Development of New Separation Materials for Organics and Metal Ions from Cyclic Compound as a Monomer

2003 Fiscal Year Final Research Report Summary

Development of New Separation Materials for Organics and Metal Ions from Cyclic Compound as a Monomer

Research Project

Project/Area Number

14550834

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

高分子合成

Research Institution

Kanazawa University

Principal Investigator

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Project Period (FY)

2002 – 2003

Keywords

Cyclic Oligomer / p-Hydroxycalix[6]arene / Calix[4]resorsinarene / Polymerization / Aggregation stale of cyclic units / lonophore / Cage" structure / Nano-size reactor

Research Abstract

New separation materials were prepared from cyclic compounds as a monomer. The separation material will have an excellent separation and extraction ability for organics and also for metal ions, because they have many binding sites with various cavity sizes in the molecule. In this project, we proposed to use calixarenes as cyclic compound. Calixarenes are cyclic phenolic oligomers and their selective cation extraction ability is particularly attractive. Calixarenes with some ligands(esters, ketones and amines) showed the ionophoric abilities for alkali metal cations. The influence of conformation and size of calixarenes on the selective extraction for alkali metal cations was determined in detail by using the ethyl acetate derivatives. In spite of many studies concerning the synthesis and property of calixarens, very few of polymers containing calixarene units have been reported. Recently, we have investigated the polymerization of calixarenes and focus our interest on two calixarenes ⋯▾ More

Research Products (6 results)

All | Other

All | Publications (6 results)

[Publications] Y.Nakamoto et al.: "Synthesis of C-unalkylated Calix[4]resorcinarene from 1,3-Dimethoxybenzene-Formaldehyde Condensation"Polymer Bulletin. 47. 493-499 (2002)

[Publications] Y.Nakamoto et al.: "Two Stereoisomers of C-unalkylated Calix[4]resorcinarene and the Conformation Change"Polymer Bulletin. 48. 423-429 (2002)

[Publications] Y.Nakamoto et al.: "Synthesis of Methylene-bridged Cyclic Resorcinol Oligomer"Journal of Network Polymer, Japan. 23. 134-141 (2002)

[Publications] Y.Nakamoto et al.: "Synthesi s of C-unalleviated Calix[4]resorcinarene from 1,3-Dimethoxybenzene-Formaldehyde Condensation"Polymer Bulletin. 47. 493 (2002)

[Publications] Y.Nakamoto et al.: "Two Stereoisomers of C-unalkylated Calix[4]resorcinarene and the Conformation Change"Polymer Bulletin. 48. 423 (2002)

[Publications] Y.Nakamoto et al.: "Synthesis of Methylene-bridged Cyclic Resorcinol Oligomer"Journal of Network Polymer, Japan. 23. 134 (2002)

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