

# 第116回フロンティア材料研究所講演会

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R2棟1F オープンコミュニケーションスペース1にて

## 演題: **Nanoporous Materials: Introduction and Recent Achievements of Yonsei Aerogel Research**

Aerogel, a representative material of nanoporous materials, is outstanding future material owing to the high surface area with a three-dimensional network of primary particles, low density, low thermal conductivity, high porosity and low dielectric property. Due to these outstanding characteristics, they have found excellent potential application for thermal insulation systems, in aeronautical domains, for environment clean up and protection, heat storage devices, transparent windows, thickening agents in paints, etc. However, native aerogels are fragile and sensitive at relatively low pressures, which limit their application. More robust aerogels, with higher strength and stiffness, can be obtained by compounding aerogel networks with organo alkoxide groups, polymers or porous scaffolds. This presentation gives an introduction of aerogels and recent achievements of Yonsei research such as preparation of various ceramic aerogel materials including silica and silica-based composite materials, enhancement of mechanical properties, control of functional properties including gas sensing, low dielectric, surface reaction, hydrophobicity, and so on for their application to next generation device systems.

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