



What is the future of wireless power transfer (WPT)?

Foresights and development trends of future smart WPT are envisioned. Wireless energy router and internet will support energy trading as well as data and energy sharing in smart cities. Popularization of wireless power transfer (WPT) has promoted the multi-disciplinary explorations and integration.

Who invented wireless power transfer (WPT)?

1. Introduction Over one century ago, Nikola Tesla invented and patented the cordless electric energy transfer [1,2]. Recently, electromagnetic resonant coupling and new physical concepts have greatly advanced the development of wireless power transfer (WPT) technologies [,,].

What are the technical challenges faced by wireless power transfer (WPT)?

Technical challenges of adapting the wireless power transfer One of the primary technological issues encountered in WPT is the occurrence of efficiency degradation. The wireless transmission of electricity incurs energy losses that have a direct impact on the overall efficiency.

What is smart wireless power transfer?

Critical classification of smart wireless power transfer. The smart WPT fundamentally differs from the conventional WPT because it synergistically integrates modulation, conversion, intellectualization, internet and trading into WPT to meet the ever-increasing demand of our modern society and human life [5, 42].

What is a wireless power and drive transfer (WPDT) system?

Differing from the WPIT system, the new designs of wireless power and drive transfer (WPDT) systems were developed for different practical applications , such as for wireless motoring [14, 93, 96], wireless lighting [81, , ,], and wireless heating . They all can be generalized as the wireless power drive.

Are wireless power transfer topologies used for static and dynamic charging of EV battery?

Wireless power transfer topologies used for static and dynamic charging of EV battery: a review Int. J. Emerg. Elec. Power Syst., 21(1)(2020), Article 20190151 Google Scholar A.Fathollahi, S.Y.Derakhshandeh,

ADVANCED TECHNOLOGIES UTILISED IN WIRELESS POWER TRANSFER SYSTEMS



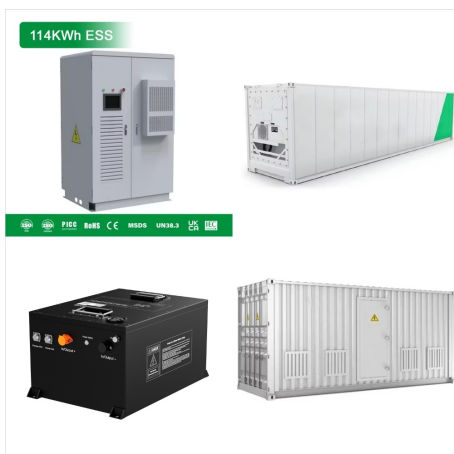
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This paper proposes a novel approach to simultaneously identifying multiple critical parameters in a wireless power transfer (WPT) system, such as the resonant frequency, mutual inductance, and load resistance, solely from the primary side. The key is to adopt a primary-side-switch-controlled capacitor (SCC) to ensure that the imaginary part of the input impedance is ???



Wireless charging system (WCS) supplies power for electric vehicles (EVs) and mobile devices with electrical isolation. It has the advantages of providing automatic charge and increasing device mobility [1-3]. Since the magnetic coupler is loosely coupled, the misalignment weakens the mutual inductance and increases the leakage magnetic field, and then the ???



Finally, the basic principles of wireless power and data transfer system are presented in the Sections 4 and 5, including essential specifications, optimization suggestions, and advanced research in cardiovascular implants. ???

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Wireless power transfer provides a most convenient solution to charge devices remotely and without contacts. R&D has advanced the capabilities, variety, and maturity of solutions greatly in recent years. This survey provides a comprehensive overview of the state of the art on different technological concepts, including electromagnetic coupled and uncoupled ???



1 Introduction. Wireless power transfer (WPT) is widely used in diverse scenarios [1-4], such as electric vehicles (EVs), electric bicycles, and autonomous underwater vehicles (AUVs).The research focus covers the power electronics converters, compensation topologies [], coil optimisation [], foreign object detection [], and safety issues [].Among these fields, the coil ???



1 Introduction. Because wireless power transfer (WPT) technology is characterised by safety, convenience, strong environmental adaptability and so on, it has drawn much attention from the academic circles and industrial circles [].The magnetically coupled WPT technology is the mainstream in the current research, and it has been gradually applied to some fields, such as ???

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IET Power Electronics Special Issue: Advanced Technologies Utilised in Wireless Power Transfer Systems Optimisation of planar rectangular coil achieving uniform magnetic field distribution for EV wireless charging based on genetic algorithm ISSN 1755-4535 Received on 11th November 2018 Revised 22nd April 2019 Accepted on 26th June 2019



1 Introduction. Wireless power transfer (WPT) system has a wide range of applications such as consumer electronics, electrical vehicles (EVs), medical devices, and among others [1-19].However, the transmission ???



Finally, the basic principles of wireless power and data transfer system are presented in the Sections 4 and 5, including essential specifications, optimization suggestions, and advanced research in cardiovascular implants. Particularly, the mid-field WPT with patterned metal plates has a great potential to power miniaturized cIMDs in deep

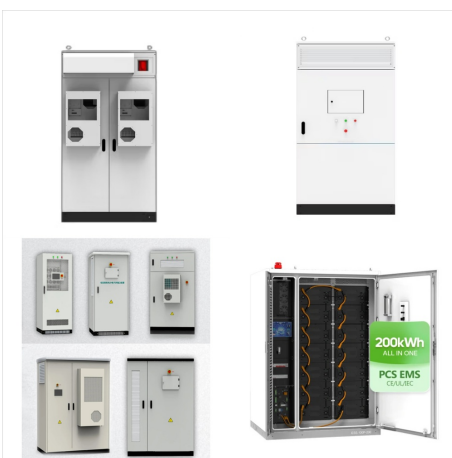
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Special Issue: Advanced Technologies Utilised in Wireless Power Transfer Systems. Free Access. communication can be conducted via a wireless channel, and has been tested in satellites, whereas the wireless ???



