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Enabling More Efficient Solar Thermal Energy Production and Storage

Allan Wilson

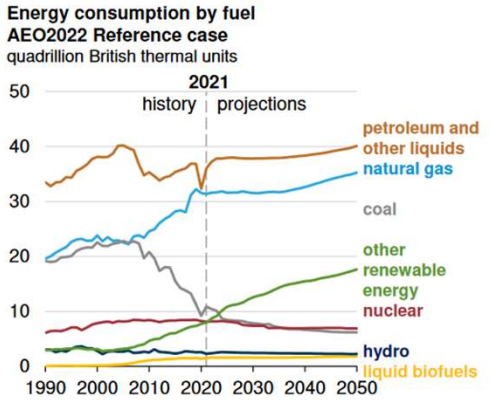
Phase Equilibria for Tetraarylphosphonium Based Ionic Liquids:

Enabling More Efficient Solar Thermal Energy Production and Storage

Allan C. Wilson,[1] Marshall D. Manning,[1] Dr. James H. Davis, Jr.,[2] Dr. Brooks D. Rabideau,[1] and Dr. Kevin N. West[1]

[1]Department of Chemical & Biomolecular Engineering, [2]Department of Chemistry, University of South Alabama, Mobile, AL

INTRODUCTION

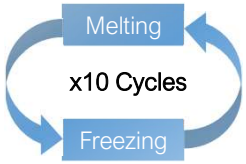


- **Concentrated Solar Power** (**CSP**) stores & transfers energy using a **Thermal Energy Storage Fluid** (EIA AEO 2022)

MATERIALS AND METHODS

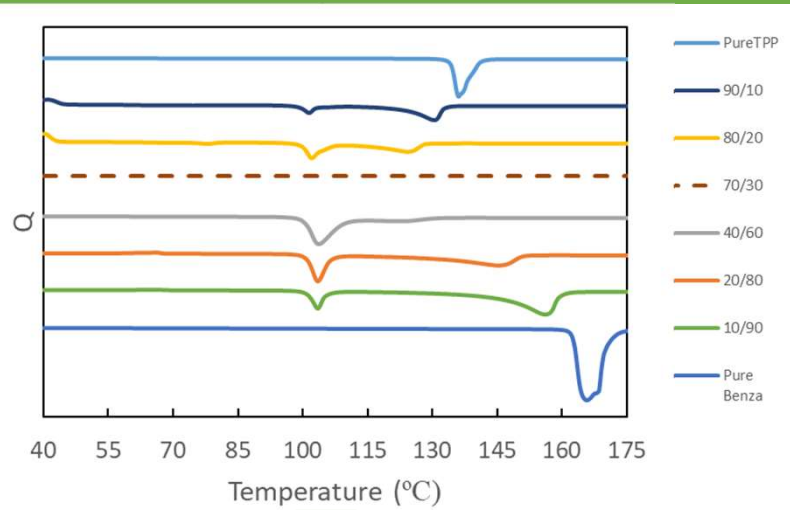
All samples were run using differential scanning calorimetry (DSC) on a **TA DSC 2500**.

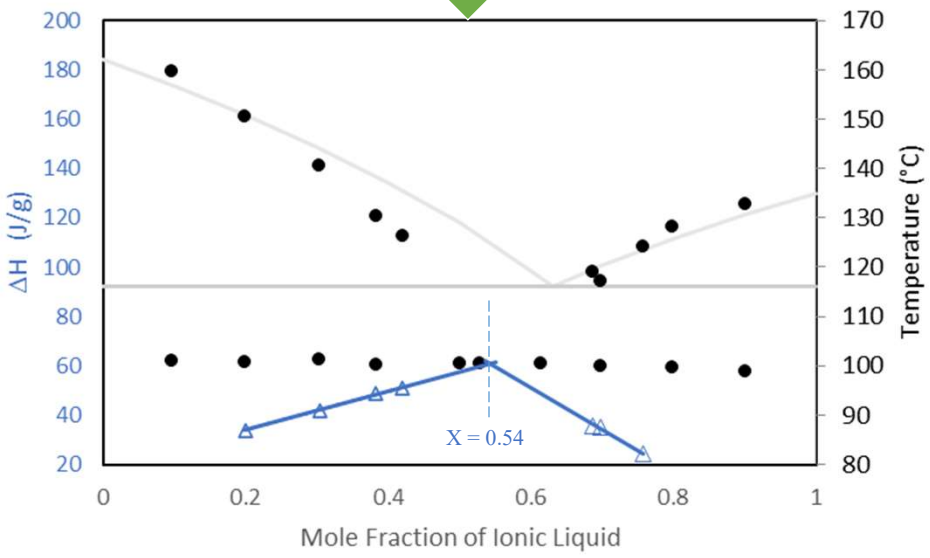
1 Fully Mix Sealed Samples via:



2 Average Next 5 Cycles for Results

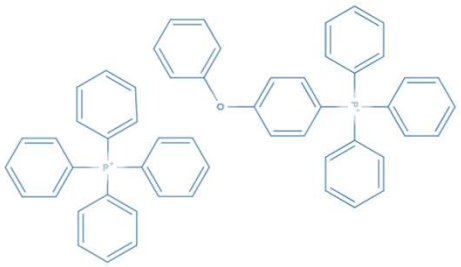
RESULTS





Significantly decreased melting temperature was found by combining TPP bistriflimide with behaviorally similar compounds

FUTURE WORK



- Evaluation of other tetraarylphosphonium based cations
- Exploration of structure / property relationships of compounds for **multiple use cases**

REFERENCES

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