

第18回 応用化学セミナー



Prof. Julian Koe

International Christian University

2009年7月8日 (水) 13:30~14:30
学術情報センター視聴覚室 (C5棟)

Coiling a Silicon Snake

Synthesis, Conformation and Chirality of Polysilanes



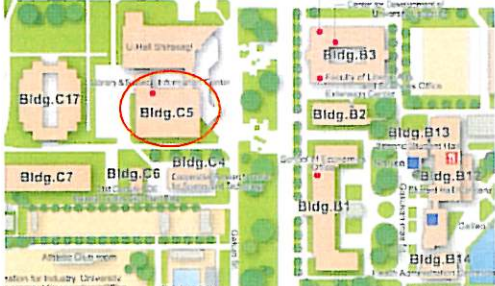


Koe先生はイギリス出身の有機金属化学者です。Exeter大学で博士号を取得後、東北大学で博士研究員を数年間勤め、現在では国際基督教大学の上級准教授をされています。

昨年に引き続き、大学院の集中講義(7月6-8日)のため来学される機会に応用化学セミナーでの講演をお願いしました。多くの皆様の来場をお待ちしております。なお、集中講義の単位取得希望者は必ず出席してください。

連絡先: 水野一彦 (内線5885), 池田 浩 (内線5882)

18th Seminar on Applied Chemistry

<p>Coiling a Silicon Snake Synthesis, Conformation and Chirality of Polysilanes</p> 	<p>by</p>  <p>Prof. Julian R. Koe <i>International Christian University</i> <i>Tokyo, Japan</i> <i>koe@icu.ac.jp</i></p>	<p>on WED, 8th, July 2009 13:30–14:30</p> <p>at C5–Lib. & Inform. Centre, AV Room</p> 
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<Abstract> Polysilanes comprise a inorganic polymer backbone of linearly catenating, σ -conjugating silicon atoms, as shown in Chart 1. These electronically delocalised silicon polymers are characterised spectroscopically by a UV absorption due to the Si σ - σ^* transition at wavelengths between 300 and 400 nm. The absorption is a sensitive function of molecular weight, substituent type, electronic and steric effects and conformation, and this differentiates them clearly from their carbon analogues and gives rise to potential for optoelectronic applications.

Polysilanes typically have a helical main chain, with equal proportions of left and right twists, giving rise to internal racemates. In a chiral field, however, a preferential screw sense of the main chain helix can be induced, for which the sign and magnitude of the dissymmetry ratio, g_{abs} (ratio of CD to UV absorption intensity, $\Delta\epsilon/\epsilon$), has a marked dependence on side chain structure, type of chiral field, solvents and temperature.^{1,2}

This talk will give some background to the polysilanes and optical activity in polysilanes and then go on to present some of our results on inducing and controlling helicity and supramolecular helicity in these systems.^{3,4}

<References>

- [1] J. R. Koe, M. Fujiki and H. Nakashima, *J. Am. Chem. Soc.* **1999**, *121*, 9734-9735.
- [2] J. R. Koe, M. Fujiki, M. Motonaga and H. Nakashima, *Chem. Commun.* **2000**, 389-390.
- [3] J. R. Koe, M. Fujiki, M. Motonaga and H. Nakashima, *Macromolecules* **2001**, *34*, 1082-1089.
- [4] W. Peng, M. Montonaga and J. R. Koe, *J. Am. Chem. Soc.* **2004**, *126*, 13822-13826.

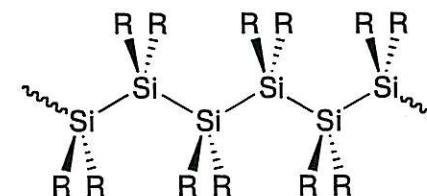


Chart 1.

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