Control of Photons by Photonic Nanostructures and its Applications

Overview: We are investigating photonic nanostructures including photonic crystals for diverse applications. In particular, we are pursuing unprecedented technologies controlling light and novel photonic devices based on the concept of topology, which provides an intriguing approach to control various kinds of waves including light. Our research also interests include quantum optics and light-matter interactions in photonic nanostructures, and nanophotonics using diamond materials toward quantum information applications as well.

Main research subjects:
- Design and fabrication technology of photonic nanostructures
- Control of light emission properties and quantum optics using photonic nanostructures
- Spin-orbit interaction of light in photonic nanostructures
- Topological photonics / phononics
- Diamond nanophotonics