



演題：**Hybrid materials made of solids and liquids – from catalyst immobilization to membrane reactors**

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場所：フロンティア応用科学研究棟 1階 セミナー室 1

※感染対策を施した参加者対面とビデオ会議システム「Zoom」によるオンライン参加を併用したハイブリッド開催。Haumann 先生はオンラインにてご講演。

ABSTRACT

Classical heterogeneous catalysis is extremely attractive for industrial production since separation of product and catalyst usually is simple and complete. However, in many technical, heterogeneously-catalyzed processes, only a small part of the metal loading is responsible for the majority of the observed catalytic activity. In traditional homogeneous catalysis, in contrast, all dissolved metal complexes show a uniform reactivity that can be rationally optimized by the help of suitable ligands. The price to pay is that product-catalyst separation is often difficult in these systems.

Hybrid materials, as investigated in the Haumann lab, are bridging homogeneous and heterogeneous catalysis by placing a suitable LIQUID (e.g. ionic, organic, metallic) onto dedicated SUPPORTS (e.g. ceramic, carbon). Examples presented in this work will showcase applications in hydroformylation, selective hydrogenation and water-gas shift reaction. In addition, these hybrid materials allow the implementation into membrane reactors for the first time, hence further process intensification is possible.

本講演は、Hokkaido Summer Institute 『Leading and Advanced Molecular Chemistry and Engineering IIIC (Separation Process Engineering II)』の一部として認定されています。

共催：北海道大学大学院総合化学院, フロンティア化学教育研究センター

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