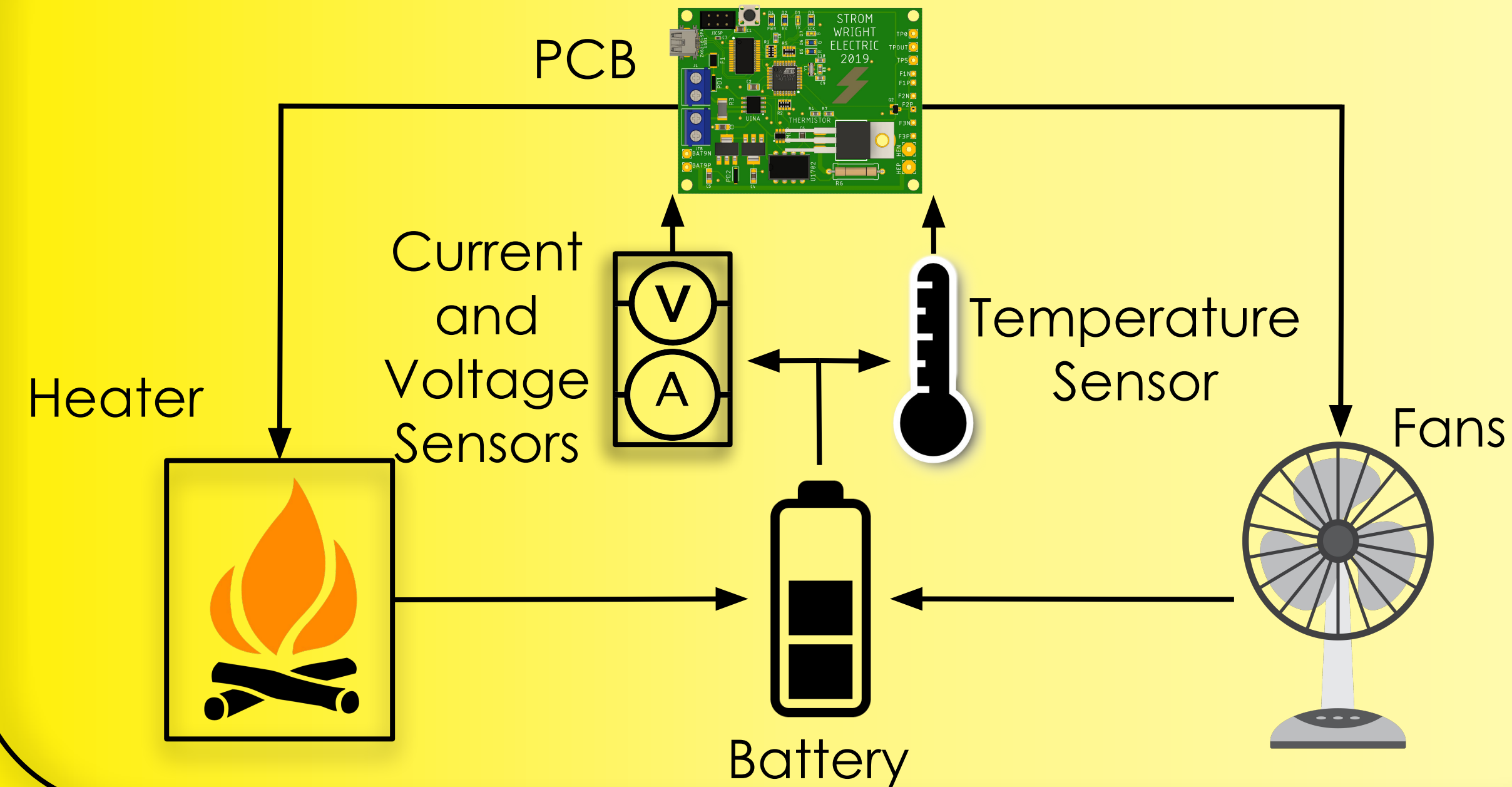
