

31st RAP Seminar

The 31st Seminar on RIKEN Center for Advanced Photonics

Language: Japanese

Date: **Mar. 18 (Fri) 16:00 - 17:00, 2016**

Location: **Cooperation Center, 3F, W319, Wako Campus, RIKEN**

(理研 和光キャンパス 研究交流棟3階会議室 W319)

Title: **Science and Technology by Porous Coordination Polymers / Metal-Organic Frameworks**

多孔性配位高分子 (PCP) / 金属-有機骨格材料(MOF)が拓く科学と技術

Speaker: **Prof. Susumu KITAGAWA**

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The recent advent of porous coordination polymers (PCPs) or metal-organic frameworks (MOFs) as new functional microporous materials, have attracted the attention of chemists, physicists, and biologists due to not only scientific but also application interest in the creation of unprecedented regular nano-sized spaces and in the finding of novel phenomena. This new class of materials encompasses possibility creating platform for porous functions. One target of the synthesis of PCPs is for gas science & technology, focusing on low molecular weight molecules, such as CO, CO₂, O₂, CH₄, C₂H₂, NO, and alkanes because they are associated with the global issues of energy, natural resources, the environment, and living systems. High efficiency separation technology, different from conventional ways, is essential for low energy separation of gas resources, flue gases, air, pollutant gases and other industrial materials. Stimulus-responsive PCPs are also useful for gas biology, providing spatiotemporal bioactive gas (NO and CO) releasing PCPs for control of cell functions. The second target is for solid state ion conductors, which are utilized in various devices such as batteries and fuel cells. PCPs have been emerging as a novel and fascinating platform for solid ion conductors especially in the field of proton conductors performing in the middle temperature range.



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