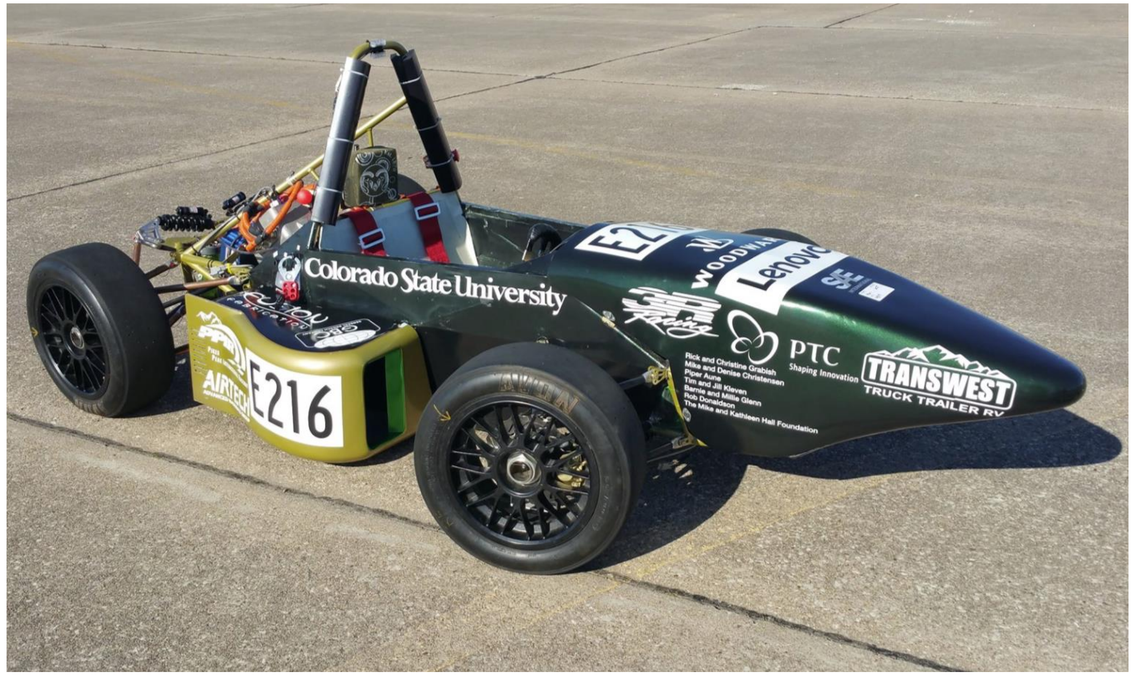
COLORADO STATE UNIVERSITY

CSU Formula SAE Vehicle Electrification

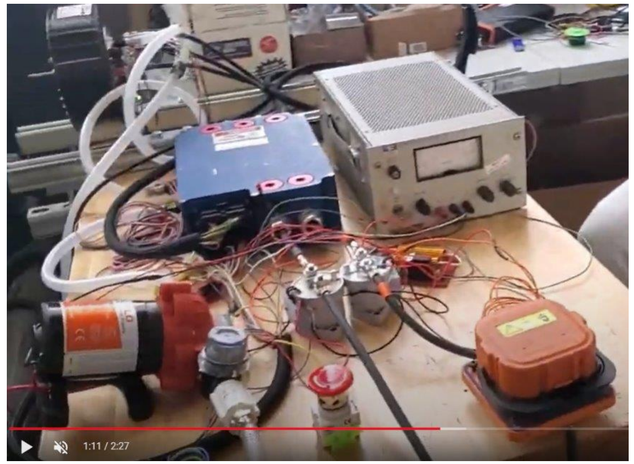
Oscar Wenham, Mechanical/Electrical Engineering, April 2024



Introduction

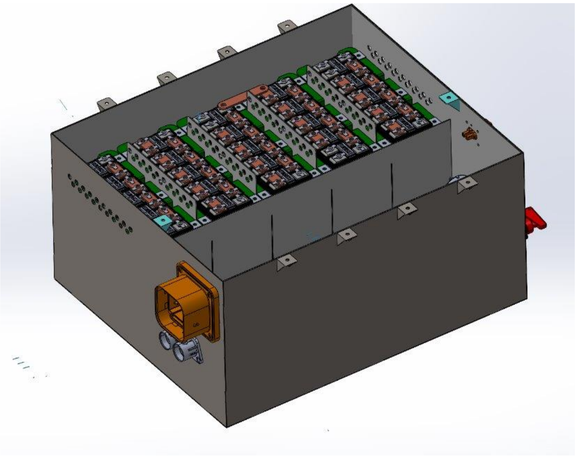


- The Seed
  - Formula SAE Electric Competition
  - EV Heritage of CSU
  - What happened?
- Background of the “problem” you are trying to solve.
  - Bring EV development experience back to CSU
  - Mecatronic system understanding
  - Modernize CSU Formula SAE

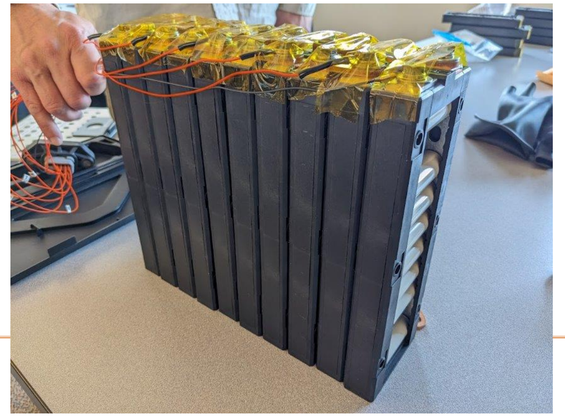


FSAE Electrification In action

- Project Overview: Our goal was to create, and construct am FSAE competition spec, high voltage battery system that can be implemented into an existing FSAE vehicle to lay the foundation of a future



- Implementation:
  - Year One
    - Compiling and assembling previously used EV drivetrain components
  - Fall Semester '23
    - Understanding FSAE rules and researching plug-in hybrid systems
  - Spring Semester '24
    - Designing battery from scratch
    - Research, analysis, assembly, testing



Results and Follow Ups

- Achievements: Built the groundwork for a bench top high voltage system to validate harness, BMS software, and more.

- Future plans: We have created more senior design projects, leadership opportunities for Ram Racing students, and prepared the transplant vehicle for electrification. Next, is proving the concept with a physical car, and building a competition vehicle

