

Related product : Recycling Preparative HPLC Series

Recycling Preparative HPLC  
LaboACE LC-5060

## Recycling by Fullerene Separation Column 1

**Keyword:**

Separation of Endohedral Hydrogen Fullerene, Recycling Separation

### 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 ability.

For separation of fullerenes, recycling preparative HPLC is very often employed in combination with columns designed for the purpose and has gained great popularity among fullerene researchers.

Here is an example of recycling preparative HPLC using a fullerene separation column.

### Experiment and Results

Sample: Mixture of fullerene and endohedral fullerene containing molecular hydrogen (Fig. 1)  
Trial to separate by fullerene columns did not succeed. So we tried recycling preparative HPLC using the same column.

Instrument : LC-9101 (Detector : UV (254 nm))  
Column : COSMOSIL Buckyprep-10 + Buckyprep-10 in series  
Mobile phase : Toluene  
Flow rate : 5 mL/min

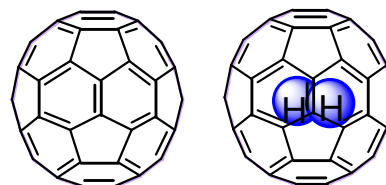


Fig. 1

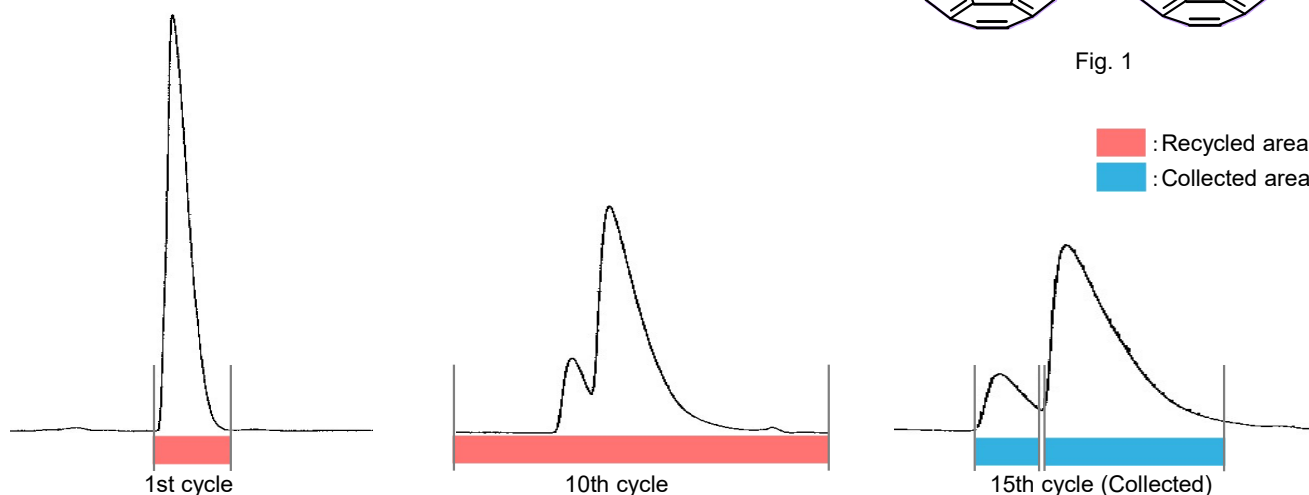


Fig. 2

### Conclusion

The two fullerenes were separated at the 15th cycle.

Data provided by courtesy of Prof. Yasujiro Murata, Institute for Chemical Research, Kyoto University.