



Presenter

Dr. Paul G. Rasmussen CEO Vinazene Inc. 734-233-3964 www.vinazene.com

Introduction Redox Flow Batteries (RFB) are of great utility for energy storage by de-coupling energy and power.

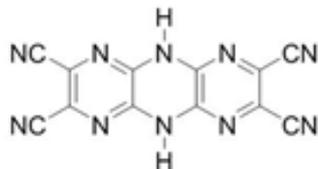
Background Metal based RFB electrolytes are the current state of the art; an organic active material provides a competitive, greener alternative

Project Goal Vinazene is developing an organic RFB using proprietary compounds, combining the manufacturing and operational advantages of a single substance with lower cost.

Phase II Objectives

Phase II Objective #1

Rapid and cleaner synthetic pathway for the key 3-Ring electroactive material:

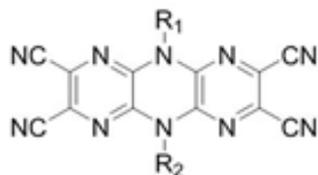


Status

Successful scaleup of the key 3-Ring electroactive materials in quantities (>100g @ 80% yield) sufficient to support larger RFB prototypes

Phase II Objective #2

Synthesis of asymmetrical 3-Ring derivatives:

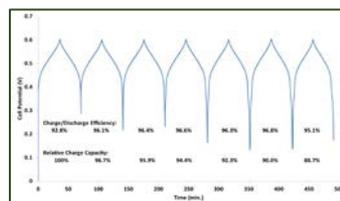


Status

Successful synthesis of more than 60 "Z" compounds. The R1 and R2 positions represent sites of property tailoring functionalization.

Phase II Objective #3

Validation of a single cell 4W RFB prototype.



Status

4W device vetted with electroactive quinone compounds; conversion to non-aqueous chemistry underway.

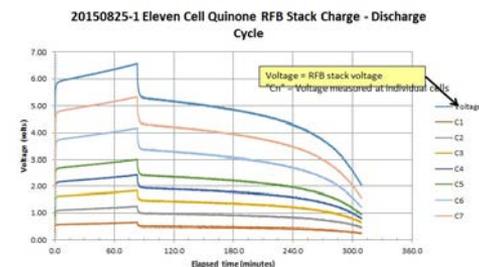
Phase II Objective #4

Fabrication & Testing of a 40W prototype.



Status

40W device vetted with electroactive quinone compounds, as shown by the charge/discharge voltages across the series connected cells.



Commercialization Status Vinazene is actively seeking commercialization partners among established companies that can provide the next steps of scaleup and market validation of its materials.