

## Special Issue

# Superconducting Spin Dynamics and Quantum Effects

### Message from the Guest Editor

The Special Issue *“Superconducting Spin Dynamics and Quantum Effects”* focuses on the rapidly developing frontier where superconductivity, spintronics, and quantum science converge. The interaction between spin and superconducting order parameters enables a range of emergent quantum phenomena that are central to both fundamental physics and the development of quantum technologies. This Special Issue aims to provide a multidisciplinary platform for exploring spin-dependent mechanisms in superconducting systems, from the microscopic origins of spin coherence and relaxation to macroscopic quantum functionalities. Topics include, but are not limited to:

- Spin dynamics in superconductors
- Superconducting spintronics
- Topological and unconventional superconductivity
- Quantum coherence and hybrid systems
- Novel materials and heterostructures
- Ultrafast and nonequilibrium phenomena
- Device concepts and applications

By integrating perspectives from condensed matter physics, quantum materials, and device engineering, this Special Issue seeks to advance the understanding of superconducting spin dynamics and promote their application in future quantum and spintronic technologies.

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### Guest Editor

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### Deadline for manuscript submissions

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## Quantum Reports

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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.

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### Editor-in-Chief

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