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 Recycling Preparative HPLC
LaboACE LC-5060

Recycling by ODS Column

Separation of Triphenyl trithiazolyl benzenes

Keyword:

Separation of Position Isomers of Triphenyl trithiazolyl benzene, ODS Column, Separation by Polarity

Introduction

In preparative HPLC, the column length is one of the key factors to get better separation. However, there is a limit in length due to restriction on the pressure the column can endure.

Recycling preparative HPLC is the solution to the problem. By cycling the sample solution back to the same column repeatedly, it causes the same effect as a longer column is used. Further, no solvent is consumed during the cycles. So it is the ideal way to efficiently increase separation (resolution) ability.

This recycling system, which is free of time-consuming method development work, can be basically applied to any kinds of columns including those for adsorption and partition chromatographies.

Here is a good example of recycling preparative HPLC using a reversed-phase column.

Experiment & Results

Sample: Mixture of position isomers of Tri(4-isopropyl-4,5-dihydro-2-oxazolylphenyl) tri(2-thiazolyl) benzene

With highly polar eluent, we got good separation but the amount injectable was very limited due to poor solubility. On the other hand, when we tried eluents of lower polarity for better solubility, separation was not good enough. So we tried Recycling Preparative HPLC using a reversed phase column.

Instrument : LC-9110NEXT (Detector : UV (254 nm))

Column : JAIGEL-ODS-AP, SP-120-15

Mobile phase : Methanol / Water = 9/1

Flow rate : 9.0 mL/min

Injection qty. : 20 mg / 1 mL

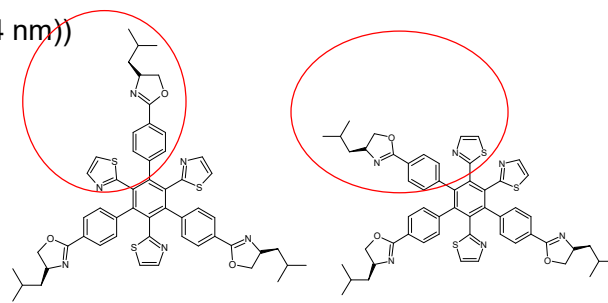


Fig. 1

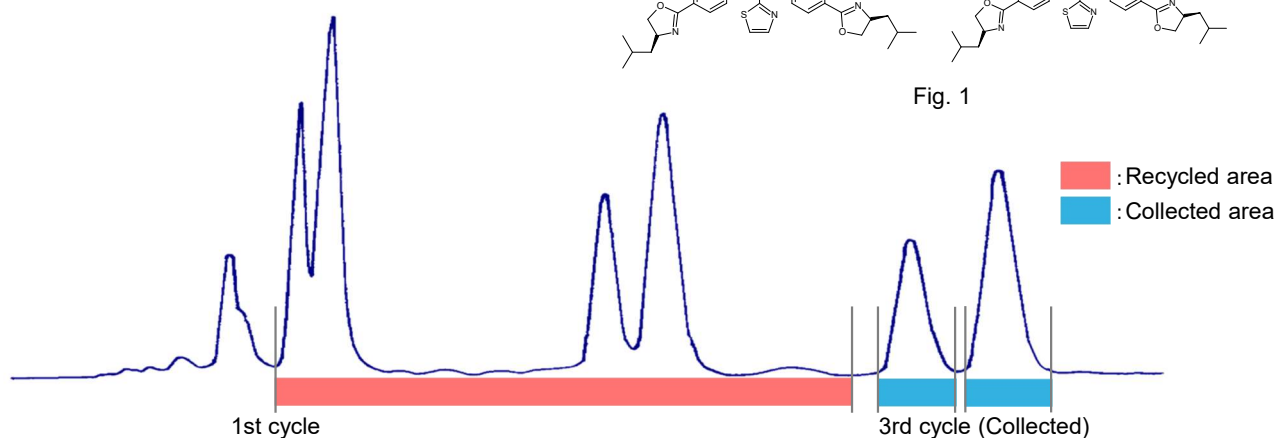


Fig. 2

Conclusion

The isomers were separated at the 3rd cycle.

*Sample provided by courtesy of Prof. Shionoya, School of Science, The Univ. of Tokyo