

Journal of Semiconductors

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A Special Issue on

“Quantum Transport in Mesoscopic Systems”

CALL FOR PAPERS

Mesoscopic systems (i.e., between the size of a quantity of atoms and of materials in micrometer scale) are of abundant and charming physical properties that constantly attract tremendous interests in condensed matter physics. To date, the family of mesoscopic systems has been expanded into many platforms, such as self-assembled nano-structures, lithography fabricated nanodevices, epitaxially grown super-lattices, and new emerging van der Waals heterostructures. Quantum transport studies are of great importance in mesoscopic systems in advance understanding of the fundamental physics, as well as the applied science of mesoscopic physics dealing with the potential of future nanodevices.

This special issue will contain articles on novel architectures as well as emerging physical properties of the state-of-the-art mesoscopic systems, including research topics on 2D materials, super lattices, nano-devices, etc. Topics include but not limited to:

- 1)** Synthesis of the novel quantum materials/structures and their physical property characterizations;
- 2)** Heterostructures of van der Waals materials (2D materials) and their electronic transport properties;
- 3)** Novel architectures and novel functionalities of mesoscopic devices, including ferroic behaviors in low-dimensional systems, such as 2D magnetism, 2D ferroelectricity, and the control/modulation of these properties;
- 4)** Exotic quantum behaviors such as topological superconductivity, and non-conventional quantum Hall effect, etc.;

5) Theory and modeling of quantum transport properties in mesoscopic systems.

The issue attempts to collect the most advanced studies on cutting-edge issues of mesoscopic devices. We sincerely hope that this issue on Quantum Transport in Mesoscopic Systems can be beneficial for the broad audience of semiconducting physics.

GUEST EDITORS:

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Manuscript Submission:

Manuscripts must be prepared according to Journal's guidelines, available at <http://iopscience.iop.org/journal/1674-4926>.

Submit your manuscripts via the online submission address at <https://mc03.manuscriptcentral.com/jos-iop>.

Please notify well in advance for your intention to submit a research paper.

Key timetable dates:

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Authors' notification: **October 31, 2019**

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