

Special Issue

Applied Mathematics in Quantum Computing, Solid- State Physics and Quantum Optics

Message from the Guest Editor

During the last decades, theoretical and experimental efforts have been made in the field of quantum computing research by using the fundamental properties of low dimensional solid-state structures and quantum optics. Numerical algorithms and the mathematical investigation of the possible quantum computing structures are the focal points of quantum information in worldwide research. In this Special Issue, the main principles of quantum computing are addressed by means of both mathematically rigorous formalism and numerical algorithms. Quantum effects, e.g., decoherence, dephasing, fidelity and collective excitations in solids, as well as quantum structures, e.g., quantum gates/quantum bits (qbits) and quantum computing algorithms, are among the topics included in this Issue. We welcome submissions from outstanding scholars, including but not limited to related research fields.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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