

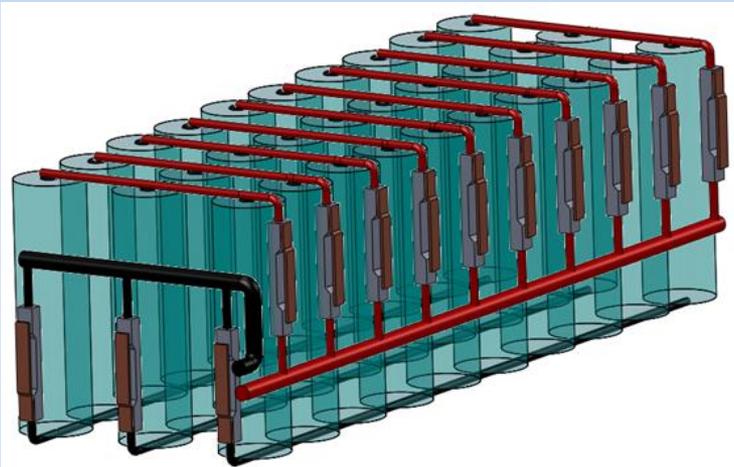
# A Multi-Purpose, Intelligent, and Reconfigurable Battery Pack Health Management System

Penn State University, Gannon Motors & Controls, Univ. of Michigan – Dearborn, Johnson Controls (industrial advisor)

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## Technology

This project will develop, demonstrate, and seek to commercialize a battery pack architecture that uses reconfigurable power electronics to enable accurate cell- and pack-level health diagnostics and health-conscious plug-and-play battery pack management.



## Advantage and Differentiation

The project will

- Utilize battery pack reconfiguration to enable:
  - Graceful degradation and safety maximization of the pack
  - Advanced health prognostics/diagnostics for individual cells as well as the entire pack
  - Plug-and-play control for battery repurposing, especially for “second life” applications of automotive battery packs
- Validate above technologies using robust laboratory testing of full battery packs
- Provide a “gold standard” cost-benefit analysis for battery pack reconfigurability

## Performance Targets

Metric	State of the Art	Proposed
Reconfigurability	Replace pack	Replace cells
Diagnostics	Pack-level	Cell-level
Repurposing	Rarely/never	Often / always

Please contact regarding: Commercialization & Tech Transfer