

**NEW POLYMER ELECTROLYTE CELL SYSTEMS**

**NASA Research Program NRA-00-G R C-1**

**Project #1696-518-6625**

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**The progress on this project has been reported in documents submitted with the following dates:**

**Progress Report, November 1, 2001  
Progress Report, April 11, 2002  
Progress Report, September 26, 2002  
Progress Report, July 26, 2003  
Progress Report, September 25, 2003  
Progress Report, January 22, 2004**

**Publications and Presentations to document the results of the research are listed below.**

**There were no patents filed on the basis of this research.**

## PAPERS PUBLISHED

1. Pappenfus, Ted M.; Henderson, Wesley A.; Owens, Boone B.; Mann, Kent R.; Smyrl, William H. **Complexes of Lithium Imide Salts with Tetraglyme and Their Polyelectrolyte Composite Materials.** *Journal of the Electrochemical Society* (2004), 151(2), A209-A215.
2. Pappenfus, Ted M.; Henderson, Wesley A.; Owens, Boone B.; Mann, Kent R.; Smyrl, William H. **Ionic-liquid/polymer electrolyte composite materials for electrochemical device applications.** *Polymeric Materials Science and Engineering* (2003), 88 302.
3. Pappenfus, Ted R.; Henderson, Wesley A.; Owens, Boone B.; Mann, Kent R.; and Smyrl, William H. **Ionic Conductivity of a poly(vinylpyridinium)/Silver Iodide Solid Polymer Electrolyte System.** *Solid State Ionics* (in press 2004).
4. Pappenfus, Ted M.; Mann, Kent R.; Smyrl, William H. **Polyelectrolyte Composite Materials with  $\text{LiPF}_6$  and Tetraglyme.** *Electrochemical and Solid State Letters*, (2004), 7(8), A254.

## PRESENTATIONS

1. Pappenfus, Ted M.; Henderson, Wesley A.; Owens, Boone B.; Mann, Kent R.; Smyrl, William H. **Ionic-liquid/polymer electrolyte composite materials for electrochemical device applications.** Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 (2003),