



**HAKUBI RESEARCHERS’
ACTIVITIES IN ICR**

**Hakubi Project: Fostering and Support of
Young Researchers, Kyoto University**





Program-Specific Assoc Prof
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(D Sc)

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Outline of Research

Semiconductor nanostructures are attractive materials that provide a platform to enhance quantum effects. In nanomaterials, strongly-confined electrons and holes form unique quantum states such as multiexcitons, which are hardly generated in bulk semiconductors. Since multiexcitons consist of a few electrons and holes, their generation and dissociation processes have a great potential to increase electric signals in photon-to-current conversion. My research focuses on applications of quantum effects and control of photon-to-current conversion processes in semiconductor nanostructures. I will clarify the microscopic mechanism of photocarrier generation processes in coupled nanostructures and establish a way to recycle thermal and radiative energies.