# Flow Battery Structures to Improve Performance/Reduce Manufacturing Cost

FARADAY TECHNOLOGY, INC.
CASE WESTERN RESERVE UNIVERSITY EST. 1826 think beyond the possible
Pacific Northwest NATIONAL LABORATORY Proudly Operated by Battelle Since 1965

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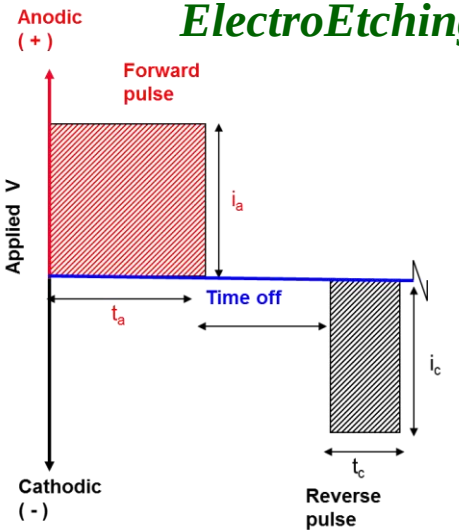
## Goal/Objective

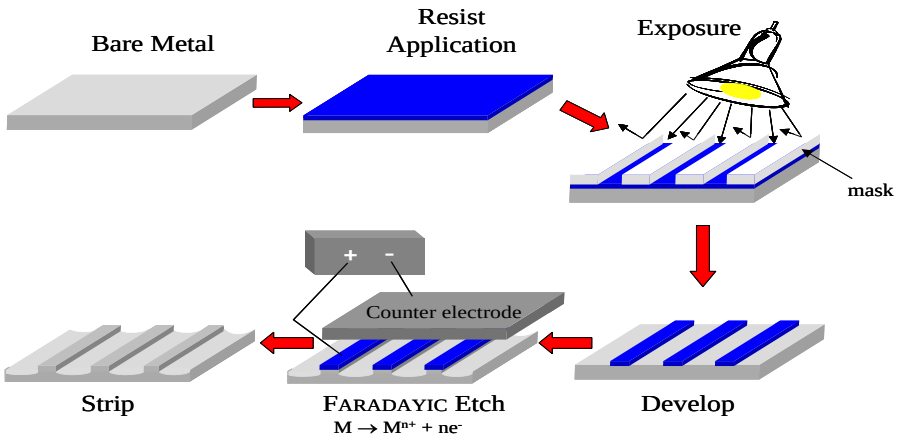
*Develop, demonstrate and commercialize a **versatile, low cost manufacturing** process for fabrication of flow battery plate components enabling improved performance and reproducible integration of stack components:*

- **Versatile** ➔ applicable to most flow battery systems
  - Materials Ti, Ta, Alloys, SS, carbon/graphite
- **Low cost manufacturing**
  - Pattern/feature flexibility for R&D optimization
  - Low Rate Initial Production (LRIP) trials
  - Volume manufacturing

## FARADAYIC® ElectroEtching/ElectroCell




## Low Cost Pattern/Feature Definition




## Initial Activities & Future Work

- Modeling used to identify feature size and shape to enhance the limiting current density while minimizing pumping power for flow batteries
- Experimental work in progress to fabricate plates for performance tests in relevant test systems
- Manufacturing cost assessment for high volume production completed
- Establish design rules for FARADAYIC® ElectroEtching for various metals and surface features
- Manufacturing cost assessment for low volume production