Frontier Chemistry Center
フロンティア化学教育研究センター 講演会

演 題： **Model Catalysts at the Atomic Level: From Structure (Geometric and Electronic) to Reactivity**

講 師： **Prof. Hans-Joachim Freund**
Fritz-Haber-Institut
der Max-Planck-Gesellschaft,
Germany

日 時： 2016 年 1 月 15 日（金）15:00~16:00

場 所： フロンティア応用科学研究棟
セミナー室 1
Seminar Room 1,
Frontier Research in Applied Sciences Building

共 催： 触媒科学研究所コロキウム
（公社）日本表面科学会 東北・北海道支部

要 旨：

Our understanding of catalysis, and in particular heterogeneous catalysis, is to a large extend based on the investigation of model systems. Increasing the complexity of the models towards supported nanoparticles, resembling a real disperse metal catalyst, allows one to catch in the model some of the important aspects that cannot be covered by single crystals alone. One of the more important aspects is the support particle interface. We have developed strategies to prepare such model systems based on single crystalline oxide films, which are used as supports for metal, and oxide nanoparticles, which may be studied at the atomic level using the tools developed in surface science.

However, those oxide films may also serve as reaction partners themselves, as they are models for SMSI states of metal catalyst. Using such model systems, we are able to study a number of fundamental questions of potential interest, such as reactivity as a function of particle size and structure, influence of support modification, as well as of the environment.

The thin oxide film approach allows us to prepare and such amorphous silica as well as 2D-zeolites. Those systems, in spite of their complexity, do lend themselves to theoretical modelling as has been demonstrated, and as a basis to create new model catalysts.

本講演は、大学院総合化学院『化学研究先端講義/総合化学特別研究第二』の一部として認定されています。

連絡先：触媒科学研究所　長谷川　淳也（内線：9145）