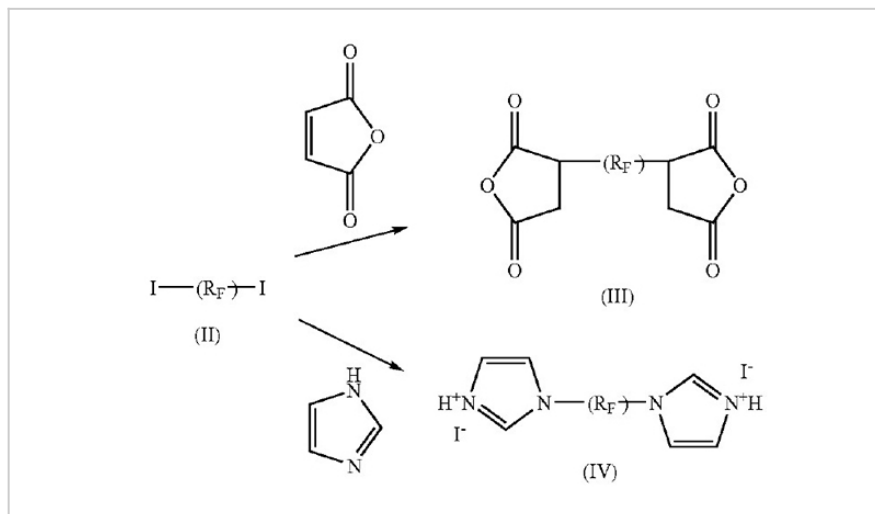


Ferroelectric Fluoropolymers with Improved Reactivity & Energy Density

ID# 2006-3187



Conversion of Terminal Iodo Groups

Technology Summary

Ferroelectric polymers exhibit many desirable properties, such as flexibility, light weight, high mechanical strength, an ability to be processed readily into large area films. Despite these advantages, ferroelectric polymers suffer the disadvantage of having low electric field sensitivity which limits their applications.

The present invention relates to chain end functionalized fluoropolymers that may exhibit good chemical reactivity, such as for crosslinking reaction and composite preparation, high breakdown electric field $E > 100$ MV/m (megavolts per meter), high dielectric constant ($E_r > 10$), and high energy density. The resulting chain end functionalized fluoropolymers can advantageously have high dielectric and ferroelectric properties as well as good chemical reactivity.

Application & Market Utility

The disclosed fluoropolymer has high dielectric constant, high field sensitivity, and high energy density. It can sustain robotic performance for a long period of time with large electromechanical response and ultrahigh energy density under high electric field.

Next Steps

Patent 7,842,390 issued 11/30/2010. Seeking licensing opportunities.

TECHNOLOGY READINESS LEVEL

1-3

Seeking

Investment | Licensing | Research

Keywords

- dielectric
- actuators
- transducers
- fluoropolymers
- ferroelectric

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