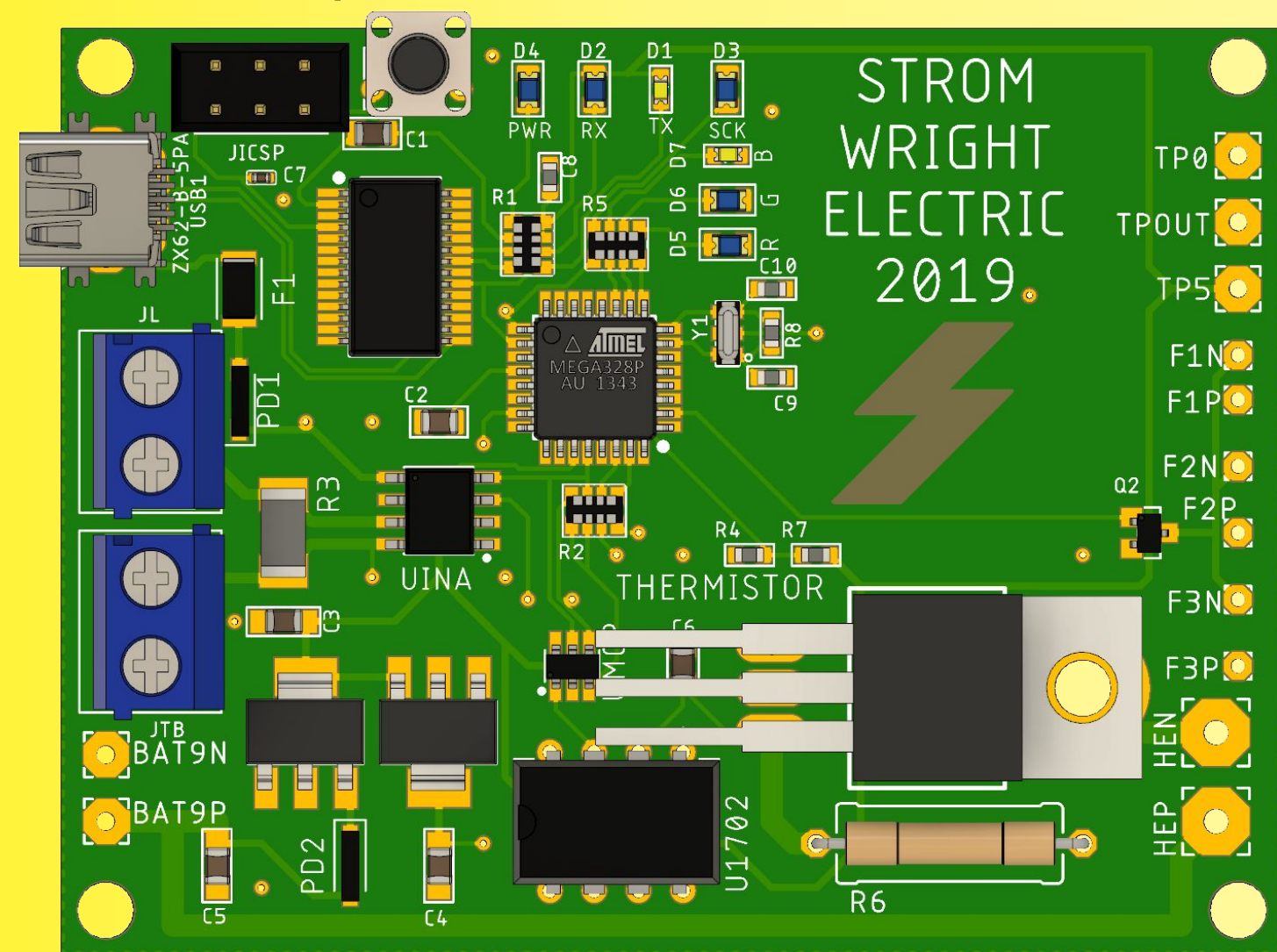


