



89th RAP Seminar

The 89th Seminar on RIKEN Center for Advanced Photonics

Language: Japanese

Date: **May 9 (Fri), 16:20 - 17:20, 2025**

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: **Semiconductor Physics of Halide Perovskites**

ハライドペロブスカイトはどのような半導体か

Speaker: **Prof. Yoshihiko Kanemitsu**
ICR, Kyoto Univ. & Riken RAP

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理化学研究所 光量子工学研究センター 特別顧問

ABX₃-type halide perovskites are receiving much attention as a new class of semiconductor materials from viewpoints of the fundamental physics and applications in optoelectronic devices, because of their excellent properties and ease of fabrication using low-temperature chemical solution processes. Perovskite thin film solar cells show power conversion efficiencies of about 27%, close to the Shockley–Queisser Limit. Perovskite nanocrystal quantum dots exhibit nearly 100% photoluminescence quantum efficiencies and long exciton coherent times. In addition, chiral halide perovskites show unique opto-spintronic properties. Our group at Kyoto Univ. can prepare high-quality samples of single crystals, nanocrystals, and atomically thin layers. This talk discusses the optical, electronic, and thermal properties of halide perovskite semiconductors, summarizing our group's research on the photophysics of halide perovskites.



Pre-registration

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