



第181回触媒化学研究センター談話会

講演者: Magnus Johnson 氏 (スウェーデン王立工科大学)

演題: 和周波発生(SFG)振動分光法による酢酸水溶液表面における分子構造の研究

日時: 2004年12月17日(金)
15:45 - 17:00

会場: 北海道大学創成科学研究棟 (4階 04 - 213)

講演内容:

Aqueous solutions of acetic acid that have been studied by Vibrational Sum Frequency Spectroscopy (VSFS) using a narrowband picosecond system, an inherently surface sensitive nonlinear laser spectroscopy technique, well suited for studies of surfaces and interfaces. Experiments have been performed in the concentration range 0-100% acetic acid, and the CH, OH, and C=O vibrations have been targeted. To clarify peak assignments, experiments with deuterated acetic acid and water have also been performed. The spectral evolution upon changing concentration has been explained in terms of different acetic acid species, such as the hydrated monomer, linear dimer, and cyclic dimer, known from IR and Raman spectroscopy. In order to determine the orientation of the acetic acid molecules residing at the surface, experiments with different polarizations of the laser beams have been performed. By determining the orientation of both the methyl group and the carbonyl group, a narrow range of possible orientations could be obtained. This work has been carried out at the Royal Institute of Technology (KTH) in Stockholm, Sweden. Some recent studies about interference effects of LB films on solid substrate performed in Catalysis Research Center, Hokkaido University, using a broadband femtosecond SFG system, will also be reported.

皆様のご来聴をお待ちしております。

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P.S.:講演会の後で研究室でビアパーティを行うので、歓談したい方はどうぞ気軽に参加してください。また南キャンパスからご参加の方は、本部事務局15:30発の循環バスを利用すると、アクセスは大変便利となります。また、創成科学研究機構は毎時12分と42分に循環バスが発車されます(最終便は6:42)。