

Special Issue

Spin and Charge Transport in Novel Quantum and Topological Materials

Message from the Guest Editors

One of the most striking properties of emerging quantum/topological materials is their transport properties, where the intricate quantum/topological properties of electrons in the material lead to novel electronic states or phenomena (e.g., topological surface/edge states, correlated insulator to superconductor transition). Since electrons carry electric charge as well as spin angular momentum, quantum or topological materials often host interesting magnetotransport properties due to the coupling between charge, spin, and band topology (high linear magnetoresistance, anomalous quantum Hall, chiral-anomaly-induced negative magnetoresistance, etc.). These novel quantum effects may be exploited in future electronic, memory, or computing devices with high performance and low dissipation. This Special Issue reviews the current status and future perspectives of different quantum/topological materials (in either bulk, thin film, or nanostructure form) and devices with a focus on the electronic and spin transport properties.

Guest Editors

Prof. Dr. Xuan Gao

Department of Physics, Case Western Reserve University, Cleveland, OH 44106, USA

Dr. Shulei Zhang

Department of Physics, Case Western Reserve University, Cleveland, OH 44106, USA

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Magnetoechemistry
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
magnetoechemistry@mdpi.com

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Editor-in-Chief

Prof. Dr. Carlos J. Gómez García

Department of Inorganic Chemistry, Faculty of Chemistry, University of Valencia, C/Dr. Moliner 50, 46100 Burjassot, Spain

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