

論文名 : Oxygen permeability of fully-conjugated polymers and their post-polymerized products (要約)
(全共役高分子とその後重合生成物の酸素透過性)

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(以下要約を記入する)

This thesis aims to enhance the performance of gas separation membranes and is organized into four parts and eight chapters, based on different research methods and materials.

The study is divided into four parts, with each part examining the gas permeation properties of linear polymers. In the first part, we investigate the gas permeation properties of linear polymers containing conjugated diynes in the main chain obtained by Glaser polymerization, along with the properties of the resulting products after polymerization.

The second part focuses on the gas permeation properties of linear polymers obtained by Sonogashira polymerization and their properties after polymerization.

The third part of the study centers on the synthesis of poly(substituted phenylacetylene)-graft-poly(phenyleneethylene) and the analysis of its oxygen permeability. This section includes the study of new polymers and grafted products.

The fourth and final part of the study deals with the enhancement of oxygen permeability of poly(substituted phenylene)s and poly(phenyleneethylene)s. This part is divided into two sections. The first section discusses the enhancement of oxygen permeability of poly(substituted phenylene), which has been previously published in the journal Polymer. The second section investigates the enhancement of oxygen permeability of poly(phenylenediyne)s with polydimethylsilylsiloxane.