Special Issue

Sleep, Neuroscience, EEG and Sensors

Message from the Guest Editor

Among devices related to polysomnography, electroencephalograms (EEGs) possess unique abilities to exquisitely reveal the macro- and micro-structural patterns of sleep. At the micro-structural level, essential markers of the transition from wakefulness to sleep, such as theta waves and slow eye movements, manifest in EEGs. The hallmarks of NREM sleep, namely, slow waves and spindles, are defined using EEG reads. Periods of phasic and tonic REM sleep can be identified on the same basis. Fundamental and applied sleep research are supported via the analysis of EEG signals. Closed-loop systems to enhance sleep quality, depending on real-time interpretation of sleep EEG reads, have been proposed and implemented, demonstrating successful outcomes during the subsequent period of wakefulness. Some of the topics considered in this Special Issue are listed below:

- Unobtrusive EEG sensing for sleep;
- EEG electrode technology and comfort;
- Algorithms for sleep EEG interpretation.
- Closed-loop sleep EEG-based systems for sleep enhancement and daytime outcome improvement;
- Falling asleep facilitation;
- Sleep quality enhancement.

Guest Editor

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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