

Sensors and Materials

Special Issue on High-Voltage Current and Voltage Sensors, Measurement Techniques, and Applications

Call for Papers

Online failure detection and condition monitoring will play a crucial role in the development of smart high-voltage power systems. The uses of smart high-voltage and high-current sensors, and controls for remote monitoring are integral to the operation of smart power systems. Various high-voltage current and voltage sensors including optical sensors, air-core coil-based sensors, resistive-capacitive dividers, and hybrid solutions have gained increasing interest for use in digital electrical power systems. In addition, digital signal processing and artificial intelligence techniques have been developed for measuring voltage and current signals in power systems including partial discharge signals. There are many promising methods of denoising signals to obtain real signals from noise, including wavelet transforms, time-frequency transforms, and neural network algorithms. Although some of them have already been commercialized, much effort is still required to achieve safer designs, higher accuracy and linearity, a wider bandwidth, a smaller size, and a lower cost. To this end, it is essential to introduce advanced measurement techniques and device and material technologies in smart high-voltage power systems. This special issue will focus on state-of-the-art technologies for high-voltage current and voltage sensors, measurement techniques, and applications. The scope also extends to associated topics, such as signal processing, algorithms, data analytics, and materials that enhance sensor performances.

Scope:

- High-voltage and high-current sensors
- Sensing systems in high-voltage systems
- Sensor networks in high-voltage systems
- Condition monitoring
- Advanced materials used in sensors
- Partial discharge
- Advanced techniques for high-voltage and high-current measurement and other purposes

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If you have any questions, please feel free to contact the editorial staff at the address below.

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