

演題：**Progress and Challenges in the Structural Characterization of Nanoporous Materials by Physical Adsorption**

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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

要旨：

A comprehensive textural characterization of nanoporous materials has become more important than ever for the optimization of novel systems used in many important existing and potentially new applications. The most popular method to obtain surface area, pore size, pore size distribution and porosity information from powders and porous solids is gas adsorption. Within the last two decades major progress has been achieved in understanding the adsorption and phase behavior of fluids in ordered nanoporous materials and in the development of advanced approaches based on statistical mechanics such as molecular simulation and density functional theory (DFT) of inhomogeneous fluids. This progress, coupled with the availability of high resolution experimental procedures for the adsorption of various subcritical fluids, has led to major advances in the structural characterization by physical adsorption. Recently, new challenges emerged concerning the surface and structural characterization of nanoporous materials with more complex pore structures such as hierarchically structured porous materials (e.g., micro-mesoporous zeolites), novel nanoporous carbons, metal organic frameworks (MOFs). Within this context we will discuss recent advances, but will also reflect briefly on the existing challenges in physical adsorption characterization.



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。

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