

## Overview of the Project

This project addresses three major issues that needs technological innovations:

- 1. Information technology: Super high speed, super high density recording and quantum information processing
  - 2. Energy technology: Solar energy harvesting with nanostructures
  - 3. Medical technology: Nanobio technologies for medical applications
- on the basis of our photonic, quantum, and bio technologies through collaborative studies over different departments of Nihon University.

To establish a common basis for the research on the three subjects, this project also explores sciences and technologies in

- Photonics and quantum aspects of nanomaterials.

Nanomaterials will be fabricated both from bottom-up approaches and top-down approaches as well as by reactions controlled at the nanometer level. The experimental approaches are complemented by quantum theoretical and computational studies on the interaction of light with matter at the nanometer scale. Nanomaterials will be developed through these approaches for the applications in the above mentioned three areas.

Thus this project aims at providing innovative technologies to contribute to realize a highly-developed sustainable society. We also put an emphasis on education for young generations through the interdisciplinary cutting-edge research.

## Research Groups

The members belong to one or more groups depending on the area of research. Application oriented groups mutually collaborate around the groups for nanoscience and nanotechnology.

