Special Issue

Wireless Power Transfer and Inductive Charging

Message from the Guest Editors

Wireless power transfer (WPT) systems, particularly those utilizing inductive coupling (IWPT), have been under intensive research in recent years. This technology presents many applications, from charging electrical vehicles or mobile devices to powering biomedical devices. IWPT transmits power through magnetic induction between a transmitter and a receiver coil and relies on resonant circuits to improve and optimize the power transfer. The transmitter coil is powered with a high-frequency current (from a few kHz up to a few MHz), which induces a current in the receiver coil that can be connected to any load, including batteries. IWPT techniques allow the power to be transferred without electrical contact, making it possible to transfer energy when wired connections are impractical or even impossible. Also, it can transfer power in harsh environments with water, dust, or dirt. Additionally, these systems reduce the utilization of sometimes bulky, heavy, and expensive batteries, which is particularly important in applications such as electric vehicles and implantable biomedical devices.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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