

有機合成化学共通特論「先端有機化学」(伊藤正人)

2009 年度試験問題

2009 年 12 月 22 日

鏡像異性体の分離法に関する下記の記事 (W. Graham, *Chemistry & Industry (London)*, 1962, 1533) の内容について感想文を A4 二枚以内にまとめて 2010 年 1 月 8 日までに提出してください。ただし引用文献の *J. Cachinnation* が著者のユーモアに基づく架空の雑誌であることを踏まえて、そのユーモアを論じることを目標としてください。

Separation of Enantiomorphs by Gas Chromatography

SIR,—The gas-chromatographic separation of enantiomorphs is the object of intensive investigation, as revealed by several recent communications in *Chemistry & Industry*. Accordingly, we think it appropriate to make known our approach to this problem.

Use of optically active column material is the essential feature of previous work. It occurred to us some time ago that a more effective separation might be achieved if this principle could be combined with the use of mirrors, the latter having been associated with stereochemistry for many years. We were led to this view by a consideration of the mechanism of adsorption at a mirrored surface. The vacant sites adjoining an adsorbed molecule of the *d*-form would appear to be occupied by molecules of the *l*-form. Fewer adsorption sites would thus be available to the *l*-form, which as a consequence should be eluted first from the column. Evidently, a modification of this hypothesis would account also for the prior emergence of the *d*-form.

We consider that a satisfactory column for work of this nature might be packed with glass micro-beads, mirrored by the thermal decomposition of dextrorotatory methyl sec.-butylmercury. An elaboration of the theory will soon appear¹ and it is hoped that further details will be published when experimental confirmation has been obtained.

Yours faithfully,
WILLIAM GRAHAM

41, Sturges Road,
Reading,
Massachusetts, U.S.A.

Reference

¹ *J. Cachinnation*, in press.