Special Issue

Electron Transport Mechanism in Optoelectronic Materials

Message from the Guest Editor

The functioning of optoelectronic devices as photovoltaic cells, photosensors and light-emitting diodes relies, not only on their coupling with the electromagnetic field but also on how efficiently charges move. Although equally crucial, the latter theme has been much less investigated than the first one due to the stronger theoretical and experimental complexity. Indeed, different processes as band transport and site hopping can be in place and spatial morphology becomes important. Phonons can mediate processes in a more critical way and impurities are pivotal. The aim of this special issue is helping to fill this gap. We encourage experimental and theoretical contributions focusing on electron and hole transport phenomena on the broad range of optoelectronic materials. We encourage also contributions addressing basic aspects of transport measurement and of its simulation including first-principles simulations. A non-exhaustive list includes 3D and 2D organometallic perovskites, organic polymers, nanostructured covalent semiconductors. We welcome also experimental and theoretical methodological advances.

Guest Editor

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Message from the Editor-in-Chief

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