This chapter provides an investigation of the wireless power transfer domain. It follows the description of the analysis and identification of the system& #8217;s parameters, which consist of two magnetically connected coils utilized in constructing the wireless power

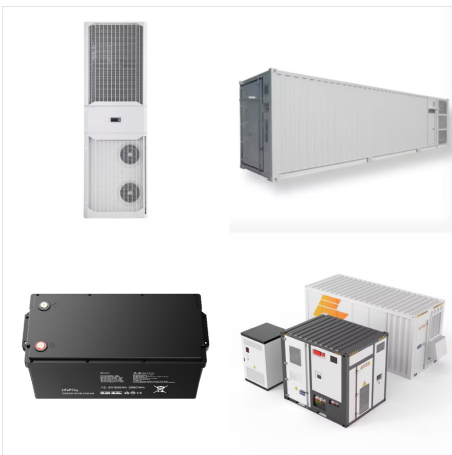


1 Introduction. Wireless power transfer (WPT) is a cutting-edge technology that has achieved significant progress in medical applications, electric vehicles (EVs) and consumer electronics such as cellphones and laptops [1-15] a WPT system, higher transmission efficiency and regulated load voltage/power are two design targets or criteria of interest [14-19].

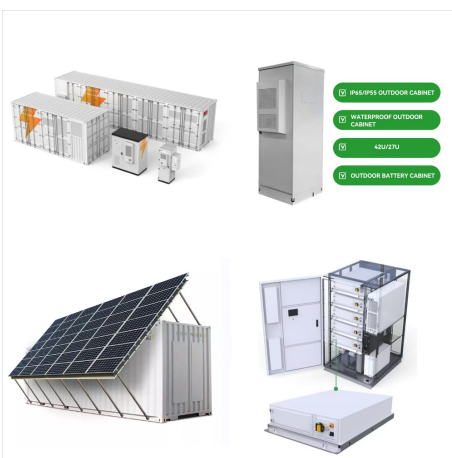
ADVANCED TECHNOLOGIES UTILISED IN WIRELESS POWER TRANSFER SYSTEMS



1 Introduction. Wireless power transfer (WPT) technology has been attracting academical and industrial attention for its advantages of canceling the twisted electrical wires by transferring energy through a relatively large air gap with the magnetic field.



Transfer Systems Guest Editorial: Advanced Technologies Utilised in Wireless Power Transfer Systems ISSN 1755-4535 E-First on 26th July 2019 doi: 10.1049/iet-pel.2019.0824 Introduction We greatly appreciate the editorial board of IET Power Electronics for their support for the Special Issue: Advanced Technologies Utilised in



Automatic wireless charging of mobile electronics (phones, laptops, game controllers, etc.) in home, car, office, Wi-Fi hotspots ??? while devices are in use and mobile. Direct wireless power and communication interconnections at points of use in harsh environments (drilling, mining, underwater, etc.) ??? where it is impractical or impossible

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Wireless power transfer (WPT) [1???4] is an emerging technology that has achieved a great advancement in academia and a deep penetration into the commercial market. Electric vehicle (EV) wireless charging is a typical application of the WPT technology [5, 6]. Compared with conductive charging, wireless charging has



Wireless power transfer (WPT), based primarily on inductive power transfer (IPT) technology, is more attractive and suitable for both stationary and dynamic charging of electric vehicles (EVs). Dynamic charging is a means of addressing concerns that are related to commuting distance per charge cycle, the weight of batteries, peak demand on the



Special Issue: Advanced Technologies Utilised in Wireless Power Utilised in Wireless Power Transfer Systems ISSN 1755-4535 E-First on 26th July 2019 doi: 10.1049/iet-pel.2019.0824 Introduction We greatly appreciate the editorial board of IET Power Electronics

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The majority of wireless power transmission methods utilize microwave frequencies, specifically those within the industrial, scientific, and medical (ISM) frequency band, such as 2.45 or 5.8 GHz (0.12???0.05 m). Wireless Power Transfer (WPT) System Modeling is the process of developing mathematical and computer models to describe the



IET Power Electronics Special Issue: Advanced Technologies Utilised in Wireless Power Transfer Systems Active balancing of lithium-ion battery cells using WPT as an energy carrier ISSN 1755-4535 Received on 6th November 2018 Revised 2nd April 2019 Accepted on 25th April 2019 E-First on 24th June 2019 doi: 10.1049/iet-pel.2018.6177



Guest Editorial: Advanced Technologies Utilised in Wireless Power Transfer Systems. If you have the appropriate software installed, you can download article citation data to the citation manager of your choice. Efficiency-based design optimisation of a double-sided LCL compensated wireless power transfer system. Next. Open in viewer. Go to

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1 INTRODUCTION 1.1 Motivation and problem description. Removing the physical contact between power source and electrical components by using approaches, such as autonomous feeding and wireless power transfer was always a problem [1-4]. For this purpose, the solar photovoltaic (PV) solution beside some other renewable energy harvesting methods ???



3 CAPACITIVE POWER TRANSFER SYSTEMS. CPT is a wireless power transmission technology that utilizes an electric field generated by the flow of electric current through capacitors. The concept of CPT was initially explored by Tesla in 1891, where he conducted the first experiment to achieve wireless power transmission through capacitors .



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IET Power Electronics Special Issue: Advanced Technologies Utilised in Wireless Power Transfer Systems Design for continuous-current-mode operation of inductive-power-transfer converters with load-independent output ISSN 1755-4535 Received on 24th November 2018 Revised 17th February 2019 Accepted on 25th February 2019 E-First on 18th March 2019