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Functional Materials for Memristors, Metal-Insulator-Metal (MIM) Tunneling Diodes and Field Effect Transistors (FET)

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Deadline for manuscript
submissions:

20 December 2025

Message from the Guest Editor

his Special Issue focuses on the functionalization, via emerging materials, fabrication, and testing of THz tunnelling MIM diodes, memristors, and FETs. Applications ranging from telecommunication, to sensing and 3D imaging (such as that using neuromorphic chips), to non-volatile information storage and processing are also highlighted.

Recently, memristors made from 2D materials have gained enormous attention. These materials offer advantages such as a low switching voltage, reduced power consumption due to an ultrathin body, and an absence of dangling bonds that can cause scalability issues with ultrathin oxides. The choice of insulating material is crucial for MIM tunneling diodes and FETs. Recently, 2D insulating and semiconducting materials, respectively, have been used for designing and simulating MIM tunneling diodes and FETs. Thus, functional materials play a crucial role in the performance and behavior of these electronic components, impacting their applications and scalability.

- tunneling MIM diodes
- memristors
- FET
- emerging materials
- neuromorphic chips
- volatile memory and information processing
- 3D imaging via neuromorphic chips



mdpi.com/si/207361

Special Issue



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Message from the Editor-in-Chief

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