# Special Issue

## 100 Years of Quantum Mechanics

### Message from the Guest Editors

Soon, all physicists will celebrate 100 years of one of the most beautiful parts of physics, quantum mechanics. It was mainly developed during the years 1925–1927 in the works of such great scientists as Heisenberg, Born, Pauli, Dirac, Schrödinger, Landau, von Neumann, Bohr, and many others. Remember that the famous PhD thesis "Recherches sur la théorie des Quanta" was defended by Louis De Broglie in November 1924. It is remarkable that this area of physics, despite its honorary age, is still healthy and developing! This can be easily seen in the topics of interest for the Special Issue:

- Uncertainty relations;
- Quantum mechanics in phase spaces;
- Quantum tomography;
- Dynamics of open quantum systems in the presence of dissipation and decoherence;
- Dynamics of quantum entanglement;
- Quantum–classical transitions;
- Quantum control of evolution;
- Dynamical quantum invariants;
- New exact and approximate solutions in quantum mechanics;
- Path integral methods in quantum mechanics;
- Non-Hermitian quantum mechanics;
- Non-linear generalizations of quantum mechanics;
- Quantum mechanics in finite-dimensional Hilbert spaces.

### Guest Editors

Prof. Dr. Viktor Dodonov

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Prof. Dr. Salomon S. Mizrahi

Prof. Dr. Luis L. Sánchez-Soto

### Deadline for manuscript submissions

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# About the Journal

## Message from the Editor-in-Chief

We get more and more evidence that quantum theory is the correct description of nature. It was born a century ago by explaining a few paradoxical results that could not be understood in the framework of classical physics. Today, quantum physics leads technological revolution in metrology, communication, computation, and the design of novel materials. Still it needs more solid foundations, and we need to develop a deeper understanding of how it can be used for new applications.

*Quantum Reports* is an online, open-access journal providing an advanced forum for clarifying foundations of quantum theory and developing its applications in all fields of physics and technology. *Quantum Reports* is inviting innovative and insightful contributions from the growing community of researchers of quantum science.

## Editor-in-Chief

Prof. Dr. Lev Vaidman
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