



## Quantum Entanglement and Quantum Optics: Latest Advances and Prospects

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### Message from the Guest Editor

Dear Colleagues,

Nowadays, entanglement phenomenon (of photons, phonons, atoms, superconducting qubits, magnons, and etc.) plays a key role in quantum optics researches and quantum information science and technologies. Motivated from this realization, we would like to invite original submissions to the Special Issue, "Quantum Entanglement and Quantum Optics: Latest Advances and Prospects". The subject of submissions is extended to the dynamical systems, in which the entangled states are produced, analyzed, quantified or even are used in setups to perform quantum teleportation protocols, quantum repeaters, entanglement swapping, and etc., either theoretically or experimentally. Moreover, we have particular attention to symmetric (for instance symmetric N-qubit systems) and anti-symmetric Hamiltonians in various interactions models containing atom-field interactions, the dynamics of which is of great importance in quantum information theory. In this regard, the construction of (genuinely) entangled (multipartite) quantum states based on the group theory, as well as in PT- and anti-PT-symmetric Hamiltonians, are particularly welcome...





# symmetry



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## Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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