



HOKKAIDO UNIVERSITY

# AMBITIOUS LEADER'S PROGRAM

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Ambitious 物質科学セミナー

## Theoretical insights into photoisomerization, chirality and molecular motors

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Ultrafast excited-state processes play a key role in photophysics and photochemistry. Among them, light-induced isomerization is found to be of particular interest: for instance, it is involved in the early event of vision and is exploited to build motors at the molecular level. I shall present results on a model of the retinal chromophore as well as on biomimetic molecular compounds in relation to ultrafast spectroscopy experiments. Finally, we shall investigate the directionality of isomerization induced by a single stereogenic center. Indeed, an average mechanical torque can only be delivered if the rotor rotates unidirectionally. But what is required to achieve such a motion?

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