



# 59<sup>th</sup> RAP Seminar

The 59th Seminar on RIKEN Center for Advanced Photonics

Language: Japanese

Date: **December 21(Fri) 16:00 - 17:00, 2018**

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

(理研 和光キャンパス 研究交流棟 3階会議室 W319)

Title: **Application of Vibrational Circular  
Dichroism to Supramolecular Chirality  
of Molecular Aggregates**

振動円二色性分光法の超分子キラリティへの応用

Speaker:

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The VCD spectroscopy is an extension into the infrared and near-infrared regions of circular dichroism. The method was applied to determine the absolute configuration of a chiral molecule in a solution. Recently its application is widened to solids and interfaces. One problem is that the measured signals are so low that several hours are needed to obtain a reliable spectrum. We have applied the VCD spectroscopy for the gels of chiral low-molecular gelators. Notably VCD signals are enhanced remarkably when chiral molecules form helical fibrils. The large-scaled theoretical simulation rationalized the signal enhancement in terms of the formation of asymmetrically arranged molecular arrays. The model for helical fibrils was established on the basis of the molecular conformation of a gelator. The talk covers the following topics:

- (1) Application of VCD to the dynamics of low molecular gelators
- (2) VCD for supramolecular chirality and amino acids
- (3) Chiral recognition of molecules adsorbed on a solid surface