Guiding Innovation
Fostering Partnerships
Technology Overview



Smart Battery Pack with Integrated Temperature Monitoring

OTT 1797

Applications:

- Electric cars and trucks
- Battery systems for renewable energy storage
- Aircraft and other high-performance applications

Target Problem:
Current lithium-ion battery packs lack real-time temperature monitoring, making it hard to detect issues early and increasing the risk of thermal runaway, fires, and costly failures.

Solution:
A smart battery pack that uses built-in electronics to monitor cell health and detect temperature changes early, preventing failures and improving safety.

Key Benefits:

- **Enhanced Safety:** Detects poor cell health early to prevent fires and explosions
- **Continuous Monitoring:** Works while the battery is in use
- **Cost Efficiency:** Costs less than 1 dollar per cell
- **Projected Impact:** Has potential to improve battery reliability and lifespan
- **Scalable Design:** Adaptable to many battery applications, including cars, planes, and large energy storage systems

About this Technology:
This invention offers a low-cost way to monitor internal battery cell temperatures in-situ and detect early signs of thermal runaway. By using an innovative method to inject diagnostic signals, the system delivers real-time temperature data to the battery management system, enabling proactive intervention before thermal runaway occurs.

Stage of Development:
Laboratory prototype demonstration.

Partnering Opportunity:
We are seeking partners to help develop this technology into a commercial product. Collaboration opportunities include prototype development, testing, and integration into EV or other battery platforms.

Intellectual Property (IP):
Protected under one or more patent applications filed with the USPTO. UWMRF manages the IP and works with partners to support commercialization.

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Please contact our office to share your business' needs and learn more.