掲示

21 世紀 COE 特別講演会

日　時： 11 月 10 日(水) 13：30～15：40

講演会場： A2－118 号室（桂キャンパス分子工学会議室）

1. 講演者 : Hans-Peter Loock（Dept. of Chemistry, Queen's University）

講演題目 : Laser Chemistry: Applications in molecular physics and analytical chemistry

講演内容：

In this talk two very different applications of lasers in chemistry are going to be discussed.

One set of research projects was developed out of a collaboration with two analytical chemists at Queen's (Brown and Oleschuk) and involved the development of greatly improved absorption detectors based on the ring-down of an optical pulse in a fiber-optic loop (fiber-loop ring-down spectroscopy: FLRDS). This work has possible applications as a general and sensitive probe of contaminants in water, but also in the developments of absorption detectors for microfluidic devices.

The other part of our research is dedicated to the spectroscopy and, especially, to the dynamics of high-lying excited electronic states of small molecules and molecular clusters. We use lasers to ionize molecular beam cooled molecules and image the charged photofragments on a position sensitive detector. Images of photoelectrons and photoions can then be used to reconstruct potential energy curves and to quantify interactions between electronically excited states.

2.講演者： Cathleen M. Crudden（Dept. of Chemistry, Queen・s University）

講演題目：Asymmetric synthesis with organoboranes and metal-modified mesoporous molecular sieves

講演内容：

Cationic Rh complexes react with vinyl arenes to give the desired (chiral) boronate esters (2) in high yields, regioselectivities, and enantioselecitivites. These boronate esters can be used in the synthesis of important 2-aryl propionic acids such as Ibuprofen and Naproxen. In our study, we observe a complete reversal in regioselectivity in favour of the linear isomer when Ir is employed instead of Rh and a complete reversal in the sense of enantioselection when HBPin is used in place of HBCat.

In the second part of the lecture, our research into the synthesis and applications of micelle-templated materials such as MCM-41 and SBA-15 will be described. The preparation of thiol modified mesoporous materials and their application as Pd scavengers will be described. The Pd-encapsulated materials have been employed as catalysts themselves for the Heck reaction and Suzuki coupling. No leaching is detected in either case.

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