

Special Issue

Oxide Semiconductor Materials and Devices

Message from the Guest Editors

Over the past few decades, oxide semiconductors have been successfully mass-produced for being used as driving transistors in display backplanes. Recently, their applications have expanded to include configurations where oxide semiconductors and silicon transistors are integrated into the same backplane circuitry for low-power operation (known as LTPO). Moreover, there is ongoing research to utilize the low leakage current of oxide semiconductors in various memory devices (such as DRAM and NAND), and efforts are being made to enhance the utilization of silicon chips by integrating oxide transistors monolithically in the BEOL area of silicon chips. This Special Issue aims to present original research and comprehensive review articles on recent advances in all aspects of oxide semiconductor materials and devices. Potential topics include but are not limited to the following:

- Fabrication methods: sputter, ALD, CVD, solution,
- High mobility oxide semiconductor
- Instability issues of oxide semiconductor
- Scaling of oxide semiconductor transistors for high-resolution
- Novel, emerging applications of oxide semiconductor

Guest Editors

Prof. Dr. Jiyoung Kim
Dr. Si Joon Kim
Dr. Jae Won Na

Deadline for manuscript submissions

closed (20 December 2025)



Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



mdpi.com/si/219788

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

[mdpi.com/journal/
materials](https://mdpi.com/journal/materials)





Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



[mdpi.com/journal/
materials](https://mdpi.com/journal/materials)



About the Journal

Message from the Editorial Board

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editors-in-Chief

Prof. Dr. Maryam Tabrizian

1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

Prof. Dr. Yuguang Ma

State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, China

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) /
CiteScore - Q1 (Condensed Matter Physics)