

lithium, magnesium and sodium and which is formed by complexing an alkaline metal triflate salt, polyethylene oxide and fillers, with at least one ester, and an ether, or plurality of ethers or esters of different boiling points as co-solvents to form an electrolyte.

**5529859**

### **ELECTROLYTE FOR A SECONDARY CELL**

Shu Zhi X; McMillan Roderick; Murray John J Nepean, CANADA assigned to National Research Council of Canada

A conventional electrolyte for a secondary cell having a carbonaceous anode is comprised of an alkali metal salt dissolved in an organic electrolyte solvent. Intercalation and de-intercalation during repeated discharge/charge cycles of the secondary cell using a conventional electrolyte solvent causes continual exposure of bare surfaces of the carbonaceous material to the electrolyte, resulting in continual consumption of electrolyte in the formation of new passivation films on the bared or partially covered surfaces, adversely affecting the performance and capacity of the cell. In accordance with the present invention, at least a portion of the organic electrolyte solvent is replaced with a chloroethylene carbonate solvent capable of forming a very stable passivation film. The performance and capacity of the secondary cell is improved substantially by the addition of the halogenated organic solvent to propylene carbonate.

**5529860**

### **ELECTROACTIVE HIGH STORAGE CAPACITY POLYACETYLENE-CO-POLYSULFUR MATERIALS AND ELECTROLYTIC CELLS CONTAINING SAME**

Skotheim Terje A; Trofimov Boris; Grigorevna Malkina A; Koralev Igor P Shoreham, NY, UNITED STATES assigned to Moltech Corporation

The present invention relates to novel electroactive energy storing polyacetylene-copolysulfur (PAS)

materials of general formula  $(C_2S_x)_n$  wherein  $x$  is greater than 1 to about 100, and  $n$  is equal to or greater than 2. This invention also relates to novel rechargeable electrochemical cells containing positive electrode materials comprised of said polyacetylene-co-polysulfur materials with improved storage capacity and cycle life at ambient and sub-ambient temperatures.

**5531871**

### **MOLECULAR COMPLEXES FOR USE AS ELECTROLYTE COMPONENTS**

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An molecular complex is provided which includes a linear polymer associated with a cyclic molecule to form a rotaxane of the general formula, (\*See Patent for Chemical Structure\*) where R1 and R2 are blocking end groups of size and character sufficient to prevent dethreading of the rotaxane and said R1 and R2 the same or different; where the cyclic molecule comprises a cyclic skeleton and at least one A functional group, said functional group attached to the cyclic skeleton; where A is selected from the group consisting of polymerizable functional groups, cation complexing groups, anion complexing groups and ionic species; and wherein at least one of R1, R2 and A are selected from the group consisting of cation complexing groups, anion complexing groups and ionic species. The molecular complex may used in an electrolyte.

**5531920**

### **METHOD OF SYNTHESIZING ALKALINE METAL INTERCALATION MATERIALS FOR ELECTROCHEMICAL CELLS**

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A method for preparing an alkaline metal transition metal oxide charge storage material for electrochemical cells. The material may be used in a lithium rechargeable electrochemical cell along with a conventional lithium intercalation electrode. The material may be prepared by providing a transition metal hydroxide and reacting it