Special Issue

Optical Properties of Confined Quantum Systems 2020

Message from the Guest Editor

Confined quantum systems embrace a wide variety of subjects, ranging from nanostructures—particularly quantum dots, quantum wires, and planar nanostructures, including graphene-based systems—to quantum systems of microscopic scale, such as quantum atomic gases. Advances in the science of quantum nanostructures over the course of more than twenty years have been remarkable. As a result, confined nanoscale quantum systems already have an outstanding spectrum of applications in various important areas. More recently, studies of quantum phenomena in ultracold atomic gases have seen steadily growing progress and increasing interest, nontrivially involving subjects specific to many other research areas (e.g., polaron physics). Consequently, the optical properties of confined quantum systems represent a great experimental and theoretical interest for their characterization and getting a picture of intrinsic quantum states and collective excitations, which can have significance for potential practical realizations, even including such a fascinating perspective as quantum computing, where a breakthrough is still pending.

Guest Editor

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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