System Flow Chart



Custom PCB

Efficient heater control
Optional USB interface



Battery Box

- Holds a battery we made for testing purposes
- Allows system-level calculation of gravimetric energy density
- Future tests with flammable batteries
- Compatible with a wide range of metal-air battery chemistries

Enclosure

- Protects PCB from battery cell heat
- Light-weight
- Acts as airflow conduit
- Stackable

Fans

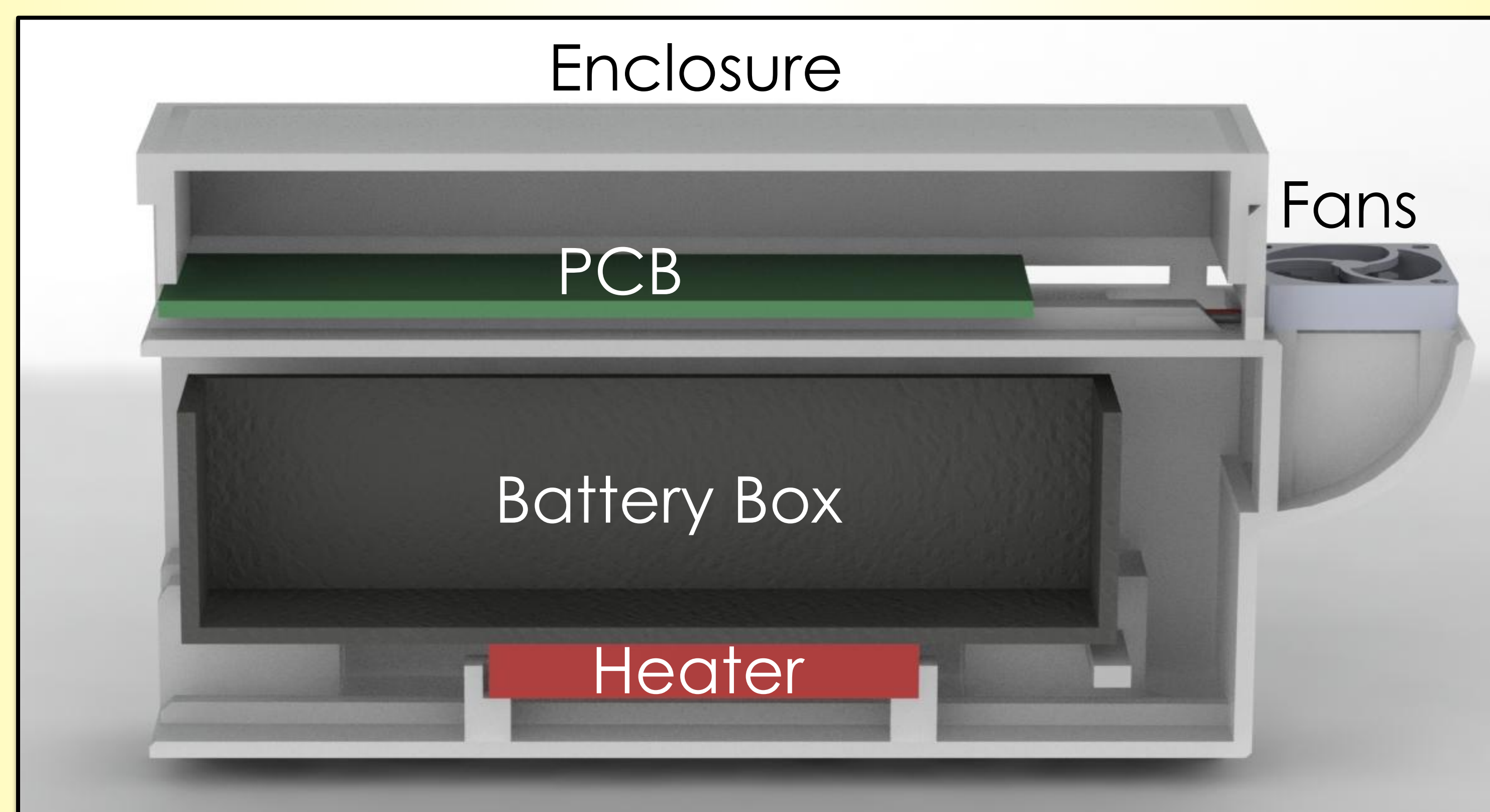
- Airflow to fuel reaction
- Low power consumption

