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Application of 2D Transition Metal Dichalcogenides for Advanced Nanosensors

Guest Editors:

Dr. Lado Filipovic
Institute for Microelectronics, TU Wien, Gußhausstraße 27-29/E360, 1040 Wien, Austria

Prof. Dr. Tibor Grasser
Institute for Microelectronics, TU Wien, Gußhausstraße 27-29/E360, 1040 Wien, Austria

Deadline for manuscript submissions:
closed (31 March 2022)

Message from the Guest Editors

Dear Colleagues,

For many years, the principal strategy to improve the sensitivity of solid-state sensors has been to increase the surface area in contact with the environment or to fabricate thinner sensing films. Since sensing primarily occurs at the film's surface, while conductivity is a bulk property, thinner films provide an increase in the surface-to-volume ratio which improves the sensitivity. While graphene has received the most attention in the last few decades, research has struggled to provide a working graphene-based field-effect transistor (FET) due to its lack of a bandgap. In the meantime, a host of other potential two-dimensional (2D) materials have risen in prominence, such as transition metal dichalcogenides (TMD).

This Special Issue invites research papers and reviews on all topics related to the utilization of 2D TMDs for sensing applications including, but not limited to, the following:

- Room-temperature gas sensors;
- Photodetectors;
- Thermal detectors;
- High-sensitivity pressure sensors;
- Biosensors;
- Acoustic sensors;
- Flexible nanosensors;
- Piezoelectronic devices;
- Effects of TMD layer growth and synthesis on sensor behavior.

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Special Issue

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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

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Contact Us

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

Tel: +41 61 683 77 34
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