



## Magnetoresistance Effects and Their Application to Spintronic Devices

Guest Editors:

**Prof. Dr. Koki Takanashi**

Institute for Materials Research,  
Tohoku University, 2-1-1  
Katahira, Aoba-ku, Sendai 980-  
77, Japan

**Prof. Dr. Atsufumi Hirohata**

Center for Science and  
Innovation in Spintronics,  
Tohoku University, Sendai 980-  
8577, Japan

Deadline for manuscript  
submissions:

**closed (31 December 2017)**

### Message from the Guest Editors

Dear Colleagues,

Half-metallic ferromagnets have been attracting intensive research in the view of realising an ideal 100% spin-polarised ferromagnet at room temperature. Among such ferromagnets, Heusler alloys have the greatest potential due to their high Curie temperatures, good lattice matching with major substrates, large minority-spin band-gap, and large magnetic moments in general. In this Special Issue, we focus on their magnetoresistance, in both vertical and lateral junctions, formed with a non-magnetic metallic or insulating layer. These junctions can be implemented in a read sensor in a hard disk drive or in a cell of magnetic random access memory to improve their recording density and operation efficiency. We intend to cover from theory and fundamentals of such junctions to their applications.

Prof. Dr. Koki Takanashi

Prof. Dr. Atsufumi Hirohata

*Guest Editors*





an Open Access Journal by MDPI

## Editor-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

## Message from the Editor-in-Chief

*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.

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

## Contact Us

---

Materials Editorial Office  
MDPI, St. Alban-Anlage 66  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/materials](http://mdpi.com/journal/materials)  
[materials@mdpi.com](mailto:materials@mdpi.com)  
[X@Materials\\_Mdpi](https://twitter.com/Materials_Mdpi)