Heater

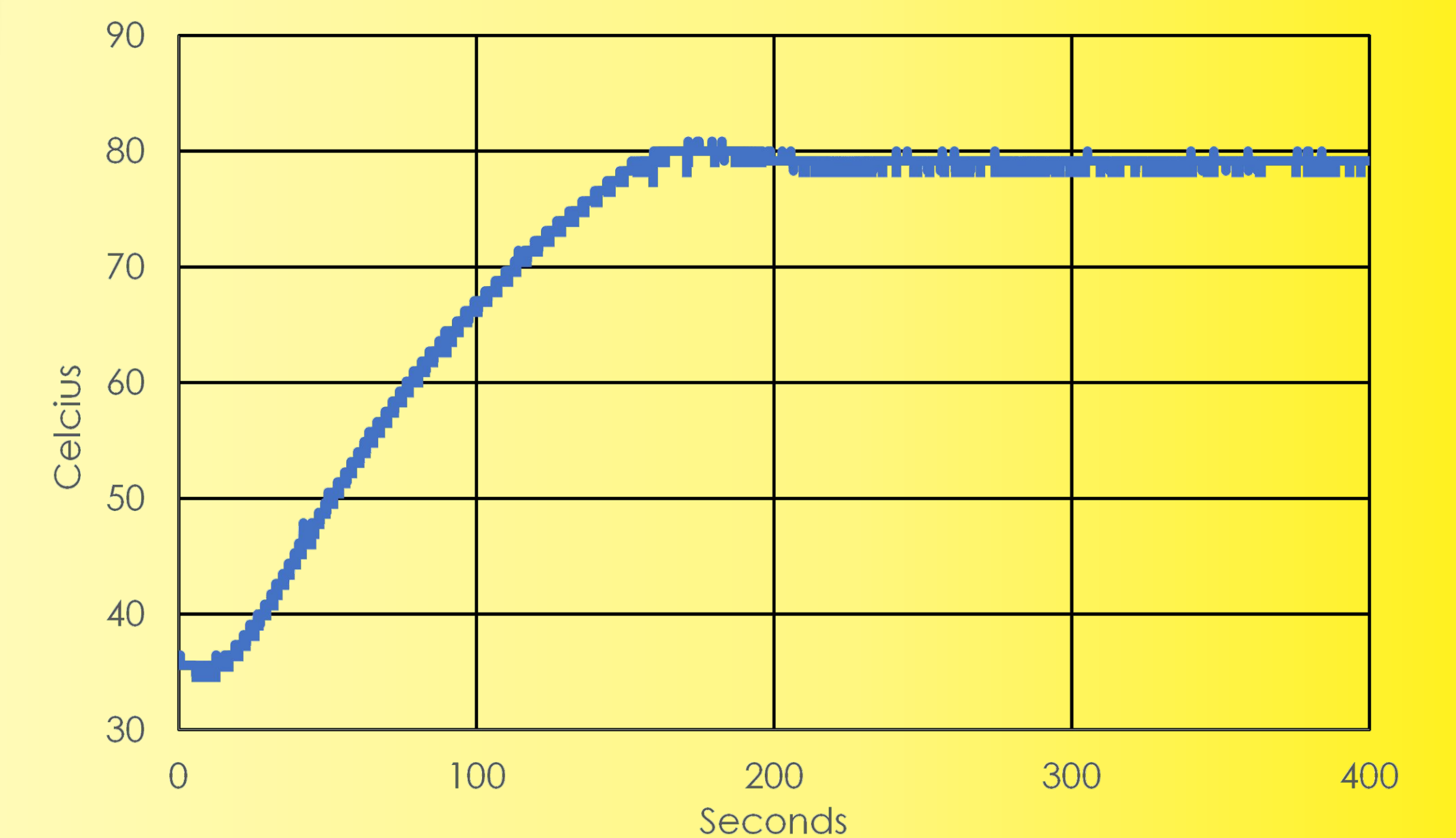
- Can reach 110°C
- Ceramic element with Aluminum shell



Advanced types of batteries, that will allow electric-powered flights, require rigorous management systems adapted to their unique needs. We have created a system that provides airflow to the battery, gives it a physical housing, measures its current and voltage, and keeps the temperature stable in order for these batteries to be viably used and evaluated.



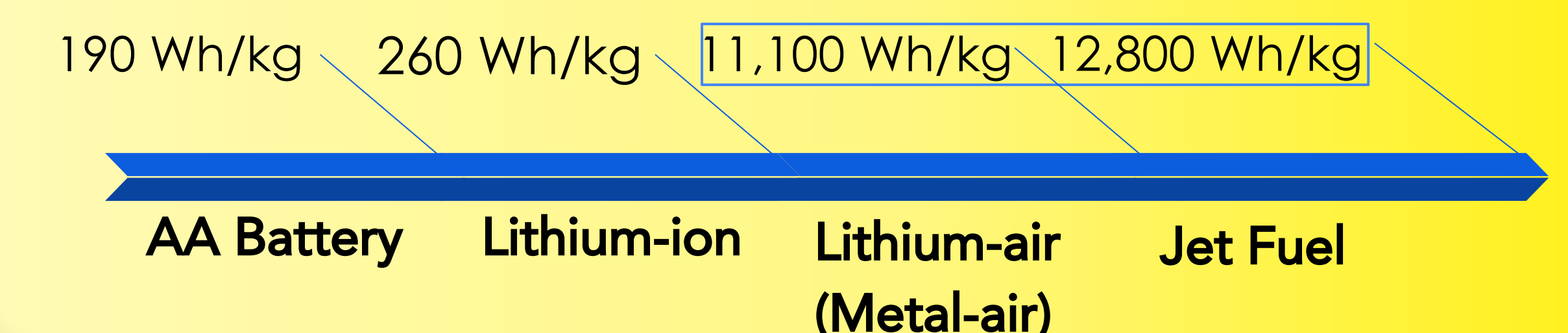
Precise Battery Temperature Control



The temperature is stable and does not greatly overshoot the 80°C target.

Molten Salt Metal Air Batteries

- Requires 80-140°C and constant airflow to fuel the reaction
- High gravimetric energy density when compared to Li ion



Criteria

Accomplished?

Lightweight	✓
Cost-effective	✓
Constant Airflow	✓
Stable High Temperature	✓
Accurate Measurements	✓